EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan Guide to Environmental Regulations

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THE MICHIGAN GUIDE TO ENVIRONMENTAL REGULATIONS

INTRODUCTION

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has written the **Michigan Guide to Environmental Regulations** to assist Michigan's business, industry, and local governments in navigating the maze of environmental obligations they face. This guidebook is a ready-reference tool for anyone striving toward compliance with state and federal regulations that affect businesses and institutions. Although some reference is made to local regulations, they are not discussed in detail. Contact your local government officials for information on applicable local requirements.

Many businesses and institutions utilize a variety of materials and potentially hazardous chemicals that generate waste and, in turn, must be handled, treated, or disposed of properly. Although the average business is not a major source of pollution, the industry's aggregate impact on the environment is substantial. Improper handling of materials and waste products often contributes to environmental contamination, leading to costly and harmful effects on everyone involved.

This guidebook describes how wastes may enter the environment, how to prevent them from doing so, and which remediation methods to use if contamination does occur. Some of the most common concerns, along with applicable solutions, are described in the chapters that follow. Topics include discharge of air pollutants; disposal of solid, liquid, and hazardous waste; discharges of wastewater to municipal sewage systems, storm drains, and on-site septic systems; storage of materials; and discharges/releases on the land or into lakes and streams.

The protection of Michigan's environment and public health is in the best interest of all parties. By using the knowledge provided in this guidebook, Michigan businesses can steer clear of compliance problems, avoid costly penalties, and save money in the long run.

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

The ***Michigan Guide to Environmental Regulations*** is intended for guidance only and may be impacted by changes in legislation, rules, and regulations adopted after the date of publication. The suggestions given for identifying and implementing pollution prevention opportunities are not to be used as a substitute for applicable codes, rules, and regulations that impact businesses. Although the guidebook makes every effort to teach users how to meet applicable compliance obligations, use of this guidebook does not constitute the rendering of legal advice.

Diligent attention was given to assure that the information presented herein is accurate as of the date of publication; however, there is no guarantee, expressed or implied, that use of this guidebook will satisfy all regulatory requirements mandated by laws and their respective enforcement agencies. Reliance on information from this document is not usable as a defense in any enforcement action or litigation. The state of Michigan shall be held harmless for any cause of action brought on as a result of using of this publication.

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GUIDEBOOK CONTENTS

FACILITY-ASSESSMENT SURVEY

This guidebook presents a comprehensive overview of all the environmental regulations applicable to Michigan businesses. Although the guide may appear overwhelming, you only need to review those chapters that apply to your facility. We encourage you to take the time to look at every chapter but realize this may not be a reasonable expectation. To tailor the guide to benefit your specific operation, we have included the Facility-Assessment Survey. The survey asks a series of questions through which the answers will lead you to specific chapters you need to read.

To complete the Facility-Assessment Survey, simply answer the questions on the following pages, “yes” or “no.” Depending on how you answer a particular question, you may be referred to a chapter of the guidebook that applies to your operation. Some chapters apply to all businesses and are phrased as such. The Facility-Assessment Survey is an effective navigational tool that can be referenced whenever necessary. Take the time to refer back to these questions as your operations change or new questions arise.

As you go through the self-assessment survey, you may find areas of non-compliance. It is estimated that thousands of small businesses in Michigan have never applied for or obtained necessary environmental permits, fearing the disclosure of information to state agencies would lead to enforcement and penalties. The Environmental Audit Privilege and Immunity Law removes this fear and provides incentives for businesses to perform environmental audits and promptly report and correct violations. This will lead to increased compliance with environmental requirements and further protection of Michigan’s outstanding natural resources.

In general, the program has two main elements: a privilege that protects the audit report and audit-implementing personnel from disclosure (they cannot be used in legal proceedings against the company), and immunity provisions can be sought for violations that are reported and corrected in accordance with the law. Obtaining privilege involves filing a document called a "Notice of Intent to Perform an Environmental Audit." To be eligible for privilege under this program, this notice must be filed before the audit is commenced and other general provisions must be met such as the findings must be found by the company, (not by EGLE staff). Immunity provisions can be sought later by filing a document called a "Voluntary Disclosure." You can learn more about the program from EGLE’s Environmental Incentives web page.

CHAPTER 1: AIR QUALITY REGULATIONS

QUESTION	If Yes	If No
1. Do you have, or intend to install, equipment or processes that generate air pollution? (e.g., incinerator, boiler, solvent degreaser, coating booth, grinding operations, material storage piles, etc.)	Ch. 1.2.1	Continue
2. Do any activities at your facility generate dust or particulate?	Ch. 1.3	Continue
3. Do you open-burn any waste?	Ch. 1.3.3	Continue
4. Do any of you processes emit volatile organic compounds (VOCs)?	Ch. 1.5 & 1.6	Continue
5. Are you interested in learning about the benefits to be gained through environmental stewardship?	Ch. 1.11	Continue
6. Are you renovating or demolishing a building?	Ch. 1.16.6	Continue
7. Is your facility subject to a federal New Source Performance Standard (NSPS)?	Ch. 1.17	Continue
8. Do you sell electricity to the grid and burn fossil fuel?	Ch. 1.18	Continue
9. Do you use or store any substance regulated under Section 112(r) of the Clean Air Act (CAA)? *(CAA Section 112(r) substances are defined in Appendix B.)*	Ch. 1.19	Continue
10. Do you have equipment or processes that utilize chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs) as a refrigerant? *(e.g., refrigeration units)*	Ch. 1.20	Continue

CHAPTER 2: WASTE AND MATERIALS MANAGEMENT REGULATIONS

Every facility generates solid waste *(e.g. garbage, rubbish, yard wastes, etc.)* and it is important to know your disposal and recycling requirements and options. It is recommended you read Chapter 2.2

QUESTION	If Yes	If No
11. Do you open-burn any wastes?	Ch. 2.2.1	Continue
12. Do you store scrap tires on your property or transport scrap tires?	Ch. 2.2.2	Continue
13. Do you generate liquid industrial by-product at your facility? (Liquid industrial by-product is discarded material that is not regulated as a hazardous waste and includes industrial wastewater, used oil that is being recycled, sewer clean-out residue, grease trap clean-out residue, and other liquid wastes.) It is recommended that you read Chapter 2.3 and 2.4.1.	Ch. 2.3	Continue
14. Do you know or suspect you may be generating hazardous waste at your facility? *(*Hazardous waste is defined in Chapter 2.4.1.*)*	Ch. 2.4	Continue
15. Do you generate any universal waste at your facility? (Universal waste includes electric lamps [fluorescent, sodium vapor, mercury vapor, neon and incandescent], batteries, pesticides, elemental mercury containing devices, consumer electronics, antifreeze, and pharmaceuticals.)	Ch. 2.4.1.c	Continue
16. Do you know how to select a qualified company to transport your liquid industrial by-product and/or hazardous waste and/or dispose of it?	Continue	Ch. 2.4.10
17. Do you dispose of any hazardous waste on-site?	Ch. 2.4.11	Continue
18. Are you aware of the employee emergency training requirements?	Continue	Ch. 2.4.12
19. Does your facility produce medical waste, such as body fluids, blood, and/or sharps (needles, either used or unused); is your facility a pharmaceutical manufacturer or a research facility that produces and/or tests vaccinations with live or attenuated viruses; or a medical equipment manufacturer with testing programs, large company with in-house health care facilities, etc.?) It is recommended that you read Chapter 2.5	Ch. 2.5	Continue
20. Do you have or dispose of any of the following materials at your facility?		
• Used oil	Ch. 2.7.1	Continue
• Used oil filters	Ch. 2.7.2	Continue
• Lead acid batteries	Ch. 2.7.3	Continue
• Dry cell batteries	Ch. 2.7.4	Continue
• Fluorescent lamps or other lights	Ch. 2.7.5	Continue

QUESTION	If Yes	If No
• Small capacitors and ballasts	Ch. 2.7.6	Continue
• Sorbents	Ch. 2.7.7	Continue
• Shop towels and other textiles	Ch. 2.7.8	Continue
• Spent parts washer solvent or other solvents	Ch. 2.7.9	Continue
• Aerosols	Ch. 2.7.10	Continue
• Painting waste	Ch. 2.7.11	Continue
• Wastes containing silver (e.g. photo processing waste)	Ch. 2.7.12	Continue
• Electronic waste	Ch. 2.7.13	Continue
• Waste containing radioactive materials	Ch. 2.7.14	Continue
• Antifreeze	Ch. 2.7.15	Continue
• Scrap metal	Ch. 2.7.16	Continue
• Pharmaceuticals	Ch. 2.7.17	Continue
• Biosolids	2.7.18	Continue

CHAPTER 3: WASTEWATER REGULATIONS

It is important for you to be aware of what type of wastewater is discharged from your facility and how it is treated. It is recommended that you read Chapter 3.1.

QUESTION	If Yes	If No
21. Is your wastewater discharged to a publicly owned treatment works facility?	Ch. 3.2.1	Continue
22. Do you employ a hazardous or liquid industrial by-product transporter to dispose of wastewater generated at your facility?	Ch.3.2.2	Continue
23. Is any wastewater discharged into surface waters? (Includes direct discharge to a lake, stream, river, or drain, and indirect discharges via a storm sewer or ditch.)	Ch. 3.2.3	Continue
24. Does your facility's storm water discharge to a separate storm sewer system or direct to waters of the state?	Ch. 3.2.3.d	Continue
25. Is any wastewater discharged into the ground or groundwater? (Includes seepage lagoons, septic tanks/tile field systems, and irrigation systems.)	Ch. 3.2.4	Continue
26. Do you have a wastewater treatment system on-site?	Ch. 3.4	Continue

CHAPTER 4: MATERIAL STORAGE AND TRANSPORTATION

There are a number of terms defined in Appendix B that are key to your understanding of the regulations and their applicability to your operation. It is recommended that you make yourself familiar with these terms before continuing. These defined terms appear in bold lettering. Please note, in some instances, multiple agencies use the same term to describe a regulated group of material; however, its definition differs. Such terms are identified in bold face type followed by a dash and the acronym of the defining agency or regulation (e.g., "**hazardous waste-EGLE,**" "**hazardous waste-USEPA**"). As you answer the questions pertaining to this chapter, refer back to the definitions.

QUESTION	If Yes	If No
27. Do you store any of the following? • Flammable & combustible liquids-Act 207 • flammable & combustible liquids-MIOSHA • highly hazardous chemicals, hazardous material-Act 207 • hazardous substances-CERCLA • hazardous waste-EGLE • hazardous waste-USEPA • Oil-EGLE • Oil-USEPA • Salt *(Definitions for the bolded terms are listed in Appendix B.)*	Ch. 4.1	Continue
28. Do you store or use **polluting materials**?	Ch. 4.2	Continue
29. Does your facility have, or intend to install, an *underground* storage tank?	Ch. 4.3.1	Continue
30. Does your facility have, or intend to install, an *aboveground* storage tank to store flammable and combustible liquids with a flashpoint of less than 200°F?	Ch. 4.3.2	Continue
31. Does your facility have, or intend to install, an *aboveground* storage tank that contains flammable compressed gas or liquefied petroleum gas?	Ch. 4.3.2	Continue
32. Do you transport any **hazardous material-USDOT**, as defined by the U.S. Department of Transportation?	Ch. 4.4	Continue
33. Do you store, use, or transport any polychlorinated biphenyls (PCBs) at your facility?	Ch. 4.5	Continue

CHAPTER 5: SARA TITLE III & COMMUNITY RIGHT-TO-KNOW ACT

All **bolded terms** are defined in Appendix B of this guidebook. It is recommended that you make yourself familiar with these terms before continuing.

QUESTION	If Yes	If No
34. Does your facility store or use **extremely hazardous substances**?	Ch. 5.3	Continue
35. Does your facility store or use extremely hazardous substances or hazardous substances-CERCLA?	Ch. 5.4	Continue
36. Does your facility use, manufacture, or process any **toxic chemical** in an amount greater than its threshold quantity? *(*Toxic chemical is defined in Appendix B. Threshold quantities are identified in the List of Lists, which can be accessed at **Michigan.gov/SARA**.)	Ch. 5.6	Continue

CHAPTER 6: ENVIRONMENTAL EMERGENCIES

All **bolded terms** are defined in Appendix B of this guidebook. It is recommended that you make yourself familiar with these terms before continuing.

QUESTION	If Yes	If No
37. Does your facility store, use, or generate any of the materials defined in Appendix B?	Ch. 6.1	Continue
38. Do you generate any **hazardous waste-EGLE?**	Ch. 6.2.1	Continue
39. Do you store or use any of the following polluting materials at thresholds listed: • **salt** = 5 tons solid form or 1,000 gallons liquid form? • other **polluting materials =** 440 pounds outdoors or 2,200 pounds indoors • **oil-EGLE** = 660 gallon storage tank capacity or 1,320 gallon total above ground storage capacity	Ch. 6.2.2	Continue
40. Does the storage capability for **oil-EPA** or petroleum products exceed any of the following capacities at your facility: • 1,320 gallons for all aboveground storage? • 42,000 gallons for all underground storage? and • Could a release potentially reach navigable waters or adjoining shorelines?	Ch. 6.2.3	Continue
41. Is your facility required to have a storm water permit for the discharge of storm water associated with a manufacturing activity?	Ch. 6.2.4	Continue

QUESTION	If Yes	If No
42. Does your facility handle, use, or store any **CAA Section 112(r) substances** at or above the listed threshold quantity? (CAA Section 112(r) substances are defined in Appendix B. Threshold quantities are identified in the List of Lists, which can be accessed at Michigan.gov/SARA)	Ch. 6.2.5	Continue
43. Does your facility have flammable and combustible liquids on site in above ground containers?	Ch. 6.2.6	Continue
44. Do you transport hazardous material-USDOT?	Ch. 6.2.7	Continue
45. Chapter 6.3 pertains to release notification requirements. It is recommended that you become familiar with the Release Notification Requirements Table so that you will be prepared should there be a spill or release at your facility	Ch. 6.3	Ch. 6.3
46. Chapter 6.4 pertains to release response and cleanup criteria. It is recommended that you read this chapter if you have a release or spill at your facility.	Ch. 6.4	Ch. 6.4

CHAPTER 7: SITES OF ENVIRONMENTAL CONTAMINATION, PROPERTY TRANSFERS, AND LIABILITY ISSUES

QUESTION	If Yes	If No
47. Do you own or operate property that you know, or suspect is contaminated?	Ch. 7.2	Continue
48. Are you considering purchasing property or moving your business to a new location?	Ch. 7.3	Continue

CHAPTER 8: ACTIVITIES AT OR NEAR THE LAND/WATER INTERFACE

QUESTION	If Yes	If No
49. Are you involved in any of the following activities taking place within a 100-year floodplain of a river, stream, drain, or lake: construction, filling, or changing the grade?	Ch. 8.2	Continue
50. Are you involved in any of the following activities taking place below the ordinary high-water mark of an inland lake or stream: dredging or filling, construction or modification of a structure on bottomland, operation of a marina, structurally interfering with the natural flow of the lake or stream, or enlarging or diminishing the area of the lake or stream?	Ch. 8.3	Continue
51. Are you involved in any of the following activities taking place in a wetland: depositing fill material, removing soil, draining surface water, or conducting development? *(Wetland is defined on page 8-4.)*	Ch. 8.4	Continue
52. Are you involved in any of the following activities taking place in a "Designated Environmental Area": dredging, filling, grading, or altering the soil; altering natural drainage; altering vegetation; or conducting construction? *(Designated Environmental Areas are listed on page 8-5.)*	Ch. 8.6	Continue
53. Are you conducting any development activities in a "Critical Dune Area"? *(Critical Dune Areas are listed on page 8-6.)*	Ch. 8.8	Continue

CHAPTER 9: DRINKING WATER

Since all manufacturers supply water to their employees/customers (e.g., drinking fountains, sinks, showers, etc.), it is recommended that you read Chapter 9.

CHAPTER 10: RADIOACTIVE MATERIAL REGULATIONS

QUESTION	If Yes	If No
54. Does your facility possess, use, transport, transfer, or dispose of any radioactive material (RAM)? (RAM might be used in medical treatments, certain testing devices, pharmaceutical manufacturing processes, industrial smoke detectors, some waste "exit" signs, and radium paint. Natural RAM may be found as uranium in soils or as radium sulfite scales on some pipes and fittings from the oil and gas industry.)	Ch. 10	Continue

CHAPTER 11: GEOLOGICAL RESOURES

QUESTION	If Yes	If No
55. Are you involved in the drilling, operation, or plugging of an oil or gas well?	Ch. 11.2	Continue
56. Do you dispose of your waste in an underground injection well?	Ch. 11.3.1	Continue
57. Is your business involved in mining?	Ch. 11.4	Continue

CHAPTER 12: SUSTAINABILITY

QUESTION	If Yes	If No
58. Are you familiar with “Pollution Prevention”?	Continue	Ch. 12.1
59. Do you know how to implement a pollution prevention plan?	Continue	Ch. 12.1.3
60. Are you interested in learning how to increase efficiency and reduce waste in all aspects of your business?	Ch. 12.1.4	Continue
61. Are you aware of what an environmental management system is and what it can do for your business?	Continue	Ch. 12.2
62. Are you interested in learning how to increase energy efficiency and reduce associated costs?	Ch. 12.3	Continue

Michigan Guide to
Environmental Regulations

Chapter 1

AIR QUALITY REGULATIONS

CHAPTER 1: AIR QUALITY REGULATIONS

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

Many businesses operate processes and equipment or engage in activities emitting air pollutants. Some emit contaminants through a stack before entering the atmosphere and some are released in a building or open area before entering the atmosphere. These are considered direct and indirect sources of air contaminants. Sources of air pollution include things like coating and degreasing operations; fuel burning equipment, such as boilers and incinerators; and material handling operations, such as concrete and asphalt batch plants.

Air quality regulations address the quantity and nature of air pollutants that directly or indirectly enter the atmosphere. Regulations described in this chapter are not specifically aimed at reducing worker exposure to air contaminants in the workplace. Air Quality regulations have been developed to protect human health and the environment. Regulations protecting workers from the inhalation of air contaminants are administered by the Michigan Occupational Safety and Health Administration (MIOSHA). Visit the MIOSHA web site (**Michigan.gov/MIOSHA**) for more information.

AGENCIES AND THEIR LAWS AND RULES

Direct and indirect releases of air pollutants into the air are regulated under federal and state statutes and rules. The purpose of these requirements is to minimize the adverse impact air contaminants may have on human health and the environment. The U.S. Environmental Protection Agency (USEPA) is responsible for developing new regulations to implement the mandates of the federal Clean Air Act Amendments (CAAA) of 1990. Federal air quality regulations are published under Title 40, Parts 50 through 99 of the Code of Federal Regulations (40 CFR Parts 50-99).

Part 55 (Air Pollution Control) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451) is the state law that regulates sources of air contaminants. The first administrative rules promulgated under Part 55 of Act 451, the Michigan Air Pollution Control Rules, became effective on August 15, 1967. The Air Quality Division (AQD) of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) is responsible for developing and implementing state air quality rules and enforcing compliance with state and federal air quality requirements.

To assist small businesses impacted by state and federal air quality regulations, EGLE develops publications simplifying air quality regulations, offers training on a variety of air quality regulatory programs, and responds to inquiries.

IMPORTANT AIR QUALITY TERMS

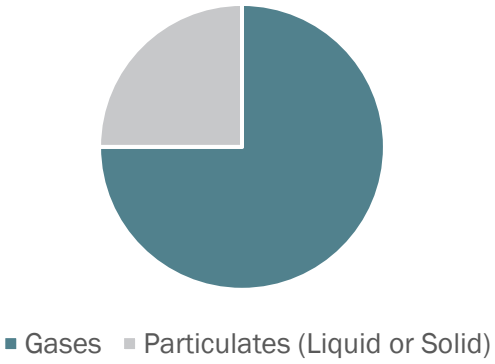
The following are key terms that appear often when discussing state and federal air quality regulations.

AIR CONTAMINANT

In high school chemistry you may have learned all matter exists in either a solid, liquid, or gaseous state under certain conditions. The same applies to air contaminants. Solid and liquid air contaminants are called particulate. The majority of air contaminants exist in a gaseous state. Every air contaminant belongs somewhere on the pie chart in Figure 1.1, which represents the universe of air contaminants.

State and federal air quality regulations, such as the New Source Performance Standards (NSPS) or the EGLE - Renewable Operating Permits (ROPs) / Title V program, target specific defined groups, or what we refer to as families, of air contaminants. There are many families, some big and some small.

Figure 1.1 Universe of Air Contaminants



Many air contaminants belong to more than one family. In fact, most hazardous air pollutants (HAPs) are also considered Volatile Organic Compounds (VOCs). For example, xylene is a VOC, a HAP, *and* a regulated air pollutant. Note: The USEPA uses the term "air pollutant," whereas the state uses the term "air contaminant." Both terms mean the same and can be used interchangeably.

Families of Air Contaminants

Criteria - SO_2, NO_2, CO, Lead, Ozone, Particulate Matter (PM). The USEPA has set National Ambient Air Quality Standards for the criteria air pollutants to protect public health and the environment.

Class I and II - Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs)

Ozone Precursors - VOCs and NO_X. Most sources do not emit ozone directly. However, they may emit VOCs and NO_X which, in the presence of sunlight, contribute to ozone formation.

Hazardous Air Pollutants (HAPs) - The USEPA has identified a specific list of compounds and is regulating sources that are the primary emitters of these compounds through the promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAPs). See Appendix 1-A for a listing of HAPs.

Toxic Air Contaminants - According to R 336.120(f), any substance which is or may become harmful to public health or the environment can be regulated as a toxic air contaminant, except for 41 substances which have been excluded. See Appendix 1-B for a listing of the excluded compounds.

New Source Performance Standards (NSPS) - The NSPS regulates the emission of the following air pollutants from various sources: criteria air pollutants plus dioxin/furan, fluorides, hydrogen chloride, hydrogen sulfide, sulfuric acid, total reduced sulfur, reduced sulfur compounds, and more.

National Emission Standards for Hazardous Air Pollutants (NESHAP) - The following air pollutants were regulated by the NESHAPs that were promulgated prior to the Clean Air Act Amendments of 1990: arsenic, asbestos, beryllium, benzene, mercury, radionuclides, and vinyl chloride.

Section 112(r) Air Pollutants - Section 112(r) of the 1990 Clean Air Act Amendments requires risk management planning and accidental release prevention. A total of 77 toxic chemicals and 63 flammable chemicals are regulated under Section 112(r).

Regulated Air Pollutants - All air pollutants regulated under the federal Clean Air Act: criteria air pollutants, ozone precursors, HAPs, NSPS, NESHAP, and Class I and II air pollutants.

STATIONARY SOURCE

A stationary source or facility consists of all the buildings and structures that house the emission units. Stationary sources can range from something as simple as an auto body shop containing one emission unit (e.g., a spray paint booth) to an auto assembly plant containing multiple buildings housing hundreds of emission units.

DEVICES

There are three types of devices: process, control, and stack. A process device is equipment that generates air contaminants, such as a boiler. A control device is equipment that captures and/or destroys air contaminants, such as a filter. A stack device is a conduit for dispersing air contaminants.

EMISSION UNIT

Many manufacturing operations are made up of various individual process, control, and stack devices. Take a coating line for example. Process devices could include a primer booth, topcoat booth, flash off, and curing oven. The AQD has issued guidance on how to arrange devices into the proper emission unit groupings. The purpose of the emission unit concept is simply to provide some order and consistency on how various air quality regulations (e.g., Permit to Install, ROP, and Michigan Air Emissions Reporting System [MAERS]) are administered.

According to the guidance, AQD Operational Memorandum #6 (which can be found at the Air Quality Division's Web site **Michigan.gov/Air**, click on "State Air Laws and Rules" under the News & Info tab, then "AQD Policy and Procedures"), state and federal rules are used to define the emission unit groupings. Many air rules are specific to a single device or collection of devices. Depending on the rules, the emission unit can be as simple as a parts cleaning tank which contains one process device (i.e., the tank of solvent), no control devices, and no stack devices. On the other hand, an emission unit can be as complex and large as an asphalt plant consisting of many process devices (e.g., dryers and systems for screening, handling, storing, and weighing hot aggregate, dust collectors, and stacks).

The emission unit concept ensures the grouping of devices remains consistent throughout all regulatory programs. Under the Permit to Install, special conditions are grouped by emission unit. Under the ROP program, all applicable requirements are grouped by emission unit. Under MAERS, the annual emissions of air contaminants are reported by emission unit.

POTENTIAL TO EMIT

Potential to emit (PTE) is defined in R 336.1116(n). This is a calculation done for each air contaminant an emission unit emits based on operations at maximum rate capacity, 24 hours per day, 365 days per year, and without any air pollution control device. A stationary source's PTE is the summation of the PTE of all emission units. PTE is typically reported in tons of a specific air contaminant per year, e.g., 200 tons of sulfur dioxide per year.

The PTE of emission units can be reduced by installing control devices or placing restrictions on operating hours and/or the amount of raw materials used only if the operation of the control device **and** these restrictions are federally enforceable, typically contained in a Permit to Install or ROP.

PTE is important because applicability of the state and federal requirements is dependent upon a source's or emission unit's potential to emit, not actual emissions. Actual emissions can deviate day-to-day and year-to-year and are unpredictable, whereas the PTE remains consistent and predictable because it is based upon maximum capacity and continuous operation or is reflected in a limit found in the Permit to Install.

Example:

Company ABC operates three emission units: a boiler and two coating lines. There is no federally enforceable limitation on the PTE. The company calculated the PTE for each of their processes assuming maximum capacity and continuous operation. The table below identifies the PTE of each air contaminant from each emission unit and from the source.

Table 1.1 PTE Calculation for Company ABC (tons per year)

Emission Unit	VOC	CO	NOx	SO2	PM
Coating Line #1	28				5
Coating Line #2	15				5
Boiler		6	5	1	3
PTE of Source	43	6	5	1	13

MAJOR SOURCE

A major source is a stationary source whose PTE exceeds established annual emission thresholds. These levels have been set for individual air contaminants. There are four different types of major sources: major prevention of significant deterioration source (PSD), major offset source, major ROP source, and major HAP source. Each of these categories has different annual emissions thresholds. For example, under the ROP program, a major source is one having a PTE 100 tons or more of any regulated air contaminant, 10 tons of a single HAP, or 25 tons of a combination of HAPs. Under PSD, a major source has a PTE of 100 tons/250 tons or more of any regulated air contaminant, depending on what type of source it is.

Sources meeting one or more major source definitions may be subject to some very complex and costly control requirements.

Table 1.2 Potential to Emit thresholds for major sources.

Type of Pollutant	Title V Major Source tons/year	NESHAP Major Source tons/year	PSD Major[1] tons/year	Major Non-attainment tons/year
Particulate Matter (PM)			100/250	
Particulate Matter ≤ 10 microns in diameter (PM10)	100		100/250	Moderate - 100 Serious - 70
Particulate Matter ≤ 2.5 microns in diameter (PM2.5)	100		100/250	
Volatile Organic Compounds (VOCs)	100		100/250	Marginal - 100 Moderate - 100 Serious - 50 Severe - 25 Extreme - 10
Carbon Monoxide (CO)	100		100/250	Moderate - 100 Serious - 50
Nitrogen Oxides (NOx)	100		100/250	Marginal - 100 Moderate - 100 Serious - 50 Severe - 25 Extreme - 10
Sulfur Dioxide (SO_2)	100		100/250	100
Lead (Pb)*	100		100/250	100
Hazardous Air Pollutants (HAPs) • Any single HAP • Any combination of HAPs		10 25 *Lead compounds are HAPs		
Greenhouse Gases (GHG)	100,000 on a CO2e basis, and 100 GHGs mass basis		100,000 on a CO2e basis	
Any other regulated air contaminant	100			

[1]100 tpy for 28 specific categories (see Table 2-1 of "*Potential to Emit Workbook*), 250 tpy for all other source categories. Call the Environmental Assistance Center for further help with these source categories.

MINOR SOURCE

Sources whose PTE is less than the major source annual emission thresholds are considered minor sources. A true minor source is one that, even operating at its maximum capacity and continuously, cannot exceed the annual emission threshold levels. A synthetic minor source is a source having a permit (i.e., Permit to Install or ROP) with conditions legally restricting its PTE to below the threshold levels. Becoming a synthetic minor source may prevent you from being required to comply with some complicated regulations.

PERMIT TO INSTALL

Emission units or sources of air contaminants exceeding certain thresholds with their potential to emit are required to apply for and receive a Permit to Install (PTI) prior to the installation and operation of the process(es). Receiving a PTI involves filling out a PTI application and providing the AQD with additional information about the air contaminants that will be generated by the process(es). An AQD permit engineer reviews the provided information and drafts permit conditions. These conditions are shared with the company, and many times the public, for comment prior to being finalized and approved.

1.1 SUMMARY OF MICHIGAN'S AIR QUALITY RULES

EGLE's AQD has numerous regulations relating to air permitting of air contaminants. The purpose of these rules is to keep Michigan in attainment of the National Ambient Air Quality Standards (NAAQS). The USEPA has set standards for specific air contaminants including ozone, particulate matter, sulfur dioxide, nitrogen dioxide, lead, and carbon monoxide. Adverse effects to human health and the environment can occur when the concentration of these pollutants exceeds (or is in nonattainment of) the standard.

The rules promulgated under Part 55 of Act 451, the **Michigan Air Pollution Control Rules**, are grouped into parts:

- Part 1 – Definitions
- Part 2 – Air Use Approval (Air Permitting, Offsets, and Air Toxics)
- Part 3 – Emissions Limitations and Prohibitions – Particulate Matter
- Part 4 – Emissions Limitations and Prohibitions – Sulfur-Bearing Compounds
- Part 6 – Emissions Limitations and Prohibitions – Existing Sources of VOC Emissions
- Part 7 – Emissions Limitations and Prohibitions – New Sources of VOC Emissions
- Part 8 – Emissions Limitations and Prohibitions – Oxides of Nitrogen
- Part 9 – Miscellaneous Provisions
- Part 10 – Intermittent Testing and Sampling

- Part 11 – Continuous Emissions Monitoring
- Part 14 – Clean Corporate Citizen Program
- Part 15 – Emission Limitations and Prohibitions – Mercury
- Part 16 – Organization, Operation, and Procedures
- Part 17 – Hearings
- Part 18 – Prevention of Significant Deterioration of Air Quality
- Part 19 – New Source Review for Major Sources Impacting Nonattainment Areas

The Michigan Air Pollution Control Laws and Rules can be viewed at **Michigan.gov/Air** under the "News & Info" tab.

The USEPA also has a variety of complex air quality regulations such as New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAPs), and Prevention of Significant Deterioration (PSD) air programs, to regulate sources of air contaminants. These regulations are discussed in Chapter 1.14 through 1.20.

How do you know which regulations apply to your sources of air pollution?

Prior to installing a new source of air contaminants, you must complete and submit a PTI application to the AQD. The application must include all of the applicable federal and state regulations that apply to the source type or process. These rules and regulations are then incorporated into the Permit to Install. Being well-informed of the laws is the best way to know which regulations apply to sources of air pollution or are exempt from permit requirements.

1.2 PART 2 RULES: AIR PERMITS AND AIR TOXICS REGULATIONS

Michigan has two state air permitting programs: Permit to Install (PTI) and Renewable Operating Permit (ROP). The authority to permit air pollution sources under these programs are found in Part 2 of the Michigan Air Pollution Control Rules. In addition, the Part 2 rules contain a set of rules that regulate the emission of toxic air contaminants. Below is a summary of these widely applicable rules.

Air permitting is the means regulatory agencies use to combine applicable state and federal requirements associated with a source of air pollution into one legally and enforceable document. Facilities that emit air contaminants but are exempt from permitting requirements do not go unregulated. These sources may still be subject to air quality regulations which have requirements to be followed, such as monitoring and recordkeeping to ensure compliance with a specific rule.

1.2.1 PERMIT TO INSTALL PROGRAM

Many businesses do obtain building permits, electrical permits, or mechanical permits for the installation of new structures and equipment from their local municipality. Businesses may not be aware a Permit to Install, or PTI, from the AQD must be evaluated for equipment and activities that emit air contaminants. Air permitting in Michigan is pre-construction, meaning prior to constructing a new facility or putting in equipment in an existing facility, it must be determined whether a permit is required and, if necessary, the permit must be applied for and approved.

According to **R 336.1201** of the Michigan Air Pollution Control Rules, before a facility can legally install, relocate, modify, or reconstruct equipment that emits air contaminants, it must apply for and receive an approved Permit to Install. Each approved Permit to Install contains a list of general and special conditions the source must comply with. These conditions typically:

- ✓ Limit the emission of air contaminants.
- ✓ Restrict hours of operation.
- ✓ Limit the amount and type of raw materials used.
- ✓ Require the operation of air pollution control devices.
- ✓ Contain monitoring and recordkeeping requirements.

Not all sources of air contaminants need to be permitted under R 336.1201. Part 2 of the Air Pollution Control Rules contains numerous rules exempting insignificant sources of air pollution from the Permit to Install requirement. For example, welding operations and natural gas-fired furnaces with a heat rated capacity of no more than 50 million Btu/hr. are exempt from the permitting requirements.

Download EGLE's "***Permit to Install Exemption Handbook***," available at **Michigan.gov/Air** under **State Air Laws and Rules**.

The Permit to Install (PTI):

1. Is a state permit to emit air contaminants into the ambient air.
2. Dictates how compliance with conditions of the permit protects public health and the environment.
3. Includes specific state and federal rules applying to the equipment covered under the permit. Many of these applicable rules are included as "underlying applicable requirements" as a "UAR" in the permit.
4. Conditions limit the potential to emit of the process or facility. If the proposed installation or modification of an emission unit or source meets the definition of a major PSD or offset source, then the source may be subject to additional stringent regulations such as modeling emissions, installing best available control technology (BACT), and going through a public

hearing. The only way to avoid these added requirements is to accept restrictions limiting PTE to below major source emission threshold levels using permit conditions. Businesses who cannot avoid these additional requirements may need the services of a consultant to complete their permit applications.

5. Is free. No fees are associated with applying for and obtaining an air permit in Michigan.
6. Does not expire and does not have to be renewed. Permit remains valid for as long as the equipment is in operation. However, it may require notification of completion of the installation, construction, reconstruction, relocation, or modification (see R 336.1201[7][a]) and notification of the status of compliance (see R 336.1201[7][b]).

If you do need a permit, obtain the "**Permit to Install Workbook – A Practical Guide to Completing an Air Permit Application**." Permit to Install application forms and instructions are available online at **Michigan.gov/Air.**

1.2.2 THE RENEWABLE OPERATING PERMIT (ROP) PROGRAM

It is important not to confuse the PTI with Michigan's other air permit: the ROP. The ROP program falls under Title V of the Clean Air Act Amendments of 1990 and is administered by the AQD under R 336.1210-1218 of the Michigan Air Pollution Control Rules. The ROP program clarifies which requirements apply to a facility emitting air contaminants. Currently, these obligations are scattered among numerous state and federal regulations. The ROP incorporates all requirements into a single document giving the facility, state and local regulatory agencies, the USEPA, and the public a clearer picture of air emission requirements at a facility.

According to R 336.1211, facilities meeting the definition of a "major source" must obtain an ROP. The USEPA has also required all acid rain and waste incineration facilities to obtain an ROP even if they are below the major source cutoffs.

The ROP program does not supersede or replace the PTI requirements. Sources having to apply for an ROP are still required to submit a PTI application when installing or modifying emission units. All PTI conditions are eventually folded into a facility's ROP.

For guidance on determining whether or not your facility is a "major source" and subject to the ROP program, contact the Environmental Assistance Center at 800-662-9278 or refer to EGLE's "***Potential to Emit Workbook***," available at **Michigan.gov/EGLEPublications.**

1.2.3 AIR TOXICS REGULATIONS

In response to increased concern over adverse health effects related to air toxics, federal regulations and state requirements have been put into effect to reduce air toxics emissions. In Michigan, air toxics are regulated under two sets of rules: (1) state administrative rules regulating toxic air contaminants (TACs); and (2) the federal Clean Air Act regulating the release of hazardous air pollutants (HAPs). See Chapter 1.16 for the discussion on HAPs.

According to Michigan's rules, all known substances which are or may become harmful to public health or the environment are regulated as "toxic air contaminants (TAC)." The state of Michigan addresses toxic air contaminants in R 336.1224-1232 (Rules 224-232) of the Michigan Air Pollution Control Rules promulgated under Part 55 of Act 451. The primary requirements are found in Rules 224 and 225, stating that a source emitting a TAC:

- "Shall not cause or allow the emission of the toxic air contaminant from the proposed new or modified emission unit or units in excess of each of the following:
- (Rule 224 [1]): Best available control technology for toxics (T-BACT); requirements for new and modified sources of air toxics; exemptions.
- (Rule 225 [1]): Health-based screening level requirements for new or modified sources of air toxics."

These rules apply to all new or modified sources of air pollution required under Michigan regulations to obtain a PTI (see Chapter 1.2.1). Michigan's toxic air contaminant rules require a two-fold analysis. First, the owners or operators of sources of TACs are required to evaluate and use the best economically feasible, technologically advanced air pollution controls. This means that, as new technology progresses and better air pollution controls are developed, each new or modified source is required to consider the newest and best technology. Second, the facility is required to limit its toxic air emissions to amounts at or below those determined to be protective of public health for each toxic air contaminant. As technology advances, these limits must be continuously reviewed and changed, if necessary, for each toxic air contaminant. Limiting these emissions may be done through the permitting process.

Michigan T-BACT

The special conditions of a PTI set enforceable emission limits and work practice standards. The toxic air contaminant emission limits are based on a control technology analysis (T-BACT). Emission limits are typically expressed in pounds/hour based on maximum operational capacity and in terms of process variables such as material processed, fuel consumed, or pollutant concentrations (e.g., pounds of TAC per million BTUs [lbs/10^6 Btu], pounds of TAC per gallon of coating solids applied, or micrograms of TAC per dry standard cubic meter of air [ug/dscm]).

Best available control technology for toxics (T-BACT) is the most efficient alternative reasonably achievable as stated in R 336.1102(a):

> "T-BACT is the maximum degree of emission reduction which the department determines is reasonably achievable for each process emitting toxic air contaminants, taking into account energy, environmental, and economic impacts and other costs."

Screening Levels

R 336.1225 contains an AQD methodology used to demonstrate an emission unit's TAC emissions. Following this methodology ensures emissions will not result in a harmful effect on the public. One does this by comparing the predicted ambient (outside air) level of the air contaminant at the facility's property line with the appropriate health-based screening level (defined below). If the predicted ambient level is below the screening level and the emission is adequately controlled under best available control technology for toxics (T-BACT), then the emission is acceptable. If it exceeds the screening level, the facility must make changes to reduce the emission or improve the dispersion of the air contaminant, or both. This is done to reduce the predicted ambient level to below the screening level.

R 336.1227 lays out how to demonstrate compliance with a health-based screening level. R 336.1227(1)(a) contains a simple method to determine the allowable emission rate based only on the screening level. This method does not use site-specific data and assumes poor dispersion of the TAC, due to a short stack and short distance from the stack to the facility property line. The screening method in R 336.1227(1)(b) uses a table requiring a few facility-specific characteristics to determine the allowable emission rate. This method generally provides a higher allowable emission rate than in R 336.1227(1)(a) by using site-specific characteristics. Lastly, R 336.1227(1)(c) uses dispersion models to determine compliance with health-based screening levels. This method generally provides for the highest allowable emission rate due to the use of facility and site-specific information and elimination of conservative assumptions.

A screening level indicates the level an air contaminant can be emitted and still be protective of public health. R 336.1225 does not allow companies to emit air contaminants in quantities exceeding the screening levels at the property line, except for special circumstances allowed under R 336.1225(3) and R 336.1226. There are three screening levels: the initial threshold screening levels (ITSL) are screening levels designed to protect against noncarcinogenic effects; initial risk screening levels (IRSL) and secondary risk screening levels (SRSL) protect against carcinogenic effects. Not every air contaminant has all three screening levels. Screening levels are developed from toxicological data and are expressed in concentrations of micrograms per cubic meter (ug/m3) and in various averaging times, i.e., 1 hour, 8 hours, 24 hours, and annually.

The AQD maintains a list of all screening levels. The list of screening levels is updated periodically as more compounds are evaluated, and available at **Michigan.gov/Air** (select "Permits" then "Air Toxics Screening Levels).

1.3 PART 3 RULES: PARTICULATE MATTER

Part 3 of the Michigan Air Pollution Control Rules establishes particulate emission limitations for various activities. Open burning and the density of visible emissions from a vent or stack are regulated as well. Certain facilities are required to develop plans to control fugitive dust emissions from roadways, storage piles, and other dust-generating activities.

1.3.1 PARTICULATE EMISSION LIMITS

R 336.1331 contains maximum allowable emission rates of particulate matter from a variety of emission units, such as fuel-burning equipment, incinerators, steel manufacturing, foundries, kilns, asphalt paving plants, cement manufacturing, iron ore pelletizing, fertilizer plants, and exhaust systems serving material handling equipment not previously identified. Most emission rates are expressed in pounds of particulate emitted per 1,000 pounds of exhaust gas.

1.3.2 OPACITY

Opacity is the degree to which air emissions reduce the transmission of light. Opacity is measured in percentage. For example, if the opacity of air contaminants being discharged from a stack is 20 percent, then 20 percent of the light traveling through the plume is blocked by the air emissions and 80 percent of the light passes through the plume. The higher the opacity, the denser the plume of air emissions. R 336.1301 limits the opacity of visible emissions discharged from an emission unit. This rule prevents businesses from discharging dense smoke from their activities.

1.3.3 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 from a business is prohibited, and open burning from other sources is restricted. **Public Act 102 of 2012** was signed into law on April 19, 2012, prohibiting the open burning of household trash containing plastic, rubber, foam, chemically treated wood, textiles, electronics, chemicals, or hazardous materials. The burning of these materials poses a danger to human health and the environment. The law amends the open burning provisions contained in **Section 11522** of the Natural Resources and Environmental Protection Act (Public Act 451 of 1994). The changes took effect on October 16, 2012, and contain penalty provisions, which may be enforced by local units of government, should a local ordinance not exist.

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 **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. This type of burning requires an asbestos survey be completed and materials removed prior to the burn. An intent to burn notification must also be submitted through EGLE's Asbestos Notification System.

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 EGLE's Open Burning website at **Michigan.gov/OpenBurning**.

1.4 PART 4 RULES: SULFUR BEARING COMPOUNDS

Part 4 of the Michigan Air Pollution Control Rules establish sulfur dioxide emission limitations on boilers and other fuel-burning equipment. The sulfur content of fuels, such as coal and fuel oil, must fall within prescribed percentages.

1.5 PART 6 RULES: EXISTING SOURCES OF VOC EMISSIONS

In 1978, the USEPA published a document containing available methods and technologies designed to reduce emissions from a variety of sources that emit VOCs. Many of the control strategies in this document were incorporated into the Michigan Air Pollution Control Rules, specifically the Part 6 rules.

The USEPA document describes the technologies as reasonably available control technology (RACT). RACT was developed to help state and local agencies determine the level of VOC control needed to represent the lowest achievable emission rate using reasonably available control technology. Significant research was conducted to establish RACT and identify a level of control that industry could comply with, while benefiting the environment through improved air quality. Part 6 rules are often referred to as the RACT rules, and they are used to regulate existing sources of VOCs in accordance with state obligations under the federal Clean Air Act. Table 1.3 contains a listing of all the VOC-emitting emission units regulated under the Part 6 rules.

Table 1.3 Summary of Part 6 Rules

Rule Number	Emission Unit	"Existing" Means Equipment Installed before:
604-605	Storage of organic compounds	July 1, 1979
606-609	Loading of gasoline into gas stations and bulk plants	July 1, 1979
610	Automotive and light-duty trucks; cans; coils; large appliances; metal furniture; magnet wire; and nonmetallic surfaces of fabrics, vinyl, or paper coating lines	July 1, 1979
611-614	Solvent vapor degreasers and cold cleaners	July 1, 1979
615-617	Petroleum refinery	July 1, 1979
618	Cutback paving asphalt	July 1, 1979
619	Perchloroethylene dry cleaning equipment	July 1, 1980
620	Flat wood paneling lines	July 1, 1980
621	Metallic surface coating lines	July 1, 1980
622	Petroleum refineries	July 1, 1980
623	Storage of petroleum liquids	July 1, 1980
624	Graphic art lines	July 1, 1980
625	Pharmaceutical products	July 1, 1980
627	Delivery vessels	Not applicable
628	Synthetic organic chemicals	January 5, 1981
629	Natural gas processing	January 20, 1984
630	Paint manufacturing	July 1, 1987
631	Polystyrene and organic resins	July 1, 1987
632	Plastic coating lines	July 1, 1979
651	Degreasers	Not applicable

1.6 PART 7 RULES: NEW SOURCES OF VOC EMISSIONS

Under Part 7 of the Michigan Air Pollution Control Rules, a new source is defined as any emission unit placed into service on or after July 1, 1979. According to R 336.1702, when installing a new source of VOCs or modifying an existing source, a facility must evaluate the following four emission rates and use whichever one results in the lowest maximum allowable emission rate of VOCs.

1. An emission rate based upon Best Available Control Technology (BACT).
2. The maximum allowable emission rate specified by a New Source Performance Standard (NSPS) promulgated by the USEPA.
3. The maximum allowable emission rate specified as a condition of a Permit to Install.
4. The maximum allowable emission rate specified in the Part 6 rules of the Michigan Air Pollution Control Rules.

BACT ANALYSIS

BACT is defined as the most stringent emission limit or control technique that either has been achieved in practice for a category of emission units, is found in other state air quality rules, or is considered by the regulatory agency to be technically feasible and cost effective. A BACT analysis performed as part of the permit review process triggers continual use of technology resulting in low emissions of air contaminants. Since technology is ever-changing, BACT is an evolutionary process striving for continuous improvement of air quality in the state.

NEW SOURCE PERFORMANCE STANDARDS

Under Section 111 of the Clean Air Act, the USEPA is authorized to establish an NSPS for new or modified sources in specific industrial categories. These standards set emission limits for over 75 categories having the potential to emit a significant amount of air contaminants that could endanger public health.

The NSPS requirements are found in the federal rules published in the Code of Federal Regulations (CFR). The federal rules relating to environmental protection are contained in Title 40 of the CFR. Air quality regulations are found in Parts 50 to 99 of Title 40. The NSPS requirements are in Part 60. Each specific NSPS is a subpart of Part 60.

PERMIT CONDITIONS

An emission rate contained in a previously issued Permit to Install is reviewed by the permit engineer of the AQD and applied to a similar new source undergoing the permit review. From a practical standpoint, this emission rate is not viable as it would be difficult to limit emissions by permit condition to a level more stringent than prescribed by BACT.

PART 6 RULES

The last step in identifying the lowest maximum allowable emission rate for a proposed new source of VOC emissions is the emission limitations contained within the Part 6 rules of Michigan Air Pollution Control Rules.

1.7 PART 8 RULES: OXIDES OF NITROGEN (NO_X)

Part 8 of the Michigan Air Pollution Control Rules establish emission limits on sources of oxides of nitrogen. These sources include larger fossil fuel-fired emission units such as electricity generating units, boilers/process heaters, stationary internal combustion engines, cement kilns, and stationary gas turbines. Emission units subject to the Part 8 rules must comply with the emission limits provided, as well as all applicable monitoring, testing, and recordkeeping requirements.

1.8 PART 9 RULES: MISCELLANEOUS PROVISIONS

The rules in Part 9 of the Michigan Air Pollution Control Rules can apply to any business, regardless of the type of air contaminant emitted or emission unit installed. According to R 336.1901, air contaminants cannot be emitted in quantities that could have an injurious effect on human health or safety or cause unreasonable interference with the comfortable enjoyment of life and property.

Businesses, upon request from the AQD, must prepare a malfunction abatement plan to prevent, detect, and correct malfunctions resulting in the emissions of air contaminants exceeding any applicable limitation (R 336.1911). When a business has a malfunction of a process device and/or control device resulting in the exceedance of an emission standard or limitation over a prescribed amount of time, it must be reported to the AQD (R 336.1912).

1.9 PART 10 RULES: INTERMITTENT TESTING AND SAMPLING

Part 10 of the Michigan Air Pollution Control Rules give the AQD authority to require sources to quantify their air emissions to verify compliance with the emission standards. The testing must be performed in accordance with established testing methodologies and approved by the AQD Technical Programs Unit staff prior to testing.

1.10 PART 11 RULES: CONTINUOUS EMISSION MONITORING

Large sources of air contaminants must operate continuous emission monitoring equipment to verify compliance with the applicable emission standards. The monitoring equipment is typically installed in the process device itself or in the stack.

1.11 PART 14 RULES: CLEAN CORPORATE CITIZEN PROGRAM

Michigan's Clean Corporate Citizen Program allows sources demonstrating environmental stewardship and a strong environmental ethic to receive public recognition and air quality permit processing benefits. For more information, call 800-662-9278 or go to **Michigan.gov/EGLEc3**.

1.12 MICHIGAN AIR EMISSIONS REPORTING SYSTEM

The federal Clean Air Act requires each state maintain an inventory of air pollution emissions for certain facilities and update this inventory every year. Michigan's emission inventory is the **Michigan Air Emissions Reporting System** (MAERS). The AQD maintains MAERS by requesting

certain facilities annually report their emissions. This information is used to track air pollution trends, determine the effectiveness of current air pollution control programs, serve as a basis for future-year projections of air quality, track source compliance, provide information for permit review, and calculate the emissions portion of the air quality fee.

Not every facility is required to report to MAERS. Facilities subject to fees, or that have opted-out of the ROP program, must report emissions. In addition, facilities with actual annual emissions greater than the following thresholds will be included in MAERS and will be notified to report emissions annually:

- Carbon monoxide (CO) - 100 tons per year
- Nitrogen oxides (NOx) - 40 tons per year
- Sulfur dioxide (SO2) - 40 tons per year
- Particulate matter (PM) - 25 tons per year
- Particulate matter (PM-10) - 15 tons per year
- Volatile organic compounds (VOC) - 10 tons per year

MAERS reports are due by March 15 each year. By the end of January, the AQD notifies facilities that must submit the MAERS report.

View the ***MAERS User Guide*** at **Michigan.gov/MAERS** for more information.

1.13 TAX EXEMPTION FOR AIR POLLUTION CONTROL

As per Article II, Chapter I, Part 59 (Air Pollution Control Facility; Tax Exemption) of Public Act 451 of 1994, hereinafter referred to as "Part 59," tax exemptions for air pollution control are available through an application separate from the Permit to Install application. Specific procedures must be followed to be granted tax relief and tax exemption certificates are terminated when equipment is removed.

Part 59 provides for the exemption of air pollution control facilities from sales, use, and property taxes (equipment installed prior to the effective date of Part 59 is eligible for tax exemption).

Applications for tax exemption for air pollution control facilities must be submitted to the **Michigan State Tax Commission (STC)** in triplicate on the "**Application for Air Pollution Control Tax Exemption Certificate**" forms. All applications must be submitted by June 15 and be administratively complete to ensure that final determinations are made by the end of the tax year. These forms can be obtained from the Michigan Department of Treasury, State Tax Commission, at **Michigan.gov/PropertyTax.**

The evaluation of an application and decision of what equipment meets the requirements of Part 59 is based on the descriptions in the Act.

1.14 FEDERAL AIR REGULATIONS

The USEPA promulgates federal rules and standards affecting a wide variety of sources of air contaminants, especially those operated by manufacturers. EGLE's AQD receives delegation from the USEPA to implement and enforce compliance with these federal regulations. Manufacturers should be aware of additional air quality regulations including Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAPs), Risk Management Plans, and the regulation of CFCs.

1.15 PREVENTION OF SIGNIFICANT DETERIORATION

The primary provisions of the Prevention of Significant Deterioration (PSD) program, as found in Michigan's Part 18 Rules, mirror the federal requirements in 40 CFR 52.21 and require new major stationary sources and major modifications at existing major sources be carefully reviewed prior to construction. The review is intended to ensure compliance with the national ambient air quality standards, the applicable PSD increment concentrations, and the requirement to apply best available control technologies on the project's emissions of air pollutants above significance. The review is required by the Clean Air Act and includes a requirement to undergo new source review (NSR) and obtain a permit before construction.

PSD applicability depends on a new source or a modification to an existing source resulting in emission increases above certain applicability thresholds. A "major stationary source" is any source type belonging to a specific list of source categories emitting or having the potential to emit 100 tons per year or more of any NSR pollutant, or any other source type which emits or has the potential to emit any NSR pollutant in amounts equal to or greater than 250 tons per year. A stationary source generally includes all pollutant-emitting activities which belong to the same industrial grouping, are located on contiguous or adjacent properties, and are under common control.

A major modification is a physical change or a change in the method of operation of an existing major stationary source. In determining if a specific project would become subject to the PSD program, the modification must be determined to result in both a significant emissions increase (by itself) and a significant net emissions increase (across the whole stationary source) of any NSR pollutant.

The basic goals of the PSD program are: (1) to ensure economic growth can continue while simultaneously preserving existing air quality (i.e., prevent degradation of an attainment area into a nonattainment area); and (2) to preserve and protect the air quality in areas of special natural recreational, scenic, or historic value, such as national parks and wilderness areas (i.e., Class I areas). Nonattainment areas are covered by **Michigan's Part 19 Rules**.

The PSD Program:

1. Changed the method of determining the baseline level of emissions from which changes are measured to determine if a significant or significant net emissions increase will occur.
2. Instituted applicability determinations by comparing projected future actual emissions against baseline actual emissions. Previously, applicability was determined on the increase in allowable emissions above baseline actual emissions.
3. Created a Plantwide Applicability Limit permitting regime, in which compliance with a single, plantwide emissions limit becomes the sole determiner of NSR applicability for future changes at the facility.

The method for determining baseline actual emissions is different depending on the source. This timeframe may be five years to ten years, the period over which a two-year average of actual annual emissions could be selected as the baseline from which emission changes are measured. Any consecutive 24-month period during the previous ten years can be selected by an applicant as the emissions baseline.

The actual to projected actual applicability test can be used to determine if a modification at an existing source will result in a significant emissions increase. To accomplish this, future emissions are projected based on anticipated business demand. Any emissions increases resulting from future production that would have, or could have, been accommodated without the modification do not count towards NSR applicability. The creation of the actual to projected actual applicability test does not eliminate the traditional actual to potential applicability test; it is an alternative test.

The Plantwide Applicability Limit (PAL) permit written into the reformed PSD regulations establish another alternative PSD applicability threshold to the actual to potential or actual to projected actual methods. The PSD PAL leaves almost all existing permit requirements in place and adds a new, facility-wide tons per year emissions limit for a single pollutant. This facility-wide pollutant-specific limit establishes the applicability threshold for PSD – if the PAL is not exceeded, NSR applicability is not triggered. The goal of the PAL is to internally motivate facilities to voluntarily reduce emissions to accommodate future increases rather than subject those increases to NSR.

For more information about the PSD reforms, you may refer to the "**PSD Workbook – A Practical Guide to Prevention of Significant Deterioration**."

For assistance in determining whether your proposed installation or modification of an emission unit or source will trigger the PSD requirements, contact the Environmental Assistance Center at 800-662-9278.

1.16 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The 1970 version of the federal Clean Air Act required the USEPA to set emission standards referred to as National Emission Standards for Hazardous Air Pollutants (NESHAP). From 1970 to 1990, NESHAPs were issued for only seven compounds: asbestos, beryllium, mercury, vinyl chloride, arsenic, radionuclides, and benzene.

Under Title III of the Clean Air Amendments of 1990, Congress wanted the USEPA to speed up the pace of regulation. Section 112 of the Clean Air Act Amendments calls for the development of NESHAPs to reduce the emissions of hazardous air pollutants (HAPs). The original list of HAPs contained 189 compounds; however, caprolactam and methyl ethyl ketone (MEK) have been removed from the list and the USEPA may consider other compounds to be added or removed. See Appendix 1-A for a listing of HAPs.

Implementation of Section 112 began with the identification of sources that are major contributors of the original list of HAPs. The USEPA has identified over 174 source categories of sources that emit HAPs and that should be regulated.

1.16.1 MAJOR AND AREA HAP SOURCES DEFINED

A "major HAP source" is a facility having the potential to emit more than 10 tons per year of any single HAP or 25 tons of all HAPs combined. An "area source" is one having the potential to emit less than 10 tons of any single HAP or 25 tons of all HAPs combined. NESHAPs have been promulgated that apply to major HAP sources and area sources as well.

1.16.2 REGULATING MAJOR AND AREA HAP SOURCES - MACT AND GACT

Section 112 of the federal Clean Air Act requires regulations be promulgated establishing emission standards (commonly referred to as NESHAPs) for each category of major sources and area sources of HAPs identified in the USEPA schedule of regulation promulgation. The standards for major sources of HAPs must require the maximum degree of emission reduction the USEPA determines to be achievable by each particular source category. This standard is referred to as the maximum achievable control technology, or MACT for short. MACT levels can be different for existing and new sources. The USEPA determines what kind of controls qualify as the "maximum control" for each category of HAP sources. For source categories with at least 30 sources nationwide, MACT must be no less stringent than the average emission rate achieved by the best performing 12 percent of existing sources. MACT ensures both new and existing major sources of toxic air pollution use the kind of technology which provides maximum control of HAPs on an ongoing basis. The terms NESHAP and MACT are often used interchangeably.

Area sources may require either MACT or Generally Available Control Technology (GACT). GACT are standards less stringent than MACT. Information about standards that have been promulgated for area sources can be found at **epa.gov/ttn/atw/area/arearules.html**.

1.16.3 SCHEDULE FOR COMPLIANCE WITH THE NESHAPS

New sources (i.e., sources commencing construction or reconstruction after proposal of the NESHAP) must comply with the standard immediately upon start-up with one exception.

Sources constructed or reconstructed after the NESHAP proposal, but before promulgation, must comply with the promulgated standard within three years of promulgation. Existing sources (i.e., sources in operation prior to the proposed standard) have three years from the promulgation date to comply with the NESHAP.

1.16.4 ADDITIONAL NESHAP INFORMATION

To obtain copies of the NESHAP standards as they appear in the Code of Federal Regulations (CFR), go to **ecfr.gov/current/title-40**. NESHAPs are contained in Part 63 of Title 40.

Outreach materials on some of the promulgated NESHAPs can be downloaded at **Michigan.gov/Air** (choose "Compliance")

1.16.5 COMPARISON OF FEDERAL AND MICHIGAN AIR TOXICS RULES

Michigan's air toxics rules take precedence over the federal Clean Air Act regulations where the rules provide for stricter control of toxic air pollution. The following table outlines the provisions of both Michigan's toxic air contaminant regulations and the federal Clean Air Act Amendment's hazardous air pollutant regulations.

Table 1.4 Comparison of Federal and State Air Toxic Regulations

Issue	Federal Clean Air Act Amendments	Michigan Air Toxics Rules
Applies to new or modified sources of air toxics?	Yes	Yes
Applies to existing sources of air toxics?	Yes	No
Which air toxics are regulated?	At present, 187 chemicals known as hazardous air pollutants or HAPs (the list is subject to change)	All substances which are harmful except for 41 specifically exempted compounds (see Appendix 1-B). These regulated contaminants are known as toxic air contaminants or TACs.
Effective date of regulations	Phased in between 1990 and 2000 (and beyond)	In effect now
Types of controls required	Maximum achievable controls	Best available controls and health-based screening levels

1.16.6 NESHAP FOR ASBESTOS

Businesses contemplating the demolition or renovation of any structure should be aware this activity may be regulated under the NESHAP for Asbestos. The purpose of this NESHAP is to minimize the release of asbestos fibers during renovation and demolition activities. The NESHAP applies to renovations of institutional, commercial, or industrial structures if the amount of regulated asbestos-containing material is 260 or more linear feet, 160 or more square feet, or 35 or more cubic feet. The NESHAP applies to all demolition activities at institutional, commercial, or industrial structures, regardless of whether the structures contain asbestos.

The NESHAP for Asbestos was promulgated on April 6, 1973, and revised in 1990.

Since the NESHAP for Asbestos was one of the early promulgated NESHAPs, the regulation is found in , not Part 63, of Title 40 of the Federal Code of Regulations.

The NESHAP for Asbestos has four requirements: notification, work practice standards, proper waste disposal, and training. A notification form describing the project must be postmarked or hand delivered at least 10 working days before beginning demolition or renovation activities enabling the regulatory agency to ensure all precautions are being taken to minimize asbestos emissions. The work practice standards require asbestos be adequately wetted and carefully lowered to the ground. For waste disposal, all asbestos-containing waste must be placed in leak-tight containers or leak-tight wrapping. These containers or wrapped materials must be properly labeled and taken to an appropriate waste disposal site as soon as is practical. Finally, the training requirement is met by having at least one trained supervisor present when asbestos is stripped, removed, disturbed, or handled.

For more detailed information about the NESHAP for Asbestos, contact the NESHAP Asbestos Coordinator at 517-256-0880. To obtain a copy of the ***"Understanding the Asbestos NESHAP"*** fact sheet visit **Michigan.gov/EGLEPublications**.

1.17 NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards (NSPS) are federal requirements applicable to over 75 categories of industrial emission units. The USEPA developed these standards to ensure that old sources of air pollution would be replaced with less polluting technology, thus having a net benefit to air quality.

Not only does the installation of certain new emission units after a specific date trigger applicability of the NSPS, but changes to your existing emission units could subject you to the standards. Changes are defined in terms of modifications and reconstruction. Modification is defined as "any physical or operational change to an existing emission unit which results in an increase in emissions to the atmosphere of any pollutant to which a standard applies." If the fixed capital cost of the changes you make to your emission unit is more than 50 percent of the fixed

capital costs required to construct a comparable emission unit, then your facility has been "reconstructed" under the NSPS definition. For example, if you replaced the dryer portion of an asphalt plant, you would need to compare the cost of the new dryer to the cost of an entirely new asphalt plant as defined in the NSPS for Hot Mix Asphalt Facilities to determine if your changes fall under the definition of reconstruction.

All of the NSPS are located in **Title 40**, **Part 60**, of the Code of Federal Regulations. Each regulation is identified in subparts of Part 60. The NSPS applies to emission units constructed, modified, or reconstructed after the effective date of the standard.

It is important to understand the definitions of an affected facility under NSPS before you install, modify, or reconstruct sources of air pollution so you will be able to comply with all of the pertinent emission limits, record keeping, reporting, and other operational requirements that may be included in the NSPS.

1.18 ACID RAIN REGULATIONS

Electric generating units (EGU) selling electricity to the grid and burning fossil fuel may be required to obtain and operate in compliance with a Phase II acid rain permit, pursuant to Title IV of the federal Clean Air Act. EGUs that have a nameplate capacity of less than 25 MW and burn a fuel with an annual average sulfur content of less than 0.05 percent are exempt from Title IV.

The AQD is the authority responsible for issuing Phase II acid rain permits in Michigan. EGUs that become subject to Title IV are required to submit an application to the AQD 24 months before the unit commences operation. Units which are exempt from the program must submit the exemption form (original and one copy) to the AQD. All acid rain forms should be sent to RE: Acid Rain Permit Application, EGLE-AQD, 301 E. Louis Glick Hwy, Jackson, MI 49201. One copy must also be sent to the USEPA. Application and exemption forms and their instructions are available from the USEPA Acid Forms Web site at **epa.gov/AirMarkets/acid-rain-permitting.**

Any operating stationary combustion source emitting sulfur dioxide (SO_2) but is not otherwise required to meet the mandatory SO_2 emissions limitations of Title IV is eligible to opt into the Acid Rain Program. Combustion sources are defined as fossil fuel-fired boilers, turbines, or internal combustion engines. The Opt-in Program offers a combustion source a financial incentive to voluntarily reduce its SO_2 emissions. By reducing emissions below its allowance allocation, an opt-in source will have unused allowances which it can sell in the SO_2 allowance market. Opting in will be profitable if the revenue from the sale of allowances exceeds the combined cost of the emissions reduction and the cost of participating in the Opt-in Program. Further information on the Opt-in Program is available on the USEPA Air Markets Web site **epa.gov/Airmarkets.**

All sources subject to the Title IV Acid Rain Program are also required to obtain a Renewable Operating Permit (see Chapter 1.2.2).

For further information about the **Acid Rain Program**, visit **Michigan.gov/Air** ("Permits")or call 800-662-9278.

1.19 MANAGING CHEMICAL RISK: ACCIDENTAL RELEASE/RISK MANAGEMENT PLAN

Companies of all sizes using certain listed chemicals must submit plans detailing how they will prevent accidental chemical releases from occurring. This compliance requirement is known as the **Accidental Release/Risk Management Program of the 1990 Clean Air Act Amendment's Section 112(r)**. The goal of this regulation is to communicate potential risks to the public and ensure facilities have implemented a baseline internal management structure, including safety and prevention and emergency response programs to reduce the possibility of an accidental release. The primary tool used to accomplish this goal is the Risk Management Plan (RMP). A facility must develop a RMP if they have regulated substances (comprised of toxic chemicals and flammables) identified under Section 112(r) at or above a specific threshold quantity set for each substance. Size of the company does not determine applicability; a business is required to complete an RMP if the type and quantity of chemicals used are listed as regulated substances under the rule.

There are three levels of compliance with Section 112(r) called "Programs." Facilities having a process that uses, stores, manufactures, processes, handles, or transports on-site a Section 112(r) regulated substance over the threshold quantity are required to conduct some level of accidental release "Program" planning. As stated previously, there are three Programs; Program 1 is the most lenient while Program 3 is the most stringent. The Programs are comprised of four major components:

1. A Hazard Assessment, including the modeling of a worst case and alternative accidental chemical release.
2. Establishment of a Management Program (i.e., who's in charge of the RMP).
3. A Prevention Program to minimize the potential occurrence of an accidental release.
4. An Emergency Response Program to protect public health and the environment.

Program 1, 2, or 3 applicability dictates which of these components a facility must comply with. Facilities subject to Section 112(r) must meet their Program compliance requirements by June 21, 1999, or at the time that a substance is first present at their facility.

For more information on risk management planning, or questions regarding the rule, additional resources and guidance documents for compliance can be downloaded from the USEPA emergency planning Web site at **epa.gov/emergency-response.**

1.20 OZONE DEPLETING SUBSTANCES

Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are inert, toxic chemicals used as refrigerants for air conditioning, home and commercial refrigeration, and in process cooling equipment that supports manufacturing. Scientists worldwide have concluded that CFCs and HCFCs deplete the ozone layer. As a result, the United States joined 160 nations in signing the Montreal Protocol, an international treaty designed to protect the ozone layer. In the United States, the Protocol is implemented by Title VI of the Clean Air Act (CAA) and Title 40, Part 82, of the Code of Federal Regulations. The regulations provided for the phase-out of CFC production by 1996, HCFC-22 production by 2020, and all other HCFCs by 2030. The regulations also put strict limitations on CFC/HCFC sales, their use in stationary and mobile sources, and their disposal.

The CAA prohibits individuals from knowingly venting CFCs, HCFCs, or any alternative refrigerant into the atmosphere while maintaining, servicing, repairing, or disposing of air conditioning or refrigeration equipment. Furthermore, only USEPA-certified technicians can service or dispose of refrigeration or air conditioning equipment (both stationary and mobile sources). The USEPA regional office must be notified that all equipment used in the recycling or recovery of refrigerants meets the standards. A list of approved certification programs and Air Conditioning and Refrigeration Institute (ARI)-rated recovery/recycle equipment is available from the Stratospheric Ozone Hotline at 800-296-1996. Owners of air conditioning and refrigeration equipment with more than 50 pounds of charge must keep records of the quantity of refrigerant added to their equipment during servicing and maintenance procedures. Any “substantial” leaks in equipment must be repaired within 30 days.

As the effects of ozone-depleting substance phase-outs begin to take hold, the development and usage of viable alternatives becomes increasingly important. In 1994, the USEPA established the significant new alternatives policy (SNAP) program to evaluate new alternatives for ozone-depleting substances. Alternatives that are rated “acceptable” by the SNAP Program can be implemented into processes as legal substitutes. The use of any substance not approved by the SNAP Program is illegal.

Persons with questions concerning CFC/HCFC regulations, the **SNAP Program**, and stratospheric ozone protection **spdcomment@epa.gov** or visit the USEPA, Stratospheric Protection Division Web site at **epa.gov/ozone**.

1.21 GREENHOUSE GAS (GHG) REGULATIONS

On June 3, 2010, the USEPA issued a final rule setting applicability thresholds for greenhouse gas (GHG) emissions, defining when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing sources. This rule is known as the "Tailoring Rule."

The Tailoring Rule primarily targets sources of combustion, but it may affect other sources modifying or applying for new Permits to Install (**PTIs**) and Renewable Operating Permits (**ROPs**). Sources with emissions of any of the following pollutants may be affected by the Tailoring Rule:

- carbon dioxide (CO_2)
- hydrofluorocarbons (HFCs)
- methane (CH_4)
- nitrous oxide (N_2O)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

Under the Tailoring Rule, PSD permitting requirements cover new construction projects emitting GHG emissions of at least 100,000 tons per year (tpy), even if they do not exceed the permitting thresholds for any other pollutant. Modifications at existing facilities that increase GHG emissions by at least 75,000 tpy will be subject to permitting requirements, even if they do not significantly increase emissions of any other pollutant.

Facilities that emit at least 100,000 tpy Carbon Dioxide equivalent (CO_2e) and 100 tons of GHGs on a mass basis will be subject to permitting under Title V of the Clean Air Act. In Michigan, these permits are known as Renewable Operating Permits (ROPs). Sources with large or multiple fuel burning devices (e.g. boilers, generators, ovens, and process heaters) and sources with large refrigeration units (e.g., warehouses, food processors) should review the GHG Permitting Guidance the AQD has developed to determine whether or not they will be affected by the Tailoring Rule. This guidance and more can be found at **Michigan.gov/Air**.

1.21.1 GREENHOUSE GAS REPORTING RULE

On December 29, 2009, the USEPA's Mandatory Reporting of Greenhouse Gases Rule (MRR) became effective. The MRR requires facilities subject to the rule to report their GHG emissions directly to the USEPA starting with their 2010 GHG emissions data.

Visit the USEPA's Greenhouse Gas Reporting Program at **epa.gov/ghgreporting** to determine if your facility is subject to the MRR reporting requirements. If you have questions, contact the USEPA MRR hotline at 877-GHG-1188 or **GHGMRR@epa.gov**.

APPENDIX 1-A: HAZARDOUS AIR POLLUTANTS (HAPS)

(Revised January 2022) This list may change. Check **epa.gov/haps/initial-list-hazardous-air-pollutants-modifications** for current listing.

CAS Number listed, followed by chemical name.

75070	Acetaldehyde
60355	Acetamide
75058	Acetonitrile
98862	Acetophenone
53963	2-Acetylaminofluorene
107028	Acrolein
79061	Acrylamide
79107	Acrylic acid
107131	Acrylonitrile
107051	Allyl chloride
92671	4-Aminobiphenyl
62533	Aniline
90040	o-Anisdine
1332214	Asbestos
71432	Benzene
92875	Benzidine
98077	Benzotrichloride
100447	Benzyl chloride
92524	Biphenyl
117817	Bis (2-ethylhexyl) phthalate (DEHP)
542881	Bis (chloromethyl) ether
75252	Bromoform
106945	1-bromopropane
106990	1,3-Butadiene
156627	Calcium cyanamide
133062	Captan
63252	Carbaryl
75150	Carbon disulfide
56235	Carbon tetrachloride
463581	Carbonyl sulfide
120809	Catechol
133904	Chloramben
57749	Chlordane
7782505	Chlorine
79118	Chloroacetic acid
532274	2-Chloroacetophenone
108907	Chlorobenzene
510156	Chlorobenzilate
67663	Chloroform
107302	Chloromethyl methyl ether
126998	Chloroprene
1319773	Cresols/Cresylic acid (isomers and mixtures)
95487	o-Cresol
108394	m-Cresol
106445	p-Cresol
98828	Cumene
94757	2,4-D, salts and esters
3547044	DDE
334883	Diazomethane
132649	Dibenzofurans
96128	1,2-Dibromo-3-chloropropane
84742	Dibutylphthalate
106467	1,4-Dichlorobenzene(p)
91941	3,3-ichlorobenzidene
111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)
542756	1,3-Dichloropropene
62737	Dichlorvos
111422	Diethanolamine
21697	N,N-Diethyl aniline (N,N-Dimethylaniline)
64675	Diethyl sulfate
119904	3,3-Dimethoxybenzidine
60117	Dimethyl aminoazobenzene
119937	3,3-Dimethyl benzidine
79447	Dimethyl carbarmoyl chloride
68122	Dimethyl formamide
57147	1,1 Dimethyl hydrazine
131113	Dimethyl phthalate
77781	Dimethyl sulfate
534521	4,6-Dintro-o-cresol, and salts
51285	2,4-Dinitrophenol
121142	2,4-Dinitrotoluene
123911	1,4-Dioxane (1,4-Diethyleneoxide)
122667	1,2-Diphenylhydrazine
106898	Epichlorohydin (1-Chloro-2,3-epozypropane)
106887	1,2-Epozybutane
140885	Ethyl acrylate
100414	Ethyl benzene
51796	Ethyl carbamate (Urethane)
75003	Ethyl chloride (Chloroethane)
106934	Ethylene dibromide) (Dibromoethane)
107062	Ethylene dichloride (1,2-Dichloroethane)
107211	Ethylene glycol
151564	Ethylene imine (Aziridine)
75218	Ethylene oxide
96457	Ethylene thiourea
75343	Ethylidene dichloride (1,1-Dichloroethane)
50000	Formaldehyde
76448	Heptachlor
118741	Hexachlorobenzene
87683	Hexachlorobutadiene
77474	Hexachlorocyclo pentadiene

67721	Hexachloroethane
822060	Hexamethylene-1,6-diisocyanate
680319	Hexamethyl phosphoramide
110543	Hexane
302012	Hydrazine
7647010	Hydrochloric acid
7664393	Hydrogen fluoride (hydrofluoric acid)
123319	Hydroquinone
78591	Isophorone
58899	Lindane (all isomers)
108316	Maleic anhydride
67561	Methanol
72435	Methozychlor
74839	Methyl bromide (Bromomethane)
74873	Methyl chloride (Chloromethane)
71556	Methyl chloroform (1,1,1-Trichloroethane)
60344	Methyl hydrazine
74884	Methyl iodide (Iodomethane)
108101	Methyl isobutyl ketone (Hexone)
624839	Methyl isocyanate
80626	Methyl methacrylate
1634044	Methyl tert butyl ether
101144	4,4-Methylene bis (2-chloroaniline)
75092	Methylene chloride (Dichloromethane)
101688	Methlene diphenyl diisocyanate (MDI)
101779	4,4'-methylenedianiline
91203	Naphtalene
98953	Nitrobenzene
92933	4-Nitrobiphenyl
100027	4-Nitrophenol
79469	2-Nitropropane
684935	N-Nitroso-N-methylurea
62759	N-Nitrosodimethylamine
59892	N-Nitrosomorpholine
56382	Parathion
82688	Pentachloronitro benzene (Quintobenzene)
87865	Pentachlorophenol
108952	Phenol
106503	p-Phenylenediamine
75445	Phosgene
7803512	Phosphine
7723140	Phosphorus
85449	Phthalic anhydride
1336363	Polycholrinated biphenyls (Aroclors)
1120714	1,3-Propane sultone
57578	beta-Propiolactone
123386	Propionaldehyde
114261	Propoxur (Baygon)
75569	Propylene oxide
78875	Propylene dichloride (1,2-Dichloropropane)
75558	1,2-Propylenimine (2-Methyl aziridine)
91225	Quinoline
106514	Quinone
100425	Styrene
96093	Styrene oxide
1746016	2,3,7,8-Tetrachlorodibenzo p-dioxin
79345	1,1,2,2-Tetrachloroethane
127184	Tetrachloroethylene (Perchloroethylene)
7550450	Titanium tetrachloride
108883	Toluene
95807	2,4-Toluene diamine
584849	2,4-Toluene diisocyanate
95534	o-Toluidine
8001352	Toxaphene (chlorinated camphene)
120821	1,2,4-Trichlorobenzene
79005	1,1,2-Trichloroethane
79016	Trichloroethylene
95954	2,4,5-Trichlorophenol
88062	2,4,6-Trichlorophenol
121448	Triethylamine
1582098	Trifluralin
540841	2,2,4-Trimethylpentane
108054	Vinyl acetate
593602	Vinyl bromide
75014	Vinyl chloride
75354	Vinylidene chloride (1,1 Dichloroethylene)
1330207	Xylenes (isomers and mixtures)
95476	o-Xylenes
108383	m-Xylenes
106423	p-Xylenes

COMPOUNDS

- Antimony compounds
- Arsenic compounds (inorganic including arsine)
- Beryllium compounds
- Cadmium compounds
- Chromium compounds
- Cobalt compounds
- Coke oven emissions
- Cyanide compounds
- Fine mineral fibers
- Glycol ethers*
- Lead compounds
- Manganese compounds
- Mercury compounds
- Nickel compounds
- Polycyclic organic matter
- Radionuclides (including radon)
- Selenium compounds

*Note: Ethylene glycol mono-butyl ether (EGBE) was removed from the HAP list in December 2004. Methyl ethyl ketone (MEK, 2-Butanone) was removed from the HAP list in December 2005.

APPENDIX 1-B: LIST OF COMPOUNDS EXCLUDED FROM THE DEFINITION OF A TOXIC AIR CONTAMINANT

- Acetylene
- Aluminum metal dust
- Aluminum oxide (nonfibrous forms)
- Ammonium sulfate
- Argon
- Calcium carbonate
- Calcium hydroxide
- Calcium oxide
- Calcium silicate
- Calcium sulfate
- Carbon dioxide
- Carbon monoxide
- Cellulose
- Coal dust
- Crystalline silica emissions from processes specified in Rule 120(f)(xi)
- Emery
- Ethane
- Graphite (synthetic)
- Grain dust
- Helium
- Hydrogen
- Iron oxide
- Lead
- Liquefied petroleum gas (LPG)
- Methane
- Neon
- Nitrogen
- Nitrogen oxide
- Nuisance particulates
- Oxygen
- Ozone
- Perlite
- Portland cement
- Propane
- Silicon
- Starch
- Sucrose
- Sulfur dioxide
- Vegetable oil mist
- Water vapor
- Zinc metal dust

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common air regulations topics

Air Emissions Reporting
Michigan.gov/MAERS | InfoMAERS@michigan.gov | 517-285-6700

- Michigan Air Emissions Reporting System (MAERS) Workbook

Air Resources/Guidance – Publications can be found at Michigan.gov/EGLEPublications

- Air Quality 101 – A webinar series
- Potential to Emit
- Permits to Install (PTI) / New Source Review (NSR)
  - A Deep Dive into Air Permitting – A webinar series
  - Permit to Install Guidebook – A Practical Guide to Completing an Air Permit Application
- Renewable Operating Permits (ROP) / Title V
  - ROP Webinar Series
  - Acid Rain Permits (Title IV)
  - Cross-State Air Pollution Rule (CSAPR)
  - ROP Manual
  - Life After ROP – Renewable Operating Permit Reporting and Revisions
- PSD Workbook – A Practical Guide to Prevention of Significant Deterioration

Air Quality Regulations – Federal
U.S. Environmental Protection Agency, Office of Air and Radiation
EPA.gov/environmental-topics/air-topics

Air Quality Regulations – State
Michigan.gov/Air | EGLE Clean Air Assistance Program: 800-662-9278

- Environmental Consultant Assistance
- Compliance Resources
  - NESHAPs
  - NSPS
  - Source category guidance
- Open Burning Guidance

Michigan Guide to
Environmental Regulations

Chapter 2

WASTE MATERIALS MANAGEMENT

CHAPTER 2: WASTE MATERIALS MANAGEMENT

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

Everyone generates waste on a daily basis and is subject to the state of Michigan's waste regulations. When waste is improperly handled and disposed (e.g., 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.

As you review this chapter, consider referencing Appendix B, which provides definitions for the various terms that appear in bold throughout the chapter. Also note that in some instances, multiple agencies use the same term to describe a different regulated group. Such terms are followed by a dash and an acronym for the defining agency or regulation. For example, the U.S. Department of Transportation (US DOT), the Michigan Fire Prevention Code, Public Act 207 of 1941, as amended (Act 207), and the Michigan Hazardous Materials Transportation Act, Public Act 368 of 1998 (Act 368) all have differing definitions for the term "hazardous material." Therefore, the US DOT, Act 207, and Act 368 definitions of hazardous material will appear as "**hazardous material-USDOT**," "**hazardous material-Act 207**," and "**hazardous material-EGLE**," respectively.

AGENCIES AND THEIR LAWS AND RULES

Several different agencies are involved with overseeing proper waste management. State agencies include the Michigan Department of Environment, Great Lakes, and Energy (EGLE), the Michigan Department of Licensing and Regulatory Affairs (LARA), the Michigan Department of Agriculture and Rural Development (MDARD), and the Michigan State Police (MSP). Federal agencies include the U.S. Environmental Protection Agency (U.S. EPA), U.S. DOT, U.S. Nuclear Regulatory Commission (US NRC), and the U.S. Drug Enforcement Administration (U.S. DEA). In addition, local entities such as solid waste management authorities, publicly owned treatment works authorities, local fire departments, and county health departments may have jurisdiction over proper waste management under local codes.

The following identifies Michigan's common waste regulations (laws and rules implementing the law) that are overseen by EGLE's Materials Management Division (MMD):

- Solid waste regulations under (Solid Waste Management) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451), the Part 115 administrative rules and Part 89 (Littering) of Act 451. (Summarized in Chapter 2.2)
- Scrap tire regulations under Part 169 (Scrap Tires) of Act 451. (Summarized in Chapter 2.2)
- Liquid industrial by-products regulations under Part 121 (Liquid Industrial By-Products) 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)
- Transportation of **hazardous materials-EGLE** requirements, which includes both liquid industrial by-products and hazardous waste, under the Hazardous Materials Transportation Act (Public Act 138 of 1998). (Summarized in Chapter 2.3 and 2.4 and Chapter 4)
- Used oil recycling regulation under Part 167 (Used Oil Recycling) of Act 451. (Summarized in Chapter 2.7.1)
- Disposal of batteries regulations under Part 171 (Battery Disposal) of Act 451. (Summarized in Chapters 2.7.3 and 2.7.4)
- Consumer and small electronics from business with ten or less employees under Part 173 (Electronics) of Act 451. (Summarized in Chapter 2.7.13)
- Recycling reporting under Part 175 (Recycling Reporting) of Act 451. (Summarized in Chapter 2.1.2.j)
- 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)
- 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)

The following are 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 (CFR) (40 CFR 260-279).
- Federal coal combustion residuals regulations implementing the federal RCRA are contained in Title 40, Part 257 (40 CFR 257).
- Transportation regulations for **hazardous materials-USDOT** overseen by US DOT and MSP are contained in 49 CFR Parts 100 to 199. (Summarized in Chapter 4)

- Polychlorinated biphenyls (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). (Summarized in Chapters 4.5 and 6.4.3)
- Radioactive waste regulations are overseen by the US NRC. (Summarized in Chapter 10)
- Controlled substance regulations are overseen by the U.S. DEAUS DEA.
- Federal wastewater regulations implementing the federal Clean Water Act. EGLE's Water Resource Division regulates wastewater under Part 31 (Water Resource Protection) of Act 451 and the Part 22 administrative rules. (Summarized in Chapter 3)

2.1 WASTE REDUCTION, RECYCLING, AND DIVERTED WASTE

Different terms are often used to describe waste reduction practices. "Waste minimization" is a term found in the federal Resource Conservation and Recovery Act (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 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 sign their waste manifests for shipping hazardous waste, they must certify that:

- As a **small quantity generator**, they have made a good faith effort to minimize their waste generation and selected the best waste management method available that they could afford.
- 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 waste.

No matter what waste minimization term is used, you need to know what types of waste and how much waste is being generated in order to establish a waste program focused on managing materials, instead of just sending unwanted materials for disposal. You need to determine what waste regulations apply to the materials and the options for reuse, recycling, or disposal. Community planners and developers should apply these concepts when evaluating community redevelopment opportunities, blight removal, and disaster response. Sound planning that involves a waste survey will help reduce costs and ensure worker, community, and environmental safety by ensuring materials are managed properly and timely. Resources to help in performing waste surveys and materials management planning include:

- Chapter 2.4.1 and 2.4.2 regarding waste determinations, and Chapter 12 for pollution prevention planning and energy savings tips.
- EGLE's Waste Webinar Series found at **Michigan.gov/EGLEEvents.**
- EGLE's Integrated Assessment Program offers free, confidential, on-site, one-on-one assistance to help businesses and communities meet sustainability and pollution prevention goals, increase efficiencies, reduce cost, conserve energy and water, and eliminate or minimize waste through materials management. Sign up for a free assessment and learn more at **Michigan.gov/P2IntegratedAssessment**.
- US EPA guidance and tools for identifying hazardous waste minimization and pollution prevention practices, like US EPA's P2 Resource Exchange, Safer Choice Program, and the pollution prevention resources at **epa.gov/p2**.
- Tools like the Recycled Materials Market Directory available at **Michigan.gov/RMMD** and the Michigan Materials Marketplace at **Michigan.MaterialsMarketplace.org** that help businesses and communities find commercial recycling options and develop and scale new reuse and recycling market opportunities.
- Northeast Michigan Council of Governments' report on Recycling in Michigan, Successful Recycling Programs, Best Practices, and Diversion Potential.
- West Michigan Sustainable Business Forum's report on the Economic Impact Potential and Characterization of Municipal Solid Waste in Michigan.
- The Michigan Recycling Economic Impact and Recycled Commodities Market Assessment Report.
- US EPA's On the Road to Reuse: Residential Demolition Bid Specification Development Tool for assisting communities in developing bids for redevelopment.
- Michigan State Police's Local Disaster Debris Management Planning Handbook.

2.1.1 IDENTIFYING WASTES AND WASTE REDUCTION OPPORTUNITIES

Whether you are a manufacturer, service provider, non-profit, university, hospital, or municipality, waste reduction and recycling activities can pay off with reduced costs and environmental benefits. To get started, conduct a waste survey to identify the types and quantities of waste generated at your site. After identifying and inventorying your waste, evaluate what measures you can institute to reduce the volume and/or toxicity. Performing a waste survey will also help to determine waste streams that may be subject to hazardous waste regulation (see Chapter 2.4). When conducting a waste survey:

- Tour the whole site and ask employees questions about work processes and the waste generated. Identify what is regulated as a hazardous waste, liquid industrial by-product, solid waste, or other waste type and how much waste is generated. Ask for suggestions about how waste could be reduced as a first option and recycled as a second option. Consider all wastes that are being generated from the different areas across the site. Look both inside and outside, including drains and sewers that may collect leaks. Look at discontinued operations that may have waste within them and equipment requiring disposal. Look at production, office, and maintenance activities. Review product storage areas and institute measures to prevent excess inventories from expiring. When materials are discontinued, ensure existing inventories are used before the replacement materials are made available, and make sure you know how the replacement product is subject to regulation when discarded before purchasing the new product. The product may be inexpensive, but disposal of any unwanted materials may not be. Institute procedures to routinely purge unwanted materials and equipment from inventory to reduce the likelihood of having a single month where your site generates larger volumes of hazardous waste, potentially subjecting your site to additional regulations, higher fees, and more reporting.
- Trace all chemical purchases for each step of every process or activity occurring at your site. Consider whether materials can be substituted to generate less or no hazardous waste.
- Identify where in-house recovery and reuse of hazardous and non-hazardous materials is possible. Chapter 2.4 provides details about on-site recycling for some materials. For questions about the regulations and any waste permitting or licensing requirements for recycling, contact the local EGLE District Office, Hazardous or Solid Waste Program.
- Also, check with EGLE's District Office, Air Quality Division (AQD) staff if you will install equipment to recycle that may generate an air contaminant to see if an air quality permit is required. When applying these principles to community redevelopment, be sure to consider the notifications required to address asbestos exposure concerns. (See Chapter 1.16.6)
- Observe to see if employees are creating more hazardous waste by mixing other waste with known hazardous waste. For example, your site may be able to 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 must be disposed because it has expired.

Once you know where the wastes are being generated, you may be able to reduce disposal costs by implementing waste reuse, reduction, and recycling programs. Along with saving money on disposal, you might save money by purchasing less material and even earn money by selling collected materials. You need to have both management and staff support to make these programs work. So, engage employees at all levels in the process and report the benefits back to everyone to show the successes, in both waste reductions, reuse increases, cost savings, etc. Waste reduction involves implementing activities that result in less waste being generated. These activities may include any of 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 do not 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.
- Purchase raw materials that contain post-consumer recycled materials to complete the cycle.

See the US EPA’s Safer Choice program for finding products that perform and contain ingredients that are safer for human health and the environment. Safer Choice is an EPA Pollution Prevention (P2) program, which includes practices that reduce, eliminate, or prevent pollution at its source, such as using safer ingredients in products.

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 can be 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.

If you have unwanted materials that could be used by another party, consider using the Michigan Materials Marketplace at **Michigan.MaterialsMarketplace.org** or the US EPA's Comprehensive Procurement Guideline Program and Directory to find others seeking the materials you no longer need. Check with your broker, search the Michigan Recycled Materials Market Directory at **Michigan.gov/RMMD,** or contact your county recycling contact listed at **Michigan.gov/EGLEHHW** to find out what materials are accepted in your area, 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 if the individual broker or program does not handle the type or volume of material you have.

For information on recycling funding, see the Guide to Operational and Funding Options for Municipal Recycling Programs, Guide to Use of Special Assessments to Fund Recycling Services and Facilities, the Delta Institute Municipal Waste Procurement Tools, and contact your EGLE recycling specialist. A list of the recycling specialists is available at **Michigan.gov/EGLERecycling**.

Michigan manufacturers and service providers deliver the goods and services that make Michigan's economy vibrant. They also hold the power to purchase products that can be recycled and to purchase recycled materials. Doing so not only conserves natural resources by reducing the need for virgin materials, but also lengthens the life of existing landfills, reduces pollution, saves energy, and saves money if implemented properly. While it takes energy to transport and recycle materials, the energy put into recycling can be less than that needed to obtain and process virgin materials. Recycling supports a "loop" that results in extracted natural resources remaining utilized instead of being landfilled.

Commonly recycled materials include household electronics (including computers, cell phones, and televisions), plastic, glass, paper (including office paper and corrugated cardboard), scrap metal, wood pallets, and other wood materials as described in Chapter 2.1.2.a.

Help close the loop on recycling by finding manufacturers and suppliers of products that contain recovered materials and by searching for the products that you need at **epa.gov/smm/comprehensive-procurement-guideline-cpg-program#product.**

2.1.2 SOLID WASTE EXCLUSIONS AND EXEMPTIONS

Solid waste recycling is regulated under Part 115 of Act 451 and the Part 115 administrative rules. Only material specifically defined as "recyclable material" is excluded from the waste regulations when recycled in accordance with the rules. Some solid waste is also not well suited for landfill disposal and can be managed as "diverted waste" if collected, managed in accordance with the rules, and diverted to an environmentally preferred management method. Whether collected for recycling or diversion, the collected materials cannot be speculatively accumulated. This means that at least 75 percent of the incoming materials must be sent for recycling or to the environmentally preferred management method within a year. For questions about recycling and/or diverting solid waste, contact your local EGLE District Office, Solid Waste Program staff.

2.1.2.a Recyclable Materials

Recyclable materials are specifically defined in the law and include glass, paper, plastic, metal (bits and pieces), untreated and uncoated wood, textiles, yard clippings, and other materials specifically approved by EGLE. Recyclable materials are not subject to solid waste regulation when:

- site, source separated at the generating site,
- at least 90% free of other solid waste,
- not speculatively accumulated at a secondary site, and
- recycled within 1 year.

Materials are accumulated speculatively if less than 75 percent of the recyclable materials are recycled into marketable raw materials, marketable new products, or transferred to a different site for recycling within one year. If site, source separated recyclable materials are speculatively accumulated at a location other than the generating site, the activity is subject to the solid waste regulation, requires a solid waste permit and license, and the site must be designated as a disposal area in the county's solid waste plan. In addition to any solid waste regulations that apply to collected materials, there may be additional requirements under other EGLE regulations. For example, scrap metal bins or roll-off boxes must be covered to prevent contaminated stormwater runoff under water regulations in certain situations. Some low hazard materials, if approved by EGLE, can be accumulated for up to 3 years at the site of generation without being considered speculatively accumulated. See Chapter 2.1.2.g for more information on low hazard industrial waste.

Additional materials may be specified as "recyclable materials" if approved by EGLE. Recyclable materials approved by EGLE include the following, when processed as specified under the approval:

- Concrete Grinding Slurry
- Scrap Wood
- Ethanol Syrup
- Fish Waste Exemption
- Gypsum Drywall
- Inert Lead Painted Debris
- Manure, Paunch, and Pen Waste
- On Farm Anaerobic Digestion
- Inert Tire Materials

More details regarding the management standards that must be met for recyclable materials approved by the Director are on MMD's "Exemptions and Guidance" web page at **Michigan.gov/EGLEWaste**, under "Solid Waste."

2.1.2.b Community Recycling

When recyclable materials are collected and recycled into new products, they become a valuable commodity. Recycling helps grow our economy while preserving our natural resources and the environment. For information about funding and operating a municipal recycling program, please see the following resources and contact your EGLE recycling specialist with questions:

- Guide to Operational and Funding Options for Municipal Residential Recycling Programs
- Guide to Use of Special Assessments to Fund Recycling Services and Facilities
- Delta Institute Municipal Waste Procurement Tools
- "Grants" at **Michigan.gov/EGLERecycling**

For information about recycling in schools, please see the Guide to Starting a School Recycling Program and contact your EGLE recycling specialist for help,

Establishing a recycling program involves more than just providing a recycle bin and collecting the materials offered. Successful recycling programs include an education component because recycling is not as simple as searching for a recycling symbol on a container. Many packages wear the "recycle" symbol but require special processing that is not available in some areas. Before placing an item in a recycle bin, recognize the material needs to be clean and free of residues. Recyclers rely on clean, quality materials for use in manufacturing. If the materials are not clean enough, they are just taking a long trip to the landfill. People also need to know that materials like medical waste, used and unused needles, and personal protective equipment used to prevent the spread of viruses should never be placed in a recycle bin as they can spread disease.

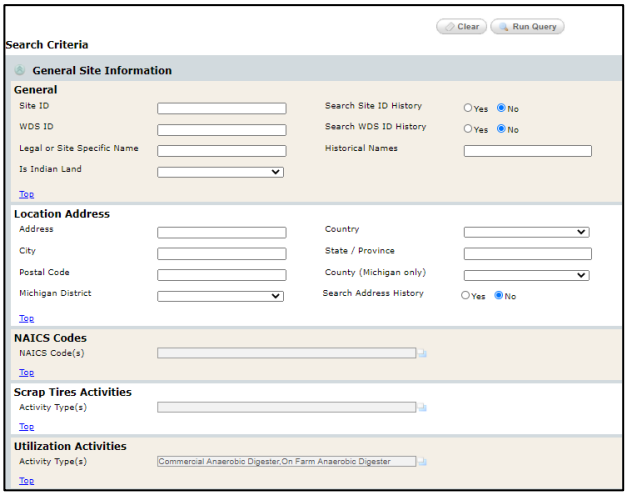
For more information on establishing and/or expanding a recycling program, view the Recycling 101 Guide, our EGLE toolkit and resources at **RecyclingRaccoons.org**, **Michigan.gov/EGLERecycling**, and contact your EGLE recycling specialist for help.

2.1.2.c Organic Wastes

Nationally, organic waste makes up the largest waste stream currently being disposed in municipal solid waste landfills. Organic waste consists of the following materials, which are specifically defined under Part 115 of Act 451:

- Yard clippings (see Section 11506(124)) – Yard clippings include leaves, grass clippings, vegetable or other garden debris, shrubbery, or brush or tree trimmings, less than 4 feet in length and 2 inches in diameter, that can be converted to compost humus. Yard clippings do not include stumps, agricultural wastes, animal waste, roots, sewage sludge, or garbage.

- Garbage (see Section 11503(14)) – Garbage includes rejected food wastes including waste accumulation of animal, fruit, or vegetable matter used or intended for food or that results from the preparation, use, cooking, dealing in, or storing of meat, fish, fowl, fruit, or vegetable matter.
- Wood (see Section 11503(14)) – Wood includes trees, branches, bark, lumber, pallets, wood chips, sawdust, or other wood or wood product. Wood does not include treated wood (e.g., creosote, pentachlorophenol, or chrome copper arsenate), wood made with glue, resins or fillers (e.g., plywood, particle board, pressed board, oriented strand board, fiberboard, resonated wood), painted wood or painted wood products, or any wood or wood products that have been contaminated during manufacture or use.
- Food processing residuals (see Section 11503(15)) – Food processing residuals include:
  - Residuals of fruits, vegetables, aquatic plants, or field crops.
  - Unusable parts of fruits, vegetables, aquatic plants, or field crops from processing.
  - Unusable food products which do not meet size, quality, or other product specifications and which were intended for human or animal consumption.



Yard clippings are specifically prohibited from being landfilled unless they are diseased, infested, or are an invasive species collected as part of a control program. In Michigan, most yard clippings are composted at composting facilities operated in accordance with Section 11521 of **Part 115**. To locate registered composting facilities in Michigan or to find more information on composting regulations, go to **Michigan.gov/EGLECompost**.

Yard clippings, organic recyclable materials like paper and wood, and source separated "garbage" as defined above may also be recycled at an anaerobic digester, a gasification plant, or composting site (see Section 11506(6)). To locate a registered compost site that accepts source separated food waste, go to the List of Registered Composter Facilities at **Michigan.gov/EGLECompost** and see the facilities listed in bold. To locate anaerobic digesters in Michigan, go to the Waste Data System at **EGLE.State.MI.US/WDSPI.**

Food processing residuals and "garbage" as defined above, may also be fed to animals and/or land applied consistent with the Right to Farm Act overseen by the Michigan Department of Agriculture and Rural Development. Food use activities that meet the MDARD Right to Farm Act requirements are exempt from solid waste regulation. Find more information on food waste recovery at **Michigan.gov/FoodWaste** and the Right to Farm Act at **Michigan.gov/MDARD.**

For questions about organics recycling, including whether an activity is exempted from solid waste

regulation or requires a solid waste permit, license, or registration, contact your EGLE District Office, Solid Waste Program staff. To help residents compost at home, consider sharing EGLE's Home Composting Guide for Residents.

2.1.2.d Inert Materials

Section 11504 of Part 115 of Act 451 defines specific materials as inert materials. Inert materials are not a waste when managed as specified under the law. Inert materials and their conditional exclusion from the waste regulations include the following materials when managed as specified:

- Rock
- Trees, stumps, or other land clearing debris if the following conditions are met:
    - The debris is buried on the site of origin or another site, with the approval of the owner of the site.
    - The debris is not buried in a wetland or floodplain.
    - The debris is placed at least 3 feet above the groundwater table as observed at the time of placement.
    - The placement of the debris does not violate federal, state, or local law or create a nuisance.
- Uncontaminated excavated soil or dredged sediment. Excavated soil or dredged sediment is considered uncontaminated if it does not contain more than de minimis amounts of solid waste and one of the following applies:
    - The soil or sediment is not contaminated by a hazardous substance as a result of human activity. Soil or sediment that naturally contains elevated levels of hazardous substances above unrestricted residential or any other Part 201 generic soil cleanup criteria is not considered contaminated for purposes of being inert. A soil or sediment analysis is not required under this subparagraph if, based on past land use, there is no reason to believe that the soil or sediment is contaminated.
    - For any hazardous substance that could be expected to be present as a result of past land use and human activity, the soil or sediment does not exceed the background concentration, as that term is defined in Part 201.
    - For any hazardous substance that could reasonably be expected to be present as a result of past land use and human activity, the soil or sediment falls below Part 201 generic residential soil direct contact cleanup criteria and hazardous substances in leachate from the soil or sediment, using, at the option of the generator, U.S. EPA method 1311, 1312, or any other leaching protocol approved by the department, fall below Part 201 generic residential health based groundwater drinking water values or criteria, and the soil or sediment would not cause a violation of any surface water quality standard established under Part 31 at the area of placement, disposal, or use.

For more information on handling dredge materials, see the guide for Managing Dredge Materials.

- Excavated soil from a site of environmental contamination, corrective action, or response activity if the soil is not a listed hazardous waste under Part 111 and if hazardous substances in the soil do not exceed generic soil cleanup criteria for unrestricted residential use as defined in Part 201 or background concentration as defined in Part 201, as applicable.
- Portland cement clinker produced by a cement kiln using wood, fossil fuels, or solid waste as a fuel or feedstock, but not including cement kiln dust generated in the process.
- Asphalt pavement or concrete pavement that has been removed from a public right-of-way, has been stockpiled or crushed for reuse as aggregate material, and does not include exposed reinforcement bars.
- Cuttings, drilling materials, and fluids used to drill or complete a well installed pursuant to Part 127 of the public health code, 1978 PA 368, MCL 333.12701 to 333.12771, if the location of the well is not a site of contamination under Part 201 of Act 451.
- Any material determined by the department under section 11553(5) or (6) to be an inert material, either for general use or for a particular use, including scrap tires as specified in the Designation of Inertness #17-I-001.

2.1.2.e Beneficial Use By-Products

In September 2014, Part 115 was amended to establish certain materials as being eligible for use as "beneficial use by-product" when managed in accordance with one or more of five beneficial use options added to the statute under Sections 11502(8), 11551, 11551a, 11552, and 11553. The Part 115 beneficial use by-products designated in the statute include:

- **Cement Kiln Dust/Lime Kiln Dust** - Particulate matter collected in air emission control devices serving Portland cement kilns and lime kilns.
- **Coal Bottom or Wood Ash** - Ash particles from combustion of coal or any type of ash or slag resulting from wood burning.
- **Coal or Wood Ash** - Material recovered from an air pollution control system or non-combusted residue from combustion of coal, wood, or both.
- **Dewatered Concrete Grinding Sludge** - Sludge collected from grinding concrete when an agency builds or repairs a public roadway.
- **Flue Gas Desulfurization Material** - Material recovered from air pollution control systems that capture sulfur dioxide during wood, coal, or fossil fuel combustion including synthetic gypsum.
- **Foundry Sand** - Silica sand used in metal casting processes from ferrous or nonferrous foundries.

- **Lime Softening Residuals** - Material recovered from the treatment and conditioning of water for domestic use or community water supply.
- **Mixed Wood Ash** - Material recovered from air pollution control systems or non-combusted residue from combustion of wood, scrap wood, railroad ties, and tires.
- **Pulp and Paper Mill Ash** - Non-combusted residue remaining after combustion of coal, wood/scrap wood, pulp and paper mill material, biomass pellets, railroad ties, and tires.
- **Pulp and Paper Mill Material** - Materials generated at pulp and paper mills including wastewater treatment sludge, rejects from screens, cleaners, and mills, bark, wood fiber, chips, scrap paper, and causticizing residues.
- **Soils Washed or Removed from Sugar Beets**
- **Spent Media from Sandblasting** - Spent media from sandblasting newly manufactured, unpainted steel with uncontaminated sand.
- **Stamp Sands** - Finely grained crushed rock resulting from mining, milling, or smelting of copper ore, including native substances contained within the crushed rock and any ancillary material associated with the crushed rock.

The five use options for the beneficial use by-product materials listed above include:

- **Beneficial Use 1** - Use of the material as aggregate, road material, or building material if it will be bonded or encapsulated by cement, limes, or asphalt.
- **Beneficial Use 2** - Use of the material as construction fill, road base, soil stabilizer, or road shoulder material.
- **Beneficial Use 3** - Use of the material as a fertilizer, soil conditioner under Part 85, or a liming material under 1955 PA 162.
- **Beneficial Use 4** - Use of the material to stabilize, neutralize, or treat solid waste, wastewater, or hazardous substances, or to serve as a landfill construction material.
- **Beneficial Use 5** - Use of the material as a component of a manufactured soil.

All beneficial use options are not available for all the beneficial use by-products. For help determining the beneficial use options for each material, consider reviewing the following resources found on EGLE's Solid Waste Program, Exemptions and Guidance web page found at **Michigan.gov/EGLEWaste**, after selecting the "Solid Waste" tab on the left, listed under "Information."

- EGLE Beneficial Use Matrix
- EGLE Beneficial Use Options Condition Summaries 1, 2, 3, 4, and 5
- EGLE Beneficial Use Frequently Asked Questions

2.1.2.f Petitions to Classify Solid Waste

For solid waste not otherwise excluded from regulation by statute or rule, a waste generator may petition EGLE under Rule 118a of the Part 115 rules to designate a material:

- a beneficial use by-product for beneficial use options 1, 2, 4, or 5.
- an inert material.
- a source separated material.
- a site separated material.
- a low-hazard industrial waste.
- a recycled agricultural or silvicultural material (see Part 115 Rules, Rule 111).
- an inert material appropriate for specific reuse (see Part 115 Rules, Rule 117).
- a compostable material (see Part 115 Rules, Rule 121).

When seeking to classify a waste, a petitioner must submit the information specified under Rule 118a to EGLE for review and approval. Petitions must include information to verify the character and composition of the waste. Inertness often relies upon verification that the material is at or below the Part 201 residential generic criteria for any parameters of concern. As such, the Part 201, Table 1, "Groundwater: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk Based Screening Levels" and Table 2, "Soil: Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels" are key to any petition for classification.

2.1.2.g Low-Hazard Industrial Waste

If a material is not eligible for reclassification for use, it may be eligible for classification as a low-hazard industrial waste pursuant to Part 115, Section 11553(7), which allows the generator to:

- store the waste at the site of generation for up to 3 years pursuant to Rule 105(l),
- store the waste in a non-contained waste pile under Rule 129, and
- dispose of the material in a low-hazard industrial waste landfill without performing any testing.

A material can be reclassified to a low-hazard industrial waste if hazardous substances in representative samples of the material, using US EPA method 1311, 1312, or any other EGLE approved method that more accurately simulates mobility, do not leach above the higher of the following:

- One-tenth the hazardous waste toxicity characteristic threshold as set forth in rules promulgated under Part 111.
- Ten times the generic residential groundwater drinking water cleanup criteria as set forth in rules promulgated under Part 201.

The waste must be at or below the threshold when tested in accordance with Part 115, Rule 302(2)(a) and receive EGLE approval to be managed as a low-hazard industrial waste under the solid waste regulations.

2.1.2.h Diverted Waste

Part 115 was amended to remove regulatory barriers to the collection of materials not well-suited to traditional landfill disposal. Section 11521b was added to establish waste diversion center operating requirements that allow for the collection of source separated waste off-site. These provisions only apply to solid waste that can lawfully be disposed in a licensed municipal solid waste landfill or municipal solid waste incinerator if the collected waste is being diverted to an environmentally preferred management method. Prior to the waste diversion amendment, all household hazardous waste collections were subject to the Part 115 solid waste transfer facility permitting, licensing, and operating requirements, as well as the county's solid waste planning requirements.

Some of the primary requirements for operating a waste diversion center include ensuring that the diverted waste is:

- collected safely and lawfully by personnel knowledgeable about safe management of the material.
- collected at a secure location protected from weather, fire, physical damage, and vandals.
- not processed except to the extent necessary for safe and efficient transport.
- managed to prevent release to the environment.
- not stored for more than 1 year.
- documented (waste types, volumes, and disposition) for at least 3 years.

Diverted waste examples include pharmaceuticals, electronics, batteries, light bulbs, pesticides, fertilizers, thermostats, mercury switches, mercury bearing thermometers, devices containing elemental mercury, household sharps, corrosive cleansers, oils, solvents, paints, etc. that can be readily separated from solid waste for diversion to an environmentally preferred management method.

Diverted waste is:

- ✓ generated by a household, business, or governmental entity and can be lawfully disposed in a licensed sanitary landfill or municipal solid waste incinerator.
- ✓ separated from other waste by the waste generator.
- ✓ commonly collected at community household hazardous waste collections.

Additional requirements apply to diverted waste collected from non-households like schools, non-profits, small businesses, churches, etc. These collections must meet the Part 115 waste

diversion center operating requirements and the Part 121 liquid industrial by-products designated facility requirements for any liquids. Learn more about the diversion center regulations by viewing the Household and Very Small Generator Hazardous Waste Collection Site Regulations Recorded Webinar available at Michigan.gov/EGLEHHW, after selecting the link for "HHW and Very Small Quantity Generators Hazardous Waste Collector Resources."

Learn more about household hazardous waste, their hazards, and community collection options, at Michigan.gov/EGLEHHW. For resources on safe disposal of household medications, see EGLE's interactive map at Michigan.gov/EGLEDrugDisposal. To quickly learn what is a hazardous waste, view our EGLE Classroom Hazardous Waste 101 video and subscribe to EGLE's YouTube channel at Youtube.com/MichiganEGLE.

2.1.2.i Coal Combustion Residuals

In December 2018, Sections 11511a, 11512a, 11519a, 11519b, and 11519c of Part 115 were amended to more closely align Michigan's solid waste regulations with changes in RCRA, Subpart D, 40 CFR Part 257. RCRA, Subpart D was amended to provide standards for the disposal of coal combustion residuals (CCR) in landfills and surface impoundments. RCRA, Subpart D now has specific requirements for the management of CCR generated by electric utilities and independent power producers. Part 115 was amended to set permitting, licensing, and operational requirements for the following:

- the storage of CCR in surface impoundments and
- the disposal of CCR in landfills or surface impoundments, where the waste will remain in place after closure.

The CCR amendments do not apply to CCR disposed in a permitted and licensed Michigan Part 115 municipal solid waste landfill.

Under the Part 115 amendments, CCR is defined as "coal ash." Under the federal regulations "coal ash" includes coal bottom ash, fly ash, boiler slag, and flue gas desulfurization materials. The Part 115 amendments also define "coal ash" to include fluidized-bed combustion ash. When referenced in this guide as CCR, use the Part 115 definition of "coal ash." CCR, when utilized as a beneficial use by-product (see Chapter 2.1.2.e above), is exempted from the new Part 115 disposal provisions, assuming the beneficial use provisions are met. Note however, CCR stored in a surface impoundment prior to re-use as a beneficial use by-product is subject to the CCR storage impoundment requirements found in Part 115.

Under the 2018 amendments, existing CCR surface impoundments and landfills must be closed by December 2020 or be licensed under Part 115 by December 2020. CCR landfill and surface

impoundments now have siting criteria, structural stability analyses, construction and design criteria, fugitive dust control, and numerous other requirements that must be included in Part 115 licensing. They must also have groundwater monitoring programs and there are requirements to perform corrective action in the event of a release to protect human health and the environment. Under the new regulations, all designated CCR facilities must also maintain publicly accessible internet sites which provide access to the facility operating record, as well as engineering reports and plans.

2.1.2.j Recycling Reporting

In June 2016, Part 175 (Recycling Reporting) of Act 451 became a law. Part 175 requires certain recycling facilities to report the amount of paper and paper products, plastic and plastic products, glass, textiles, ferrous metals, nonferrous metals, and single stream recyclables recycled each year. To better measure the amount of materials recycled in Michigan, recycling facilities not required to report are encouraged to report voluntarily using the Michigan Recycling Reporting system, housed in Re-TRAC CONNECT. Learn more about recycling reporting by viewing the What is Recycle Search video and other resources available on the Part 175 Michigan Recycling Reporting Website.

2.2 SOLID WASTE DISPOSAL AND LITTERING

No matter how effective your waste reduction and recycling programs are, you will probably 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 that are not hazardous waste.

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

- Used oil (see Chapter 2.7.1 and 2.7.2)
- Whole tires (see Chapter 2.2.2)
- Liquid industrial by-products (see Chapter 2.3)
- Returnable beverage containers
- Lead acid batteries (see Chapter 2.7.3)
- Yard clippings and compost (see Chapter 2.1.2.c)
- Medical waste (see Chapter 2.5)

- Sewage/Septage (see Chapter 3)
- 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 (see Chapter 10)
- PCB waste, unless landfill meets specific requirements (see Chapter 4.5)

Used oil is specifically required to be recycled under Part 167 (Used Oil Recycling) of Act 451. See the Used Oil Overview guidance and additional guidance links provided therein for more information about the regulations and requirements that apply for managing used oil.

For more information about banned waste, see the Landfill Prohibited Materials Guide.

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 EGLE District Office, Solid Waste Program staff.
- Check if the licensed disposal facility accepts your type of waste. They may request documentation, like test results, showing it is not a hazardous waste or liquid industrial by-product to ensure they can accept the waste. Examples of special wastes include remediation waste, fluorescent bulbs, batteries, pharmaceuticals, asbestos waste, aerosol cans, compressed gas cylinders, or bulky items. Disposal facilities typically offer special wastes service for these items to divert them from landfills to preferable management options.

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 agent after reviewing the county planning import/export report and description to confirm that is acceptable under the provisions of your county's solid waste management plan and the receiving county's solid waste management plan. Those plans identify where solid waste can be transported for disposal within Michigan. See the list of County Designated Planning Agency Contacts on

EGLE's Solid Waste Planning website by going to **Michigan.gov/EGLEWaste** and selecting the "Solid Waste" tab on the left of the page, then "Solid Waste Planning." 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 plans.

View the recorded webinar on waste characterization included in the Waste Webinar Series available at **Michigan.gov/EGLEEvents**. Waste characterization requirements apply to all non-households including manufacturing, commercial service operations, non-profit operations, churches, hospitals, municipalities, etc.

All waste generators, except households, are required by law to:

- ✓ Determine the regulatory status of their waste (hazardous waste, liquid industrial by-product, solid waste, etc.).
- ✓ Keep records of waste evaluations and supporting information used to determine the management, transport, treatment, storage, and disposal standards that apply.
- ✓ Keep records of waste evaluations for 3 years.

Currently, there are no EGLE 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 **Michigan.gov/EGLEWaste** by selecting "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 EGLE District Office, Solid Waste Program staff with questions on:

- 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 by-products regulations (see Chapter 2.3).
- How to determine if your waste is regulated as a solid waste, or how to properly manage it. For help determining whether you have a solid waste, liquid industrial by-product, hazardous waste, or other waste, view the "Waste Characterization and Hazardous Waste Generator Status" recorded webinar from EGLE's Waste Webinar Series, available at **Michigan.gov/EGLEEvents** and/or review Chapter 2.4.

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 should 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.

Contact your EGLE District Office, Solid Waste Program staff for information on 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 AND OPEN DUMPING

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. Michigan residents are also prohibited from open burning household trash that contains plastic, rubber, foam, chemically treated wood, textiles, electronics, chemicals, or hazardous materials. 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 **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. To quickly learn about what can and cannot be burned in Michigan, see the MI EnviroMinute YouTube **video** on Open Burning and consider subscribing to EGLE's YouTube channel, **Youtube.com/MichiganEGLE**.

Open burning may also be regulated by the local unit of government. Contact local authorities about their ordinances. Additional information about open burning and reaching local authorities can be found at EGLE's Open Burning website at **Michigan.gov/OpenBurning** and **Michigan.gov/BurnPermit** (see also Chapter 1.3.3).

Open dumping of solid waste is prohibited of both businesses and residents across Michigan under the solid waste regulations. Open dumping generally refers to illegal dumping along roadsides, in the woods, in illegal landfills, in wetlands, and in lakes and streams. Local authorities often have local ordinances that also prohibit the dumping of solid waste. For complaints or problems with solid waste open dumping, contact your local authorities to discuss ordinance requirements. If a municipality is lacking a local ordinance, they may independently take action to enforce the state's prohibitions against littering under **Part 89** of Act 451.

2.2.2 SCRAP TIRES

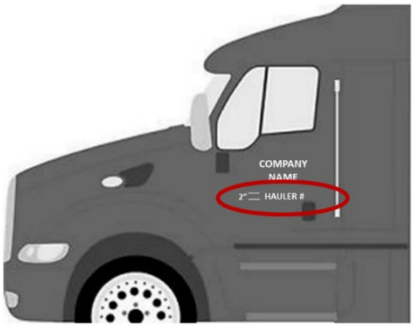
Part 169 (Scrap Tires) of Act 451 was amended in January 2015. Haulers are now required to maintain a bond and there are amended requirements for displaying the scrap tire hauler registration on a vehicle transporting scrap tires, for record keeping, and increased penalties for violations of the statute. See Section 16905 for more details on hauler registration and bonding.

Visit **Michigan.gov/ScrapTires** for more information about 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 include any used vehicle tires and discarded tires from any hi-low, forklift, or other equipment.

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 site and meet additional storage requirements. Requirements and common violations can be found at **Michigan.gov/ScrapTires**.
- Ensure scrap tires are taken to registered scrap tire collection sites and scrap tire processors, such as licensed energy recovery facilities or reuse, retreading, or recycling facilities. You can:
    - Haul ten 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 ten 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 that can accept used tires are found at **Michigan.gov/ScrapTires** 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 and maintain bonding in favor of EGLE in the amount of $10,000 and the registration must be renewed annually. 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 transportation record 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 EQP5128 or EQP5128a 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.

For information about the compliance status of a hauler or disposal site, or if you have questions about registering as a hauler or collection location, contact EGLE's Scrap Tire Program staff at 517-614-7431 or EGLE-ScrapTire@Michigan.gov, or contact Scrap Tire Program staff in your EGLE District Office (See Appendix C).

2.3 LIQUID INDUSTRIAL BY-PRODUCTS

Liquid industrial by-products are regulated under Part 121 of Act 451. On December 17, 2015, Part 121 was amended and renamed from "liquid industrial waste" to "liquid industrial by-products." The changes became effective on March 16, 2016. The changes resulting from the amended law are reflected throughout this chapter and guidebook.

Liquid industrial by-products management is overseen by several entities:

- EGLE's Hazardous Waste Program oversees the management of liquid industrial by-products at generator sites, when in transport, and at "designated facilities" receiving liquid industrial by-products.
- EGLE's Hazardous Waste Transporter Program oversees the permitting and registering of liquid industrial by-products transporters (see Chapter 4.4.11).
- EGLE's Water Resource Division (WRD) oversees the discharge and permitting of liquid by-products into surface water and groundwater (see Chapter 3).
- The local publicly-owned treatment works (POTW) with discharge permits issued pursuant to Part 31 oversee the discharge and permitting of liquid by-products from businesses connected to their sanitary or combined sanitary sewer systems (see Chapter 3). Waste generators must obtain permission from the sanitary or combined sewer authority before discharging waste to the sanitary or combined sewer system. Discharge of liquid industrial by-products to any storm sewer is prohibited.
- EGLE's On-site Wastewater Program oversees the discharge and permitting of sanitary wastewaters to on-site septic systems in coordination with local health departments (see

Chapter 3.2.2). These on-site septic systems are permitted and inspected by the local health departments. They are only designed to handle sanitary wastewaters from bathrooms, kitchens, and laundry devices. Some communities may have local ordinance requirements in addition to the state regulations implemented by the local authorities. The local governing agency of these ordinances will vary from community to community and is typically the county, city, or township zoning or building office, or the public health department's environmental health section.

- The Michigan State Police, Commercial Vehicle Enforcement Division and US DOT oversee transportation requirements if the liquid by-product is a **hazardous material-USDOT** (Chapter 4).
- Insurance companies may have requirements for storage and shipping.

2.3.1 DEFINING LIQUID INDUSTRIAL BY-PRODUCTS

Liquid industrial by-products generally include liquid materials that:

- are discarded by non-households,
- fail the paint filter liquids test (see Chapter 2.4.2.c),
- are not exempted or excluded under Part 121 of Act 451, and
- are not regulated as hazardous waste or medical waste (see Chapters 2.4 and 2.5).

Common examples of liquid industrial by-products include used oil that is being recycled, storm sewer and some sanitary sewer clean-out wastewaters or sludges, car wash catch basin waste, grease trap clean-out residue, industrial and commercial wastewaters (like wastewaters or on-site septic system sludges from food processing, slaughterhouses, or laundromats), some precipitation removed from secondary containment structures (see Chapter 4.1), antifreeze that is not a hazardous waste, some off-specification commercial chemical products, and liquids exempted from hazardous waste regulation (e.g., hazardous secondary materials, brine, and other discarded liquids that can no longer be used for their original intended purpose without reclamation or treatment). Liquid industrial by-products also include most discarded liquids pumped and hauled over public roadways not subject to hazardous waste regulation, and liquids and sludges sent to a solid waste solidification facility prior to landfilling.

For a discarded material to be excluded from the Part 121 (Liquid industrial by-products) regulations, the material needs to be specifically excluded under the statute. Common exclusions found under Part 121, Section 12101(n) include:

- Hazardous waste from small or large quantity hazardous waste generators subject to the Part 111 (Hazardous waste) regulations (see Chapter 2.4)
- Septage waste or on-site septic system wastewaters and sludges removed from systems handling sanitary wastewaters from bathrooms, kitchens, and domestic laundry devices managed under the Part 117 (Septage Waste Servicer) regulations (see Chapter 3.2.2)

- Medical waste or infectious or potentially infectious blood, body fluids, or body parts from humans or animals which are subject to the Act 363, Public Health Code, Part 138 (Medical waste) regulations (see Chapter 2.5 and 2.6)
- Discarded liquids from households subject to the solid waste regulations found under Part 115 (see Chapter 2.2)
- Fats, oil, and grease sent for rendering and managed in accordance with Act 239, Bodies of Dead Animals Act, of 1982, implemented by the Michigan Department of Agriculture and Rural Development. For additional regulations to protect water related to fats, oil, grease, and petroleum-based used oil, please see Chapter 4.
- Wastewater discharges authorized by a Part 31 permit, rule, or order issued by WRD (e.g. a publicly owned treatment works (POTW) possessing a Part 31, National Pollutant Discharge Elimination System (NPDES), or groundwater discharge permit), and any sanitary or combined sewer system wastewaters, including system maintenance wastewaters, specifically subject to the permit. This exclusion also applies to wastewater discharged to the sanitary or combined sewer system possessing a Part 31 discharge authorization if the POTW has authorized the generator's discharge to their system. Any management of liquid industrial by-products by the generator before it is discharged to the sanitary or combined sewer system is subject to the liquid industrial by-products generator requirements. This exemption does not apply to any liquid industrial by-products transported by motor vehicle or rail to a receiving POTW. For information on Part 31 permits by rule, see Part 31, Part 22 Rules, Rule 2211; and Chapters 3.2.4 and 4.1.

If liquid industrial by-products are discharged to a POTW for disposal, the site must keep a copy of the permit or the submission to the receiving facility with their approval and records of the liquid industrial by-product 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.

Sanitary or combined sewer system clean-out waste is excluded from Part 121 if the sewer system and the maintenance waste is subject to a Part 31 wastewater discharge permit, rule, or order. If sanitary sewer or combined sewer system clean-out waste is subject to a Part 31 discharge authorization, any direct or indirect release of sewage wastewaters occurring when removing, transporting, treating, and/or disposing of the waste that is not authorized under the permit must be reported as a sanitary sewer overflow (SSO) or combined sanitary overflow (CSO) to WRD in accordance with Part 31, Section 3112a.

Contributing municipalities or "satellite" sanitary and combined sewer systems that do not possess a Part 31 discharge authorization must manage their sanitary sewer or combined sewer system clean-out waste as a liquid industrial by-product. Satellite systems with a separate sanitary sewer system can also use a Part 117 permitted septage hauler when the sanitary sewer system wastewater is not land applied and it is transported to the same sanitary sewer system or

receiving POTW. If any sanitary sewer or combined sewer clean-out wastes are transported to a receiving POTW other than the destination specified in the Part 31 discharge permit or permit from the receiving POTW, the wastewater must be managed as a liquid industrial by-product. All clean-out waste from sewer systems that only collect and convey stormwater also must be managed to meet the liquid industrial by-products regulations. See the summary table identifying the different regulations that apply to wastewaters transported via public roadway for recycling or disposal. For more information, contact your EGLE District Office in the following programs with questions: Hazardous Waste Program, On-site Wastewater Program or Septage Program, Groundwater Permit or NPDES Permit Program.

Other exclusions from Part 121 are found under Section 12102a, which identifies materials not specified as liquid industrial by-products. Some of the more common liquid industrial by-product exclusions found in this section include:

- Materials that can be used or reused as effective substitutes for commercial products, used or reused as an ingredient to make a product, or returned to the original process, if the materials do not require reclamation prior to use or reuse, are not burned for energy or as fuel, and they are not applied to the land or used in products applied to the land.
- On-specification petroleum-based used oil, as defined under the Part 111 (Hazardous waste) regulations and Section 12102a, that is burned to recover energy or used to produce a fuel and it is authorized for use as fuel under a Part 55 permit or permit exemption.
- Liquids fully contained in a manufactured article, until the liquid is removed from the manufactured item or when the manufactured item is destined for recycling or disposal (e.g. when a salvaged auto is destined to be shredded, the fluids must be removed and managed to meet the liquid industrial by-products regulations).
- When managed as specified in Section 12102a, the following materials are excluded from liquid industrial by-products regulation:
    - A liquid by-product sample transported for testing to determine its characteristics or composition, until discarded.
    - Liquid generated in the drilling, operation, maintenance, or closure of a well.
    - Liquid vegetable or animal fat oils transported directly to a biofuel producer for producing biofuel.
    - Off-specification fuel generated in a pipeline from the mixture of two adjacent fuels, if processed into fuel.
    - Off-specification fuel product transported directly for refining into fuel.
    - Liquid or sludge and associated liquid authorized for land application under Parts 31 or 115 (e.g., biosolids per Part 31, Part 24 rules, see Chapter 2.7.18).

  - Empty containers that once held liquid industrial by-products. This includes liquid residue remaining in a container that was emptied using common practices employed by industry for that container type and residues do not exceed:
    - 1 inch in the bottom of the container, or
    - more than 3% by weight for containers <110 gallons, or
    - 0.3% by weight for containers > 110 gallons in size.

    Containers that can be completely emptied using common practices employed by industry must be completely emptied or managed as a liquid industrial by-product.

- Residual liquid in a container because of transportation of a solid waste in that container.
- Brine authorized for use as dust and ice control under Parts 31 and 615.
- Food processing residuals per Section 11503, or site, source-separated material approved by EGLE under Part 115 used to produce biogas under closed system anaerobic conditions authorized by Part 55.
- Liquid approved by the Director for use as a biofuel that is Part 55 authorized, not speculatively accumulated, and is transported directly to the biofuel burner.

For help determining what is a liquid industrial by-product and what is excluded, contact your EGLE District Office, Hazardous Waste Program staff.

2.3.2 LIQUID INDUSTRIAL BY-PRODUCTS GENERATOR REQUIREMENTS

Sites that generate liquid industrial by-products are required to comply with the following:

- Characterize the liquid to determine if it is non-hazardous, hazardous, or subject to other waste regulations and keep a record of the characterization for at least three years after the most recent shipment for treatment, storage, or disposal. View EGLE's recorded Waste Webinar Series at **Michigan.gov/EGLEEvents**, or see Chapter 2.4, to learn how to determine whether you have a solid waste, liquid industrial by-product, or hazardous waste. Consider using EGLE's optional fillable form for documenting the waste determination.

All waste generators except households are required by law to:

- ✓ Determine the regulatory status of their waste (hazardous waste, liquid industrial by-product, solid waste, etc.).
- ✓ Keep records of waste evaluations and support information used to determine the management, transport, treatment, storage, and disposal standards that apply.
- ✓ Keep records for three years.

- Meet storage requirements:
  - Protect containers and tanks from weather, fire, physical damage, and vandals.
  - Containers and tanks must be labeled so workers and emergency responders know what is in them.
    - Example: Mark a container of liquid industrial by-product antifreeze as "spent antifreeze," "spent ethylene glycol," or "spent propylene glycol" depending on the material used.
    - Labels should include language that is commonly used in commerce and emergency response. This may include a product name and details regarding the process generating the waste. Labels should be consistent with the waste type used on the shipping documents and the characterization records documenting the liquid industrial by-product determination.
    - Containers of used oil must be labeled "Used Oil" - see Chapter 2.7.1 for details regarding the requirements specific to used oil and Chapter 4.
  - Manage liquid industrial by-products to prevent unauthorized sudden or non-sudden 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 liquid industrial by-products. For liquid industrial by-products, closed means that container covers are securely affixed with a bolted ring clamp or closed snap ring, bung plugs are installed in openings, and threaded covers are screwed shut.

      See **Operational Memo 111-20** for more information about closed containers.

    - Non-pressurized, mobile oil drain pans must be, at a minimum, emptied when not in use. If a funnel is routinely used, to avoid having to remove the funnel and reclose the container regularly, a threaded funnel with a one-way valve or ball valve, or a funnel with a latchable, gasketed cover can be used. Containers can also be closed in accordance with other state law. Documentation of the applicable state law is recommended.

      
      Non-pressurized mobile oil drain pan

    - Containers must be compatible with the type of liquid industrial by-products being stored in them. The SDS for the virgin ingredients may provide some recommendations or see web sites like **flw.com/datatools**.

- Incompatible wastes must not be placed in the same container.
- Other environmental regulations may require secondary containment. See Chapter 4 for more details on secondary containment requirements.
- Liquid industrial by-products that have 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 LARA, Bureau of Fire Service, Storage Tank Division, by the MIOSHA General Industry Safety Standards - Part 75, Flammable and Combustible Liquids, and by the local municipality's fire prevention code (see Chapter 4 for more information).
- Liquid industrial by-products in underground storage tanks that are a regulated substance under Part 211 (Underground Storage Tanks) of Act 451 would have additional requirements under the tank regulations implemented by LARA, Bureau of Fire Service, Storage Tank Division (see Chapter 4).

o There is no state accumulation time limit for storing liquid industrial by-products at the site where it is generated, but local ordinances may have limits.

TABLE 2.2 Liquid Industrial By-Products Generator and Used Oil Generator Accumulation Summary (includes most used oil)

Amount generated in calendar month	Maximum amount that can be accumulated on-site	Maximum time period before liquid industrial by-products must be shipped
(any amount)[1]	No maximum amount under state regulations. If the generator is also a designated facility receiving liquid industrial by-products from off-site, there are many additional requirements.	No state time limit for generators if containers are in good shape and closed. Check local ordinances for any time limits.

[1]See Part 121 for possible liquid industrial by-product exemptions and designated facility requirements.

- If operating an on-site reclamation, treatment, or disposal facility, keep records of all liquid industrial by-products produced and reclaimed, treated, or disposed at the facility for at least three years, unless the facility is under investigation which requires records 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 by-product is treated, stored, or disposed 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 your EGLE District Office, WRD.
- Complete and maintain proper shipping documents demonstrating proper recycling or disposal. As of March 2016, Site ID numbers are no longer required for generators shipping liquid industrial by-products and/or very small quantity generator hazardous waste liquids

for recycling or disposal. Generators choosing to use a Uniform Hazardous Waste Manifest as a shipping document to meet the Part 121 requirements are encouraged to use their Site ID number if they have one. If using the e-Manifest system, a Site ID is required. If no Site ID number is assigned and the e-Manifest system is not used, generators are encouraged to complete the manifest as follows for the Generator ID Number field:

- Use "MILIB" for manifests documenting shipment of only liquid industrial by-products.
- Use "MIVSQG" for manifests documenting shipment of only very small quantity generator (VSQG) liquid hazardous waste.
- Use "MIVSQGLIB" for manifests documenting shipment of both VSQG liquid hazardous waste liquids and liquid industrial by-products.

As of March 2016, liquid industrial by-products and/or very small quantity generator hazardous waste liquid shipping documents may be a log, invoice, bill of lading, Uniform Hazardous Waste Manifest, or other record in written or electronic format (see liquid industrial by-products optional fillable shipping document). The liquid industrial by-product shipping document must include:

- The name and address of the generator.
- The name of the transporter.
- The type and volume of liquid industrial by-product in the shipment.
- The date the liquid industrial by-product was shipped off-site from the generator.
- The name, address, and Site ID number of the designated facility.

At the time of shipment, the generator must certify the shipping document fully and accurately describes the liquid industrial by-products, that the liquid industrial by-products are in proper condition for transport, and that the information contained on the shipping document is factual. An electronic signature is acceptable for electronic records. The certification included on Uniform Hazardous Waste Manifests meets the Part 121 certification requirement.

Upon pick-up, the transporter must sign the shipping document with a certification statement confirming the liquid industrial by-products were accepted for transport. Both the generator and the transporter are required to retain a copy of the shipping document. The transporter copy of the shipping document must accompany the shipment in transport. The transporter must deliver the liquid industrial by-products only to the designated facility identified on the shipping document by the generator. The designated facility can only accept delivery if the facility is the designated facility identified on the shipping document. Following acceptance, the designated facility must provide confirmation of receipt of the shipment to the generator. The confirmation may be written or electronic via email, receipt, copy of the shipping document transmitted, invoice, etc.

Shipments may be documented on a consolidated shipping document if the shipment includes multiple pick-ups of the same type of liquid industrial by-products from multiple sites. A receipt must be provided to the generator which includes the transporter's name, transporter's Site ID, transporter's signature, date of pickup, type and quantity of by-products accepted, the consolidated shipping document number, and the designated facility Site ID number. See Chapter 2.4.5.a and the Liquid Industrial By-products Frequently Asked Questions for more information about consolidated shipping documents and options for generators to self-transport waste generated on or in equipment or property in which they have an ownership interest.

Shipping documents must be maintained on file for at least three years from the last date of shipment. If the generator does not receive confirmation of acceptance of the liquid industrial by-product shipment from the designated facility, the generator must attempt to obtain confirmation by contacting the designated facility and the transporter. If resolution cannot be achieved after contacting both parties, the generator must notify EGLE of the situation. Consider using the Generator Tracking Log for Manifests/Shipping Documents to ensure timely notification of receipt of liquid industrial by-products is provided by your designated facility(ies).

- Hire a permitted and registered transporter to take the liquid industrial by-products to an appropriate receiving 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 the incident and response measures. Keep the report on-site and submit a copy to EGLE, if requested. A summary table of state and federal regulations that require release reporting is included in Chapter 6 and at **Michigan.gov/ChemRelease**. Some liquid industrial by-products 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).
- If using pump and haul tanks, see the Liquid Non-hazardous Waste (By-Products) Holding Tank guidance for more information.
- If emptying tanks or containers, see the Emptying Tanks or Containers guidance.

See Chapter 2.1, including Chapter 2.1.2, for applicable solid waste regulations requiring solid waste permitting, licensing, and planning authorizations. See Chapter 2.3.3 for additional Part 121 regulations requiring emergency planning, time limits, and reporting; all apply when receiving liquid industrial by-products from off-site.

Beyond reviewing Part 121, see if additional containment requirements apply when handling threshold management quantities of materials regulated under the federal Spill Prevention Control and Countermeasure (SPCC) for oils and the state Part 5 rules for "Spillage of Oil and Polluting Materials" under Part 31 (Water Resource Protection) of Act 451. See Chapters 4 and 6 for more information on water regulations requiring containment, and don't forget to review local ordinance requirements. Depending on the liquid by-products generated, emergency planning may be required under other regulations (e.g. Part 5 rules mentioned above) if threshold management quantities are reached (see Chapter 6).

2.3.3 LIQUID INDUSTRIAL BY-PRODUCTS DESIGNATED FACILITY REQUIREMENTS

A liquid industrial by-products designated facility is a facility that receives liquid industrial by-products from off-site via public roadway. The facility may store, treat, reclaim, and/or dispose of the liquid industrial by-products and/or residuals from the treatment and/or reclamation of the liquid industrial by-products. A liquid industrial by-products designated facility may require a solid waste processing permit and license under Part 115, a POTW permit under Part 31, an air use permit under Part 55, and/or the equipment may be exempt from permitting and licensing, depending on the types of the materials accepted, the activities the site performs, and the size of the facility. Designated facilities receiving liquid industrial by-products that are determined to be a solid waste disposal area would need to be consistent with the county's solid waste management plan and would require a solid waste permit and license prior to construction and operation.

To understand the permitting, licensing, notification, registration, or other authorization(s) required for site-specific designated facility activities, see the Permit Information Checklist at **Michigan.gov/EGLEPermits**. For information on wastewater treatment and on-site wastewater regulations, please see Chapter 3. To learn about solid waste construction permits and operating licensing go to **Michigan.gov/EGLEWaste**, select the "Solid Waste" tab on the left, then select "Solid Waste Disposal Area Construction Permit Application Forms & Instructions" or "Solid Waste Operating License Application & Instructions." To learn about county Solid Waste Planning go to **Michigan.gov/EGLEWaste**, select the "Solid Waste" tab on the left, then select "Solid Waste Planning." In addition to any requirements provided under the other authorizing environmental regulations, a liquid industrial by-products designated facility must be managed to meet the designated facility requirements found in Part 121 and highlighted below.

Many designated facilities are Part 31 permitted POTWs. Beyond processing sanitary and combined sewer system wastewaters, the POTWs also accept incoming shipments transported via public roadway. Depending on the generator and type of material shipped, these materials may be subject to regulation under the facility's Part 31 discharge permit, the Part 117 septage regulations for on-site septic systems, or the Part 121 liquid industrial by-products regulations that apply to all other liquids, most notably commercial and industrial wastewaters. To learn more about the various regulations that apply to incoming shipments, see Chapter 2.3.1 and 2.3.2, the Receiving Facilities Reporting Requirements Guide, the recorded webinars included in the Waste Webinar Series available at **Michigan.gov/EGLEEvents**, and Chapter 3.

Designated facility waste profiling and approval processes for off-site waste shipments should include a review of the generator's records and regulatory conclusions. All non-households must characterize their waste streams and create a record of their waste determination. Only household-generated, discarded materials associated with daily living activities are excluded from the waste characterization requirements.

Under Part 121, designated facilities receiving liquid industrial by-products must:

- Notify EGLE MMD of the site's liquid industrial by-products activities using the Site ID Form, EQP5150 form. Most designated facilities accepting liquid industrial by-products also generate and transport liquid industrial by-products (see Liquid Industrial By-products Generator guidance, Chapter 2.3.1, and Chapter 4). When notifying of regulated waste activities, all activities occurring at the site must be identified.
- Maintain characterization/profiling records for the liquid industrial by-products received.
- Only place liquid industrial by-products in containers and tanks in good condition, unless other structures are specifically authorized under other EGLE regulations (e.g., surface impoundment authorized under Part 31 or a solid waste solidification unit authorized under Part 115). Liquid industrial by-products containers and tanks should be marked or labeled to identify their contents to ensure the hazards from the materials are easy to identify during any emergency response.
- Except as otherwise expressly authorized by EGLE environmental regulations, manage the liquid industrial by-products to prevent it from being discharged into the soil, surface water or groundwater, a drain or sewer, or air in violation of the air pollution control regulations.
- Ensure storage of liquid industrial by-products is protected from weather, fire, physical damage, and vandals.
- Ensure that all vehicles, containers, and tanks used to hold liquid industrial by-products are always closed or covered, except when adding or removing liquid industrial by-products.
- Only accept a shipment if they are the designated facility listed on the shipping document certified by the generator and transporter. Designated facilities are not required to certify the shipping document.
- Provide confirmation of receipt of the shipment to the generator or generator representative (transporter in the case of a consolidated shipping document). The confirmation may be written or electronic (documented phone call, email, receipt, shipping document, or manifest copy). Note, for consolidated shipping documents, the transporter fulfills the generator duties in completing the shipping document. Once delivered, the transporter must provide a receipt to the generator that includes:
    - Transporter's name,
    - Driver's signature,

  - Date of pickup,
  - Type and quantity of liquid industrial by-product accepted/shipped,
  - Consolidated shipping document number, and
  - Designated facility name.

- Only accept liquid industrial by-products from Act 138 permitted and registered liquid industrial by-products transporters possessing adequate insurance documented on an MCS-90 endorsement form and carrying verification of registration and permit on the vehicle in written or electronic format, unless:
  - the person transporting the liquid industrial by-product is the generator who generated the material on or from property or equipment which they own, or
  - the transport vehicle is owned and operated by a local, state, or federal government, or any other political subdivision (e.g., state university with elected regents) hauling their own by-product(s).
- Process or ship the liquid industrial by-products to another site within one year unless:
  - It is stored for reclamation,
  - Not less than 75% of the cumulative amount, by weight or volume, of each type of liquid industrial by-product that is stored is reclaimed or transferred to a different site for reclamation during that calendar year, and
  - Documentation is maintained to verify any storage beyond a year is authorized for each waste stream.
- Have a plan to respond to and minimize hazards to human health and the environment from unplanned sudden and non-sudden releases.
- Meet waste diversion requirements found under Part 11521b if diverting household liquids from being landfilled.
- Retain and make all required records available for three years. Electronic recordkeeping is acceptable, but must be readable, have all the required information, and be accessible.
- Train employees handling liquid industrial by-products in proper handling and emergency response as appropriate for their job duties and document the training.
- Take appropriate, immediate action to protect public health, safety, and welfare and the environment, including notification to local authorities and the Pollution Emergency Alerting System if a fire, explosion, or discharge of liquid industrial by-product occurs that could threaten human health, the environment, or has reached groundwater or surface water, including:
  - Notify EGLE's Pollution Emergency Alerting System at 800-292-4706 and
  - Submit any follow-up reports required.

- Submit a liquid industrial by-products report identifying the type and amount of liquid industrial by-products handled at the site during the previous calendar year. The report must be submitted to EGLE by April 30 of each year using the EQP1602 form and instructions. See the summary table identifying the different regulations that apply to wastewaters transported via public roadway for recycling or disposal for more information. Contact your EGLE District Office Staff in the following programs with questions: Hazardous Waste Program, On-site Wastewater Program or Septage Program, Groundwater Permit or NPDES Permit Program. EGLE's Hazardous Waste or Septage Program for questions.

For additional details on generator, transporter, and designated facility requirements for handling liquid industrial by-products, see the Liquid Industrial By-products Generator guidance and Frequently Asked Questions. For questions about the liquid industrial by-products designated facility requirements, contact your EGLE District Office, Hazardous Waste Program staff.

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 for at least three years after the waste is shipped for treatment, storage, or disposal.
- Properly manage the waste to prevent any release to the environment.

The hazardous waste regulations are prescriptive and designed to prevent any releases of hazardous waste. They apply to all businesses, not just manufacturing. This includes service industries, governmental operations, health care, etc.

The hazardous waste regulations require lots of records. Having a single record keeping system where all the waste determination records, manifests, shipping documents, land disposal restrictions, contingency plans, training, and inspection records, etc. are filed is highly recommended. This makes it is easy to share records during an inspection to verify the hazardous wastes are managed properly.

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.

When reading this guidebook, do not confuse the term **hazardous waste** with **hazardous material-USDOT**, **hazardous material-EGLE**, and **hazardous material-Act 207.** Each term has specific regulatory definitions and requirements. See Chapter 4 and Appendix B to learn more about the definitions and the differences in the regulations that govern the management of these materials.

All hazardous waste that is required to be shipped with a Uniform Hazardous Waste Manifest is defined as a **hazardous material-USDOT**. There are some wastes that are not regulated as a hazardous waste yet are regulated as a **hazardous material-USDOT**. This chapter discusses the general requirements regarding hazardous waste. It focuses on generator requirements for handling waste and does not discuss requirements for treatment, storage, and disposal facilities (TSDF) or transporters requiring permits, licenses, and registrations. This section provides detailed information on handling the common hazardous waste streams in Chapter 2.7. It also outlines how the specific requirements that must be met depend on the quantities of hazardous waste generated and accumulated within a specific time period at your site.

If you have any questions about managing hazardous waste generated at your site after reviewing Chapter 2, contact your environmental consultant, disposal vendor, and/or EGLE District Office Hazardous Waste Program staff. For questions about transport permits and registration, please see Chapter 4. For questions about permitted and licensed TSDFs, contact EGLE District Office, Hazardous Waste Program staff for hazardous waste facilities and EGLE District Office, Solid Waste Program staff for solid waste facilities.

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 1) are included on specific lists within the regulations (listed hazardous waste) or 2) exhibit hazardous characteristic(s) specified in the regulations (characteristic hazardous waste). When making a waste determination, generators must evaluate the waste at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, as specified in Rule 302 of the Part 111 rules. The point of generation for a listed hazardous waste is when it first meets the listing description. The point of generation for a mixture of listed hazardous waste with other waste is when the waste materials are mixed. The point of generation for a characteristic hazardous waste is when the waste first exhibits the hazardous waste characteristic.

Each hazardous waste type, regardless of whether it is a listed 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 US EPA waste number, also called a waste code, that begins with a letter followed by 3 digits. The additional Michigan hazardous waste numbers begin with the 3 digits and end with a letter. Some wastes have several waste numbers that apply because they exhibit multiple hazardous waste characteristics (e.g., a single waste stream can be both toxic for benzene and ignitable because of its low flashpoint and thus tracked using two hazardous waste numbers/codes), and some also have a listed hazardous waste code. It is important to recognize all of the waste codes that apply to ensure proper handling of the waste from cradle to crave.

To determine whether you have a hazardous waste, liquid industrial by-product, or solid waste, view EGLE's recorded Waste Characterization and Generator Status webinar in the Waste Webinar Series available at **Michigan.gov/EGLEEvents**.

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" incorporated into both the state and federal regulations. The intent of the "mixture rule" is to ensure that the solution to pollution is not dilution.

Only hazardous waste meeting a regulatory exclusion, exemptions, or partial exemption in the Part 111 Rules are excluded from having to be managed using the cradle to grave tracking Uniform Hazardous Waste Manifest. Even listed hazardous waste excluded from hazardous waste manifesting remains subject to the land disposal restrictions as provided under Rule 203(7) (see Chapter 2.4.5.c). And if a waste is excluded from Part 111 (Hazardous waste regulation) it is generally subject to Part 121 if it is liquid or Part 115 if it is 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. When claiming an exclusion or exemption, be prepared by having good records that support your determination as this is specifically required under Rule 202(5) and Rule 302 and detailed further in Chapter 2.4.2.e, Step 5.

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. Federal listed hazardous waste codes all start with a "F," "K," "P," or "U," while state listed hazardous waste codes all end in an "S" or "U."

- **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 and includes all "F" coded waste. This list includes wastes from equipment like degreasers and wastewater treatment operations used at many manufacturing and service businesses. 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 list. Besides knowing the solvent constituents and their concentration, proper characterization of "F" listed solvent waste also depends on how the solvent was used (see Chapters 2.7.8 and 2.7.9). Some "F" listed hazardous wastes also have an "H" designation included in the hazard code column of Table 203. 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 and includes all "K" coded waste. This list includes wastes from industries like chemical manufacturing, petroleum refining, and iron and steel production, among others. Most Michigan manufacturers do not generate "K" wastes. Most Michigan "K" wastes are generated from iron and steel production and petroleum refining industries. Michigan has had the same "K" list as the federal regulations since 2013.
- **Discarded commercial chemical products, off-specification chemicals, and their container or spill residues.** The lists of federal discarded commercial chemical products (CCPs), off-specification CCPs, and their container or spill residues are found in Tables 205a and 205b of the Part 111 rules and have waste codes that start with a "P" or "U." The list of state discarded CCPs, off-specification CCPs and their container and spill residues is found in Table 205c and includes waste codes that end with a "U." Discarded CCP, off-specification CCP, and their containers and spill residues meet the listing and are a hazardous waste if the CCP is unused and the listed CCP functions as the sole active ingredient in the product. Formulations with a sole active ingredient have one ingredient that serves a function. CCPs may contain several materials like water, oil, or other materials that serve as a carriers, fillers, or preservatives. For example, technical grade toluene that is used for cleaning is a U220 listed 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 listed hazardous waste if it was used for cleaning and then is discarded. Businesses often generate "P" or "U" wastes when disposing of unused chemicals mistakenly contaminated or when accidently producing an off-specification chemical requiring disposal. They also generate "P" or "U" wastes from product spills or disposing of a container or container liner with residues from the "P" or "U" listed hazardous wastes. Pharmaceutical industries commonly generate "P" and "U" listed wastes, especially when they are involved with reverse distribution programs with hospitals, pharmacies, and other medical facilities. CCPs included on the "P" list are all acutely hazardous, triggering full regulation as a hazardous waste if greater than 2.2 pounds are generated in a month. "U" wastes include toxic chemicals and chemicals that display a characteristic like ignitability. Michigan has the same "P" and "U" lists as the federal regulations. Michigan also has some additional state designated "U" listed waste.

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 with a "D" or ends with an "S." The five characteristics are:

Ignitable - Starts burning easily; liquids with a flashpoint below 140 degrees Fahrenheit, solids that spontaneously ignite, ignitable compressed gasses, and oxidizers. Ignitable compressed gasses are those that meet the criteria in 40 CFR 261.21(a)(3), not the criteria referenced in US DOT's regulations. This includes gases that form flammable mixtures in air. Oxidizers are materials that may, generally by

yielding oxygen, cause or enhance the combustion of other materials and is defined in 49 CFR 173.127, which is a US DOT regulation. Examples of wastes that are characteristic hazardous wastes due to their ignitability include: mineral spirits, methyl ethyl ketone, 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 - Is unstable at normal atmospheric conditions, reacts violently, and can cause serious harm to human health and the environment. Reactive hazardous wastes include materials that react violently with water, are explosive, and/or undergo rapid or violent chemical reactions and necessitate special handling requirements. For reactivity, use the same testing as is otherwise required to meet US DOT requirements. Examples of wastes that are characteristic hazardous wastes due to their reactivity include lithium hydride, air bag inflators and modules, organic peroxides, cyanides, sulfides, nitroglycerine, trichlorosilane, and explosives. These wastes have a hazardous waste number of D003.

Toxic - Poisonous to humans and other living organisms. A waste becomes regulated as a characteristic toxic hazardous waste 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 in this Chapter 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. Wastes that are a characteristic hazardous waste due to their toxicity are sometimes called toxicity characteristic leaching procedure (TCLP) wastes because a TCLP laboratory test is used to evaluate whether the waste meets the hazardous waste characteristic (see Chapter 2.4.2.c). Examples of wastes that are generally characteristic hazardous wastes due to their toxicity include: fluorescent lamps, electronic waste, lead acid 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 is 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” listed hazardous 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 subject to full regulation as a hazardous waste if greater than 2.2 pounds is generated in one month. Severely toxic hazardous wastes are assigned hazardous waste numbers 001S through 007S. Most businesses do not generate this waste.

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

US EPA Hazardous Waste Number	CAS Number	Material	Extract Concentration from TCLP analysis in milligrams/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-dimenthano 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-chlorocyclo-hexane,	0.4

US EPA Hazardous Waste Number	CAS Number	Material	Extract Concentration from TCLP analysis in milligrams/liter
		gamma isomer)	
D009	7439-97-6	Mercury	0.2
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 (C10H10C18, 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, so the quantitation limit 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. The weight of hazardous wastes managed to meet the universal waste standards are not included when determining your site's hazardous waste generator status or category each month (see Chapter 2.4.3). A primary benefit of managing hazardous waste under the universal wastes standards is that it reduces the weight of hazardous waste generated each month. As a result, this often reduces a site's generator category or status and consequently reduces the overall regulatory burden a site must meet when managing common hazardous waste types. For example, a large quantity generator of hazardous waste that manages part of its hazardous waste stream as universal waste may be able to become a small quantity generator if all the site's universal wastes are managed to meet the universal waste standards. This would result in the site being subject to fewer hazardous waste regulations, lower the site's regulatory burden, and lower the waste handler fees. The universal waste standards give facilities the choice

of handling the following waste streams as a universal waste or as a fully regulated hazardous waste tracked using the Uniform Hazardous Waste Manifest, and counting the weight of these waste streams toward the site's hazardous waste generator category:

- **Electric lamps,** or what we commonly call light bulbs, including fluorescent, high intensity discharge, light emitting diode (LED), sodium vapor, mercury vapor, neon, and incandescent lamps. A lamp is defined as the bulb or tube portion of a lighting device specifically designed to produce radiant energy. Broken lamps are not universal wastes (see Chapter 2.7.5).
- **Batteries,** including nickel cadmium dry cell (see Chapter 2.7.4) and lead acid types (see Chapter 2.7.3 which also discusses another lead acid battery management option).
- **Mercury containing devices**, including thermostats, switches, thermometers, and other devices which contain elemental mercury.
- **Pesticides**, including certain suspended, canceled, or unused pesticides.
- **Consumer electronics,** including computers, televisions, cell phones, LED bulbs, and other equipment containing circuit boards commonly found in homes (see Chapter 2.7.13).
- **Antifreeze** (see Chapter 2.7.15).
- **Pharmaceuticals** (drugs or chemical formulations intended to treat, prevent, cure, mitigate, etc. disease in humans and animals), including medications like arsenic trioxide, nicotine containing drugs, coumadin, nitroglycerine, physostigmine, phentermine, and other prescription and non-prescription drugs (see Chapter 2.7.17).
- **Aerosol Cans,** which includes all non-refillable receptacles that contain a gas compressed, liquefied, or dissolved under pressure, which has the sole purpose of expelling a liquid, paste, or powder and is fitted with a self-closing release device and contains a listed or characteristic hazardous waste (see Chapter 2.7.10).

There are two types of universal waste handlers, a small quantity handler and a large quantity handler of universal waste. Do not confuse universal waste handler types with hazardous waste generator categories (e.g., very small quantity, small quantity, and large quantity hazardous waste generators).

If a universal waste handler chooses to mix household waste or very small quantity generator hazardous waste of the same type with universal waste, the commingled waste must all be managed to meet the universal waste regulations. See Table 2.4 below which summarizes the universal waste handling requirements for small and large quantity universal waste handlers. For more detailed information on handling universal waste, see Chapters 2.4.4, 2.4.5, 2.4.7, 2.4.8, and 2.7 and the Universal Waste Guidance. Universal waste transporters and destination facilities requirements are not discussed in this guidebook. For questions about a secondary universal waste handler location or universal waste destination facility requirements, please contact EGLE District Office, Hazardous Waste Program staff.

To learn more about universal waste regulations, viewing the recorded **Waste Webinar Series** found at **Michigan.gov/EGLEEvents**.

Table 2.4 Summary of Universal Waste Handling Requirements

Issue	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 site	1 year after generated or received from another site
Accumulation[2]	Accumulate in closed containers compatible with the waste, and properly labeled (Chapter 2.7). Only consumer electronics and batteries, if not leaking, do not require closed containers.	Accumulate in closed containers compatible with the waste, and properly labeled (Chapter 2.7). Only consumer electronics and batteries, if not leaking, do not require closed containers.
Notification Required	No	Yes, use form EQP 5150
Permitted and registered transporters required to be used [3]	No, unless liquid, which must be managed to also meet the liquid industrial by-products requirements. (Chapter 2.4.10)	
Manifests or shipping papers[4]	If liquids, use shipping document or Uniform Manifest (Chapters 2.3.2, 2.4.5.a and 2.4.5.b.)	
Employee Training & Emergency Response	Yes (Chapters 2.4.12 and 6)	
Export/Import	Additional federal notification and reporting requirements (Chapter 2.4.5.d)	
Universal Waste Receiving Facility[5]	Universal waste must be delivered to a universal waste handler, a universal waste destination facility, or a universal waste foreign destination facility. Destination facility requirements vary and may require a hazardous waste license.	

[1] Once the LQH status is reached, the business must keep that designation through the end of that calendar year.

[2] Satellite accumulation standards do not apply to hazardous waste managed to meet the universal waste standards.

[3] Universal wastes that are a liquid would need to be transported by a registered and permitted transporter to meet the liquid industrial by-products regulations (Chapter 2.3). In addition, some universal waste may be regulated as US

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 US 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 US DOT requirements. Contact the MSP, Commercial Vehicle Enforcement Division at 517-241-0506, the US DOT at 517-853-5990, or visit **www.phmsa.dot.gov/hazmat** for information about US DOT requirements. Also see Chapter 4.4 for details on transport requirements.

[4] Liquid universal wastes must be shipped to meet the Part 121 liquid industrial by-products transport and shipping requirements. When manifesting universal waste that is liquid, follow the Part 121 requirements for shipping documents.

[5] For questions about acceptable receiving facilities, contact your EGLE District Office, Hazardous Waste Program staff.

2.4.1.d Hazardous Waste Exclusions, Exemptions, and Partial Exemptions

Some waste streams may meet an exclusion, exemption, or partial exclusion in the Part 111 Rules and not be fully regulated as a hazardous waste. The rule provisions are too numerous to include in their entirety in this chapter. However, the following summarizes the most commonly used options. Additional details on common waste types with multiple management options are also included in Chapter 2.7. For additional information, see US EPA's RCRA Orientation Manual at www.epa.gov/hwgenerators/resource-conservation-and-recovery-act-rcra-orientation-manual and the RCRA Training Module on exclusions and exemptions found at www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-training-module-about-solid-and-hazardous-waste. Discuss any questions you have on these options with your EGLE District Office, Hazardous Waste Program staff.

Hazardous Waste Recycling

Recycling may occur at the generator's site or off-site. Different regulations apply to companies recycling their own wastes on-site 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. As provided in Rule 303 of the Part 111 Rules, in some cases the waste may not need to be counted when determining your monthly generator category or status.

Companies that offer commercial recycling services are listed in the Recycled Materials Market Directory at **Michigan.gov/RMMD**. Vendors who assist with recycling are encouraged to register and market their services in the directory. EGLE also provides an Environmental Consultant Directory and list of vendors who assist municipalities with household hazardous waste collection that is helpful for finding disposal vendors and marketing disposal services.

Generators need to ensure the recyclers are meeting the regulations that apply to the recycling operation when selecting a recycler. For example, if the recycling company offers transportation services, ask if they meet the applicable transporter regulations to haul your type of waste and what authorization or exclusion from waste regulation they use to treat and/or store the waste. It is necessary to consider all the regulations (e.g., Parts 31, 55, 111, 115, and 121) that may apply to the recyclable 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 by-product. For example, gas removed from an abandoned underground storage tank for clean-up purposes under Part 213 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 managed as a liquid industrial by-product. See Rule 206 of the Part 111 rules and discuss your specific recycling questions with your EGLE District Office, Hazardous Waste Program staff. Other resources that may be helpful when reviewing recycling vendor options include:

- the guide for Selecting Transporters or Treatment, Storage and Disposal Facilities (TSDFs), which is also detailed in Chapter 2.4.10,
- the List of Vendors that Assist with Household Hazardous Waste Collection, and
- the Waste Data System available at **www.EGLE.State.MI.US/Wdspi**. The Waste Data System can be used to review vendors notifications, authorizations, and EGLE MMD inspection findings related to hazardous waste, liquid industrial by-products, solid waste, and scrap tires.

For questions regarding these resources and potential recycling options, contact your EGLE District Office, Hazardous Waste Program staff or the Environmental Assistance Center at 800-662-9278.

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.

Note that the hazardous waste regulations require that any exemption or exclusion claim be demonstrated by the generator of the waste and maintained as part of the generator's waste characterization record. There are also speculative accumulation limits that apply to all handlers of 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. Make sure the ultimate destination facility recycles the material you offer. This should help ensure it is a valid management option under the hazardous waste regulations. And be sure to keep inventory records to verify recycled materials are not

speculatively accumulated. See Rule 107(z) of the Part 111 Rules for the definition of hazardous waste speculative accumulation and Part 121, Section 12112(3) if the material is subject to liquid industrial by-products regulations.

On January 13, 2015, the federal "Definition of Solid Waste" regulations were revised to establish new standards for "hazardous secondary materials" that encourage the reclamation of certain materials without increasing risks to human health and the environment. Michigan adopted the federal "Definition of Solid Waste" changes into the Part 111 Rules on April 5, 2017. Michigan facilities can now reclaim certain "hazardous secondary materials" if the recycling meets the legitimacy criteria found under Rule 232 of the Part 111 Rules and the conditional exclusions provided under Rule 204(1)(aa), (bb), (cc), and (dd) of the Part 111 Rules. To learn more about hazardous secondary material recycling requirements, see the Hazardous Secondary Material Guidance and contact your EGLE District Office with questions. There have been federal judicial and rulemaking changes related to hazardous secondary materials since the initial federal rulemaking that are important to consider when considering use of this exclusion.

Empty Containers

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

- The container or the inner lining that held *nonacute hazardous waste* has had as much material removed as possible using practices commonly used to remove that material (e.g. pouring, pumping, and aspirating), ***AND*** (not or) 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.

Smaller containers can generally be emptied beyond the one inch or 3% standard. Therefore, smaller containers must be emptied to the extent possible using common practices for emptying the container type.

- 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 POTW who is authorized by EGLE under Part 31 discharge permit and there is no accumulation or storage prior to the discharge to the sanitary sewer).

- Compressed gas cylinders have been emptied to the point where the pressure in the container approaches atmospheric pressure. To ensure the container is empty, listen for audible liquids and check to see if it is clogged. If the container is clogged and has audible liquids, manage it as a non-empty container.

Wastewater Discharges to Sanitary or Combined Sewer Systems

Wastewater that contains hazardous waste and is discharged to a sanitary or combined sanitary sewer system to a publicly owned treatment works (POTW) authorized under a Part 31 discharge permit, a discharge permit by rule (see under Part 31, Part 22 Rules, Rule 2211 and Chapter 3.2.4.a), or an order issued pursuant to Part 31, is exempt from the hazardous waste regulations at the point of discharge into the sanitary or combined sewer system ***IF*** the discharge is approved by the receiving POTW (see Chapter 3.2.1). Any hazardous waste treatment or storage prior to that discharge may be subject to the hazardous waste regulations, including the land disposal restrictions (see Chapter 2.4.5.c). This exemption does not apply to any hazardous waste that is transported by truck or rail to a POTW. This exemption also does not apply to the discharge of any wastewater to a storm sewer which is strictly prohibited by law.

In November 2016, the U.S. EPA issued a memorandum and Pretreatment Factsheet on Hazardous Waste Reporting. The memorandum highlights that generators of discarded materials, when discharging a substance to a POTW that would otherwise be a hazardous waste, must submit an initial notice of the discharge activity to the receiving POTW; the EPA Regional Waste Management Director; and EGLE's Materials Management Division under 40 CFR 403.12 (p) and (j). The notification is a one-time written notice required for each waste stream being disposed to a POTW. Notices submitted to meet the Clean Water Act pretreatment requirements under 40 CFR 403.12 (p) and (j) should be mailed via U.S. Postal Service to EGLE-MMD, Management and Tracking Unit, P.O. Box 30038, Lansing, Michigan 48909-7538. For more details regarding the required report contact your POTW and see Chapter 3.2.1a. Some materials are prohibited from being discharged to the POTW for disposal under federal, state, and local ordinance. As of August 22, 2018, under new federal rules hazardous waste pharmaceuticals are prohibited from being disposed to a POTW. See Chapter 3 for additional prohibitions found under the Clean Water Act.

An exemption from the mixture rule exists if very small amounts, or de minimis amounts, of listed hazardous waste are discharged to a publicly owned treatment works (POTW) 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 minimis exemption including meeting wastewater discharge requirements. Contact your EGLE District Office, Hazardous Waste Program staff with questions about de minimis losses.

If hazardous waste is discharged to a POTW for disposal, keep a copy of the permit application or the submission to the receiving facility with their approval and records of your hazardous waste discharges for at least three years. If written authorization is not provided by the POTW, document the authorization provided for each non-domestic waste stream that is sewered for disposal. Note details of who provided approval, the waste stream description, the volume approved and the duration of the approval. See Chapter 3 for more information. Note too, if a site 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 3.4). Discuss this exemption with EGLE District Office, Hazardous Waste Program staff, WRD, Industrial Pretreatment Program staff, and your local POTW.

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.

To learn about additional exclusions, exemptions, and partial exemptions, the **Waste Webinar Series** available at **Michigan.gov/EGLEEvents.**

2.4.2 DETERMINING IF YOU GENERATE HAZARDOUS WASTE

All facilities must determine if the waste they generate meets is a hazardous waste or not. This is necessary when a waste is first generated and must be re-evaluated if changes are made that may change the nature or composition of the waste. The waste must be re-evaluated if the materials used in the process change, the process generating the waste is changed, or operational changes are made that may change the composition and nature of the waste (e.g. cross contamination from material overspray or even a change in storage temperatures that can result in a change in the nature or composition of the waste).

The regulations do not identify a specific timeframe (like annually) to re-evaluate the waste determination. As a precaution, to ensure no changes have been overlooked, periodically waste determinations should be re-evaluated. Check with your disposal vendor to see if they have timeline requirements. They generally have a retesting schedule.

Always be sure to keep any records obtained during waste determinations (i.e., test analysis results, safety data sheet (SDS), or other documentation such as product information from a supplier or manufacturer) for at least three years from the time the waste 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's guidance titled Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste for more information.

2.4.2.a Who Can Do Waste Determinations for a Business?

A business, non-profit, municipal authority, hospital, church, etc. may:

- Hire a consultant or use a disposal company's waste characterization services, but be aware that the waste generator remains responsible for meeting the waste regulations,
- Characterize the waste themselves, or
- Use a combination of in-house expertise and the expertise of a consultant and/or disposal vendor to characterize their waste and create a waste determination record.

Merely having safety data sheets (SDS) for products used or waste profiles from the receiving facility is not adequate for documenting a waste determination. To help ensure each waste determination is clearly documented, consider using the optional waste characterization form for documenting your conclusions. Keep it with the additional records like SDS and laboratory results relied upon for reaching the waste determination conclusion. This will help during any inspection and if new staff become responsible for environmental compliance.

2.4.2.b Information Used to Make the Waste Determination

Waste can be characterized using the generator's knowledge or by testing a representative sample.

Process knowledge may be used in making a listed or characteristic waste determination. Information used for making a listed waste determination may include the waste origin, composition, the process producing the waste, feedstock, and other reliable and relevant information. Information on the SDS or supplier and manufacturer literature may be useful when you have unused product needing disposal. Knowledge that may be used in making a determination that the waste exhibits one or more characteristics of a hazardous waste includes process knowledge; feedstocks and other process inputs; knowledge of products, by-products, and intermediates produced by the manufacturing process; chemical or physical characterization of the wastes; information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste; or other reliable and relevant information about the properties of the waste or its constituents. An SDS often provides information about the flashpoint, pH, and if a discarded product is a hazardous waste or contains hazardous constituents. Note, however, that an SDS is not completely reliable for determining if a used material is a hazardous waste because it does not include information about contaminants that might be in the waste from use. Since the SDS is designed to meet occupational safety requirements, it also may not include all hazardous constituents requiring evaluation under the environmental regulations. A waste stream may be presumed (by knowledge) to contain certain

constituents above regulatory thresholds for compliance purposes; however, testing may be required to adequately document a hazardous or non-hazardous waste determination.

Testing a representative sample of the waste can also be used to characterize a waste. A test method other than one set forth in the hazardous waste regulations or an equivalent method approved by EGLE's Director may be used as part of the generator's knowledge to determine if a waste exhibits a hazardous characteristic. Testing is definitive in determining whether the waste is characteristically hazardous if the test method used is specifically identified in the hazardous waste regulations or is approved by EGLE's Director, assuming a representative sample of the waste was evaluated.

2.4.2.c Testing Requirements

Before collecting samples and submitting them for testing, contact your disposal company to ensure you perform the correct tests. The disposal company might require specific tests or may only accept analysis data from specific laboratories. Ask the disposal company for a list of the test(s) they require, the purpose of the tests, approved testing methods, and acceptable laboratories. This 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 which is discussed in further detail below. 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 EGLE's, Remediation and Redevelopment Division staff.

> To find an EGLE certified laboratory performing chemistry, microbial, or radiological analyses, go to **Michigan.gov/EGLELab** and select "Certifications" then select "Drinking Water Analysis Laboratory."

It is wise to obtain estimates from two or more laboratories. 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 US DOT labeling and shipping requirements. US DOT questions can be directed to Michigan State Police, Commercial Vehicle Enforcement Division at 517-284-3250 or the US 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.d 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 U.S. EPA's publication "SW-846" at **epa.gov/hw-sw846**.

The paint filter test is U.S. EPA Method 9095B 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 liquid industrial by-products.

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 or reach surface water. The testing procedure 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. This list is also found in Table 2.3 above. 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 that 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 none of the theoretical concentrations equal or exceed the regulatory limits, 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, refer to U.S. EPA's TCLP Questions for use of totals analysis. For additional U.S. EPA information on use of totals analysis for waste characterization, go to epa.**gov/rcraonline** and search for "Total Waste Analysis."

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.e Steps When Doing Waste Determinations

As described in Chapter 2.1, sites generating hazardous waste need to conduct a waste survey to identify all of the waste streams generated across the entire site. You need to look at all activities occurring at the site. Hazardous waste is generated in office buildings, as well as commercial, industrial, agricultural activities, etc. Hazardous waste (and liquid industrial by-products, see Chapter 2.3) can also be incidentally generated from building expansions, renovations and/or property maintenance activities. It all needs to be considered to determine the regulations that apply when handling waste. Often new materials get overlooked and can have a significant impact on the handling requirements and disposal costs. As such, it is important to put procedures in place that provide for evaluating new products before purchase and use. This will help reduce a site's regulatory burden and reduce cost as it will help with recognizing the site's cost implications associated with use of the new materials.

The following list identifies some commonly overlooked hazardous waste streams. The reason(s) why the waste stream may be hazardous is noted in parenthesis:

- Spent fluorescent tubes, LED, or other lighting fixtures (toxic for mercury), see Chapter 2.7.5.

- Solar panels (toxic for metals), see Chapter 2.7.20.
- Undeployed airbag modules or inflators (reactive)
- 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), see Chapter 2.7.8.
- Spent activated carbon media, included in some air filters and other equipment (contains "F" listed solvents).
- Used solvents with low flashpoint (toxic, ignitability) and used solvents with high flashpoints (toxic for metals).
- 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, corrosive).
- Solvent-based adhesives (toxic, ignitability).
- Antifreeze (may be toxic for lead).
- Dry cleaning solvents with a flashpoint above 140 F (may be toxic for chrome).
- Batteries - lead acid and dry cell (toxic for lead, cadmium, 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).
- Pharmaceuticals (may be toxic for mercury, creosol, silver and others or contain "U" or "P" chemicals).
- Medical kits containing mercury thermometers or antiseptics containing mercury (toxic).

Identify if the material can be used "as is" without any processing, filtering, etc. and can be used as a product and not be disposed of as a waste. Use business connections to find another company to use the product or check the Michigan Materials Marketplace at **Michigan.MaterialsMarketplace.org** to find use options. The Michigan Materials Marketplace is designed to help businesses find commercial use options for unwanted materials that may have continued use options. However, make sure any use opportunity you find aligns with the

hazardous waste regulations. Confirm it is a legitimate option not subject to hazardous waste regulation as discussed in Chapter 2.4.1.d and be sure to discuss your use option with EGLE District Office, Hazardous Waste Program staff, to confirm your waste determination.

Consider the information shared in this chapter and follow the steps below when making a waste determination.

STEP 1 Is the Waste a Listed Hazardous Waste?

As discussed in Chapter 2.4.1.a, to be considered listed waste, either the chemical or the process used to generate the waste is specifically listed in the Part 111 rules.

- **F Codes** are found in Table 203a and include hazardous waste streams generated by many different types of commercial and industrial operations like spent solvents used in degreasing and metal plating activities.
- **K Codes** are found in Table 204a and include specific types of wastes generated from industries like petroleum or chemical refining, wood treatment operations, and pesticide manufacture.
- **P and U Codes** are found in Tables 205a-c and include unused commercial chemical products (CCPs) (chemical grade products), off-specification CCPs, and CCP container and spill residues for chemicals like formaldehyde, parathion, benzene, DDT, xylene, and certain pharmaceuticals like arsenic trioxide, nicotine, and warfarin.
- **S Codes** are found in Table 202 and include wastes that contain dioxins and furans.

You also need to keep in mind that all codes with a "P" in their hazardous waste number are considered acutely toxic hazardous wastes. All codes with an "S" in their hazardous waste number are severely toxic. All codes with an "(H)" in the "Hazard Code" column to the right of the waste description are also acutely toxic hazardous wastes. This information is important when evaluating the amount of hazardous waste generated monthly and making a generator category determination. To determine if you have a listed hazardous waste, you have to look at all of the listings and see if any apply. Check the rules to determine whether you have a hazardous waste specifically listed in the rules and after making a listed hazardous waste determination, proceed to step 2.

STEP 2 Does the Waste Exhibit a Characteristic that Makes it a Hazardous Waste?

After reviewing the waste for being listed in step 1, review whether it exhibits a characteristic or characteristics that make it a hazardous waste. This will ensure you recognize all the hazards associated with the waste and have it labeled to meet the various labeling requirements that may apply. A waste can be subject to hazardous waste regulation as a characteristic hazardous waste if it is determined to be ignitable, toxic, corrosive, reactive, or severely toxic as defined under Rule 212 and discussed in Chapter 2.4.1.b above. Make sure you

have adequate records to use knowledge to make your determination and that any testing is performed using the test procedure(s) specified in the rules and discussed in Chapter 2.4.2.b and 2.4.2.c, above.

After determining if the waste is a listed hazardous waste and whether it exhibits a characteristic or characteristics that make it a hazardous waste, proceed to step 3.

STEP 3 Is the Waste Specifically Excluded, Exempted, or Partially Exempted from the Hazardous Waste Regulations?

The hazardous waste regulations include many exclusions, exemptions and partial exemptions. Some are designed to prevent regulatory overlap, some to encourage waste minimization, others to promote safe reclamation and recycling. They were also designed to provide regulatory relief for generators who focus on sustainable options, who generating less waste and/or less toxic materials.

Review if there is an exclusion, exemption, or partial exemption that applies to the waste stream. These are discussed in Chapter 2.4.1.c and 2.4.1.d. To see a complete list of the exclusions from hazardous waste regulation, see the Part 111 Rules. Also keep in mind that the exclusions and exemptions are specific. They rely on waste generators, handlers, and destination facilities all meeting all of the exemption/exclusion conditions. If all the conditions are not met, it leaves all parties liable for mismanagement. If the waste is a listed and/or characteristically hazardous waste, skip forward to Step 5. If the waste is neither a listed nor characteristic hazardous waste or is excluded, exempt, or partially exempt from hazardous waste regulation, continue to step 4.

STEP 4 What Other Waste Regulations Apply?

Does the waste contain free liquids? If it does, it generally is subject to regulation as a liquid industrial by-product under the Michigan liquid industrial by-products regulations. The paint filter test or test method 9095 found in U.S. EPA's publication SW-846 is used to determine if a waste is a liquid industrial by-product. The test evaluates the presence of free liquids in a representative sample. When testing, a predetermined amount of the waste 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 is considered to contain free liquids and is subject to regulation as a liquid industrial by-product.

Like the hazardous waste regulations, there are exclusions intended to prevent regulatory overlap and to encourage recycling and safe management of liquid industrial by-products. The liquid industrial by-products exclusions are found in sections 12101(n) and 12102a of the liquid industrial by-products statute. Materials like fats, oil and grease, septage, biosolids, medical waste, and sanitary sewer clean-out waste may be regulated under other regulations designed to protect public health and the environment. Liquid waste exempted or partially exempted from the hazardous waste regulations must be managed to meet the liquid industrial by-products

regulations unless it is specifically excluded from being subject to the liquid industrial by-products regulations. See more about liquid industrial by-products and exemptions from those standards in Chapter 2.3, above.

Generally, only domestic wastewaters from cooking, laundry and bathing can be discharged to an on-site septic system. To discharge other, non-domestic wastewaters (e.g. any commercial or industrial wastewaters) to an on-site system, a groundwater discharge permit is needed unless the specific discharge is permitted by rule under the water resource protection regulations. Contact EGLE's Groundwater Permit Program staff for more details regarding on-site disposal of non-domestic wastewaters.

Is the waste a non-hazardous solid waste, scrap tire, or a special waste like asbestos, polychlorinated biphenyl (PCB) waste, medical waste, or a radioactive waste? If the waste is not a hazardous waste or a liquid industrial by-product, it is generally a solid waste. However, there are other waste environmental regulations to consider. Handling of asbestos and PCB waste is subject to additional regulations under the federal National Emission Standards for Hazardous Air Pollutants and the federal Toxic Substance Control Act. There are also solid waste exclusions that provide for safe use of some materials in specific circumstances. See Chapter 1 for additional asbestos details, Chapter 4 for additional PCB details and Chapter 10 for additional details on radioactive materials.

After determining if the waste is a liquid industrial by-product, solid waste, or subject to other waste regulations proceed to step 5.

STEP 5

Create and Maintain a Characterization Record for at Least Three Years form the Date the Waste was Last Shipped Off-site.

When documenting your characterization determination, use a form that includes the following basic information and follows the steps and questions used when making a waste characterization determination. It will make it easier to document your conclusions and to discuss your characterization determination with your recycling/disposal vendor and EGLE inspection staff:

- Name of person completing form
- Date form was completed
- Waste description
- Waste type
- Narrative description of the waste
- Waste source
- Waste codes
- Waste sample details {sample date(s), sample location(s), sample collection procedure(s), lab analysis method(s), etc.}
- Product name(s) for Safety Data Sheet(s) (SDSs) considered
- Subpart AA, BB or CC applicability determination
- Land disposal restriction underlying hazardous constituents, if applicable

Include copies of all supporting sample reports, SDS(s), waste profiles, and other reference materials relied upon to reach your characterization determination. After creating a waste characterization record for each waste stream, proceed to step 6.

STEP 6

Recharacterize if the Process, Materials or Material Handling Causes a Change in the Waste.

If the materials used at the site change, the processes that produce the waste changes, or the nature of the waste changes due to storage and/or handling conditions, the waste must be re-evaluated. This is critical to consider and requires planning and forethought and often results in compliances issues. Do not overlook this step when establishing practices and procedures!

2.4.2.f Additional waste determination resources

- RCRA Online is a compendium of U.S. EPA correspondence related to RCRA. RCRA Online allows the user to search based on topic, word, title, author, recipient, statutory citation, among other criteria.
- Look for free on-line alternatives where waste characterization data is shared like U.S. EPA's pharmaceutical wiki at **http://hwpharms.wikispaces.com** developed for pharmacists to share their determinations.
- U.S. EPA – "Hazardous Waste Generator Regulations A User-Friendly Reference Document."
- U.S. EPA "Guide for Industrial Waste Management, Chapter 2 Characterizing Waste."
- 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 U.S. EPA's Envirofacts Datasets and safety data sheet (SDS) information to search for chemical and hazardous waste information. SDS 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."

2.4.3 HAZARDOUS WASTE GENERATOR STATUS & REQUIREMENTS SUMMARY CHART

Under the regulations, businesses must evaluate their generator category or status on a continual basis. A site's hazardous waste generator category, as specified in Rule 303 of the Part 111

Rules, is based on:

1. The total weight of the hazardous waste generated each calendar month at the site and
2. The weight of hazardous waste accumulated at the site at any one time.

It is of utmost importance for a generator of hazardous waste to be able to provide information that verifies the site's generator category because this information is required to determine the handling and disposal requirements that apply to any waste generated. The more hazardous waste generated in a month, the more regulations that apply. As a site generates more hazardous waste, it is subject to more regulatory requirements to ensure public health and the environment are protected. To minimize the regulations that apply, it helps to initiate sustainability measures that minimize the volume and toxicity of the waste generated.

Facilities that periodically generate large volumes of hazardous waste are recommended to either meet the more onerous regulatory requirements to ensure compliance is maintained or meet the episodic generator requirements. Generators are allowed one planned or unplanned episodic event annually and cannot generate more than 13,200 pounds (6,000 kilograms.) of nonacute hazardous waste during an event. A generator may petition for a second event; however, the second episodic event cannot be the same as the first episodic event (if the first event in the calendar year was planned, the second must be unplanned and vice versa). (Chapter 2.4.13).

Table 2.5 provides a summary of the different generator categories and Table 2.6 provides a summary of the hazardous waste generator requirements for the different generator categories.

Generators must notify EGLE of their generator category or status and other waste handling activities when applying for a **Site Identification Number**, also known as Site ID or EPA Number, EPA Handler ID, 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 category they operated at during the previous calendar year. The fees increase as the business generates more hazardous waste. For each of the generator categories, there are accumulation time limits and volume limits. If the generator does not exceed the specified limits, a hazardous waste storage operating license is not required.

When calculating a site's hazardous waste generator category, use the results from the sitewide waste survey (Chapter 2.1) and the waste determinations made as a result of the survey (see Chapter 2.4.2). **DO COUNT** the weight of VSQG hazardous waste. **DO NOT COUNT** the weight of the following waste streams when determining the monthly generator category:

- Waste that is not a listed or characteristic hazardous waste.
- Hazardous waste that is being managed as a universal waste (see Chapters 2.4.1.c and 2.7.d, 2.7.e, and 2.4.m, 2.7.o, and 2.7.q).
- Hazardous secondary materials managed to meet the legitimacy criteria for reclaimed recycled materials and the conditional exclusion provisions for hazardous secondary

materials (see Chapter 2.4.1.d)

- Laundered and reused shop towels or textiles and disposable solvent wipes managed to meet the conditional hazardous waste exclusions for these materials (see Chapter 2.7.8).
- Scrap metal being recycled (see Chapter 2.7.16).
- Some materials being recycled such as used oil and filters (see Chapter 2.7.1, and 2.7.2) and lead acid batteries (see Chapter 2.7.3).
- The remaining residue in "empty containers" (see Chapter 2.4.1.d).
- See Rule 206, Rule 503, and Part 8 of the Part 111 Rules for additional wastes that are recycled, reclaimed or treated on-site which are not counted.
- Materials that are being reused "as is" as an approved product replacement.
- Liquid Industrial By-Products.

Please note that exempted VSQG hazardous waste must always be counted.

Generators who generate acute or severely toxic hazardous waste and nonacute hazardous waste in the same calendar month must determine the generator category by counting separately the total amount of acute hazardous waste, severely toxic hazardous waste, and nonacute hazardous waste generated in the calendar month.

Keep in mind that different activities at the site may change the site's generator category. For example, when a site 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 category unless specified otherwise under Rule 303 of the Part 111 Rules. See the Emptying Tanks or Containers guidance for more information.

A simple written log like the following can be kept to verify how much hazardous waste is generated each month. This provides documentation to support the generator category determination at the time of inspection.

Waste Paint Solvent

Date waste added:	How much added:	By:	Monthly running total
1/3/06	1 gal	George G.	1 gallon
1/15/06	9 gal	Pat M.	10 gallons
2/9/06	2 gal	Sammy Jo	2 gallons

Again, a site can lower its hazardous waste generator category and the regulatory requirements it must meet if waste minimization and pollution prevention practices are implemented (see Chapter 2.1). Moreover, when signing a Uniform Hazardous Waste Manifest (see Chapter 2.4.5), the person signing the manifest must certify that:

- the site has taken efforts to reduce the amount and toxicity of the waste generated at the site and
- they are personally familiar with the site-specific pollution prevention efforts.

If a disposal company or transporter is preparing a site's shipments, be sure they are trained in your site-specific pollution prevention efforts and able to certify those details when offering your waste for shipment.

Since the waste management requirements are based on the total weight of hazardous waste generated in a calendar month, you may need to convert the amount of waste generated in gallons to pounds or kilograms to determine the site's generator category. 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 SDS information in your calculations. The specific gravity, also called the relative density, can be found in the "Physical & Chemical Properties" section of the SDS. It is a unitless 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.

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

Generator Category	Maximum amount of nonacute hazardous waste generated per month	Approximate maximum volume of nonacute hazardous waste generated per month	Maximum amount of acute or severely toxic hazardous waste generated per month	Maximum amount of contaminated soil, water or other debris from clean-up of acute or severely toxic hazardous waste generated per month
VSQGs	≤ 100 kilograms (220 lbs.)	≤ half a 55-gallon drum or ≤ 25 gallons	≤ 1 kilogram (2.2 lbs.)	≤ 100 kilograms
SQGs	> 100 kilograms (220 lbs.) but < 1,000 kilograms (2,200 lbs.)	> half a 55-gallon drum and < five 55-gallon drums or >25 gallons and < 250 gallons	≤ 1 kilogram (2.2 lbs.)	≤ 100 kilograms (220 lbs.)
LQGs	≥ 1,000 kilograms (2,200 lbs.)	≥ five 55-gallon drums or ≥ 250 gallons	> 1 kilogram (2.2 lbs.)	> 100 kilograms (220 lbs.)

Generator category is determined using the limits in the Hazardous Waste Generator Category table above from Rule 303 of the Part 111 Rules. If acute or severely toxic hazardous waste and nonacute hazardous waste are generated in the same calendar month, count separately the total amount of nonacute hazardous waste; the total amount of acute hazardous waste; the total amount of severely toxic hazardous waste; and contaminated soil, water, or other debris from clean-up of acute or severely toxic hazardous waste generated in the calendar month, and compare the amounts to the generator categories found in the table above. Make sure all hazardous waste generated across the site has been accurately characterized and included when determining generator status, including any waste treated on-site.

TABLE 2.6 Summary of the Hazardous Waste Generator Accumulation Requirements

Requirement:	VSQGs	SQGs	LQGs
Acceptable off-site treatment, storage or disposal destination for waste	Licensed solid waste disposal facility (solids), liquid industrial by-product designated facility (liquids), licensed or exempt recycler, licensed hazardous waste facility, or LQG under the control of the same person as the VSQG. Also, universal waste handler or 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.
Maximum time period before waste must be shipped off-site	No time limit if accumulation of 1,000 kilograms (2,200 lbs.) of nonacute, 1 kilogram (2.2 lbs.) of acute or severely toxic, and 100 kilograms (220 lbs.) of contaminated soil, water, or other debris from clean-up of acute or severely toxic is never exceeded.	180 days, unless shipping over 200 miles, then 270 days. Storage beyond this time period requires a hazardous waste license unless an extension meeting Rule 306(3) or (4) has been granted by EGLE under Part 111 Rules.	90 days. Storage beyond this time period requires a hazardous waste license. unless an extension meeting Rule 307(1)(a) has been granted by EGLE under the Part 111 Rules.
Maximum amount of hazardous waste that can be *accumulated* on-site	1,000 kilograms (2,200 lbs.) of nonacute, 1 kilogram (2.2 lbs.) of acute or severely toxic, and 100 kilograms (220 lbs.) of contaminated soil, water or other debris from the clean-up of acute or severely toxic. If >1,000 kilograms (2,200 lbs.) nonacute, subject to SQG requirements unless the site meets Rule 316 episodic generator requirements under the Part 111 Rules. If >1 kilogram (2.2 lbs.) of acute or severely toxic or if exceed 100 kilograms (220 lbs.) of contaminated soil, water or other debris from clean-up of acute or severely toxic hazardous waste generated per month, subject to LQG requirements, unless the site meets the Rule 316 episodic generator requirements under the Part 111 Rules.	6,000 kilograms (13,200 lbs.) of nonacute, 1 kilogram (2.2 lbs.) of acute or severely toxic, and 100 kilograms (220 lbs.) of contaminated soil, water, or other debris from the clean-up of acute or severely toxic. If >6,000 kilograms (13,200 lbs.) nonacute, requires a hazardous waste license for storage. If >1 kilogram (2.2 lbs.) acute or severely toxic, or 100 kilograms (220 lbs.) for contaminated soil, water, or other media from the clean-up of acute or severely toxic, subject to LQG requirements, unless the site meets Rule 316 episodic generator requirements under Part 111 Rules.	No maximum amount.

Requirement:	VSQGs	SQGs	LQGs
On-site treatment, disposal, and waste analysis plan	VSQGs can treat on-site and are not subject to Rule 503 of the Part 111 Rules. Facilities with waste discharges to a municipal sanitary sewer system authorized under the Clean Water Act (CWA) by the receiving facility may require records of disposal and need wastewater operator certification depending on process.	On-site treatment is allowed without a hazardous waste license if conditions in Rule 503 or Rule 206 of the Part 111 Rules are met. Facilities with waste discharges to a municipal sanitary sewer system authorized under the CWA by the receiving facility may require records of disposal and need wastewater operator certification depending on process. SQGs doing on-site treatment must have a Waste Analysis Plan and keep records to meet Land Disposal Restrictions.	On-site treatment allowed without a hazardous waste license if conditions in Rule 503 or Rule 206 of the Part 111 Rules are met. Facilities with waste discharges to a municipal sanitary sewer system authorized under CWA by the receiving facility may require records of disposal and need wastewater operator certification depending on process. LQGs doing on-site treatment must have a Waste Analysis Plan and keep records to meet Land Disposal Restrictions.
Notification and Site/EPA identification number	No, unless the site has an episodic generating event and uses Rule 316 of the Part 111 Rules to maintain the VSQG category.	Yes, and starting 2021, renotification is required every four years.	Yes, and renotification is required during Biennial Reporting every even numbered year.
Accumulation area inspections	No, but recommend meet SQG requirements. May be subject to other regulations depending on waste.	Yes, weekly container and tank inspections required along with written inspection log.	Yes, weekly container and daily tank inspections required along with written inspection logs.
Labeling requirements	Yes	Yes	Yes
Secondary containment requirements	No	Yes, if ever accumulate 1,000 kilograms (2,200 lbs.) or more at any time.	Yes
Air emissions control for volatile organic compounds hazardous wastes	No	No	Yes

Requirement:	VSQGs	SQGs	LQGs
Uniform Hazardous Waste Manifest	No - Shipping document is required for VSQG liquids. This includes VSQG liquids shipped to controlling LQG for consolidation. Manifests are optional. A manifest is required for VSQGs liquids managed as an episodic generating event under Rule 316 of the Part 111 Rules. US Department of Transportation (US DOT) shipping document requirements must also be met if shipping a US DOT hazardous material.	Yes – Manifest required, unless SQG meets tolling agreement. US DOT shipping document requirements must also be met if offering a US DOT hazardous material.	Yes – Manifest required. US DOT shipping document requirements must also be met if offering a US DOT hazardous material.
Land disposal restriction records	No	Yes	Yes
Contingency plan	No - Meeting SQG requirements is recommended. US DOT security plan if shipping excess of 1,000 lbs. hazardous waste.	Yes - Written plan required and emergency arrangements with local responders must be documented. Plan quick reference guide recommended. Basic plan and emergency posting by phones and/or hazardous waste handling areas is required. *US DOT* security plan if shipping excess of 1,000 lbs. hazardous waste.	Yes - Written plan required and emergency arrangements with local responders must be documented. Plan requires a quick reference guide. US DOT security plan if shipping excess of 1,000 lbs. hazardous waste.
Emergency procedures	No - Meeting SQG requirements is recommended.	Yes	Yes
Personnel training	No – Meeting SQG requirements is recommended. US DOT training required when shipping hazardous waste. Michigan Occupational Safety and Health Administration (MIOSHA) training may also be required.	Yes – Basic training required and must be documented. US DOT training required when shipping hazardous waste. MIOSHA training may also be required.	Yes – Extensive training required annually, and training must be documented. US DOT training required when shipping hazardous waste. MIOSHA training may also be required.
Requirements to use licensed and registered transporter	Self-haul option or licensed and registered transporter of liquid industrial by-products.	Licensed and registered hazardous waste transporter.	Licensed and registered hazardous waste transporter.

Requirement:	VSQGs	SQGs	LQGs
Waste minimization requirements	No - Meeting SQG requirements recommended.	Yes	Yes
Annual handler fees	No, unless site has an episodic event subject to Rule 316 of the Part 111 Rules.	$100 user charge, unless experience an episodic event subject to Rule 316 of the Part 111 Rules, then $400.	$400 user charge when generates < 900,000 kilograms in calendar year; OR $1,000 user charge when generates ≥ 900,000 kilograms in the calendar year
Hazardous waste/biennial report	No	No.	Yes, LQGs consolidating VSQG waste must also report consolidation activities.
Used Oil Biennial Report See summary	Not required for VSQGs. 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.	Not required for SQGs. 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.	Not required for LQGs. 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.
Annual import/export report	Yes, for hazardous and universal wastes.	Yes, for hazardous and universal wastes.	Yes, for hazardous and universal wastes.
US DOT transport requirements	Yes, when required by US DOT.	Yes	Yes
Closure of accumulation areas	Yes – Meet Part 201 of Act 451 cleanup requirements.	Yes – Must remove all hazardous waste from tanks, discharge control equipment, and discharge confinement structures and manage it as a hazardous waste. Meet cleanup standard authorized under Part 111 of Act 451.	Yes – Notification required 30 days prior to closing and 90 days after closing to certify that closure performance standards that were achieved. Meet cleanup standards authorized under Part 111 of Act 451.

[1] May also be subject to other emergency planning and training regulations in Chapter 6.

2.4.4 SITE IDENTIFICATION NUMBERS

Businesses are required to have a unique Site Identification Number (Site ID) assigned to each site that engages in regulated waste activities. Some people refer to this as a Site ID, EPA ID, EPA Handler Number, or EPA Number. A Site ID is required of:

- Hazardous waste large quantity and small quantity generators.
- Hazardous waste and liquid industrial by-products transporters.
- Liquid industrial by-products designated facilities.
- Liquid industrial by-products generators utilizing the e-Manifest system.
- Hazardous waste treatment, storage, and disposal or destination facilities, including hazardous waste fuel burners and marketers.
- Universal waste large quantity handlers and destination facilities.
- Used oil collection/aggregation sites, transporters, processors, re-refiners, burners, and marketers.

If it isn't known for sure if a business has a Site ID, or what activities are on file, search the **Waste Data System** (WDS) at **www.EGLE.State.MI.US/Wdspi**. If you don't know the Site ID, select the "Advanced Search" option, and enter only the street number and city, then select "Run Query." By searching on an address, you avoid getting no matches when the site may be in the system under one name, but commonly known as something else. If you know the Site ID Number, type that in the "WDS Quick Search" field. If you need help or do not have internet access, call your EGLE District Office, Hazardous Waste Program staff or the Environmental Assistance Center at 800-662-9278.

See the information posted on the Waste Data System (WDS) web page at **EGLE.State.MI.US/Wdspi** about applying for a Site ID Number. If an existing site needs to update information on file with EGLE, Hazardous Waste Program, they should complete the Site ID Form (EQP 5150) and select submitting a subsequent notification in Section 1, Reason for Submittal. Facilities needing a new Site ID Number also must file the Michigan Site ID Form (EQP 5150), but they select the obtaining an initial notification in Section I, Reason for Submittal). For Michigan facilities, this form replaces U.S. EPA's Notification of Regulated Waste Activity Form 8700-12, U.S. EPA's Hazardous Waste Permit Part A Form 8700-23, and U.S. EPA's Notification Identification and Certification Form 8700-13A/B. The Site ID Form is also used in conjunction with the Michigan Hazardous Waste Treatment, Storage and Disposal Facilities Operating License Application Form (EQP5111). The Site ID Form (EQP 5150) is no longer used to notify of PCB waste management activities. For information about notification for PCB activities, please see Chapter 4, Section 4.5. When a Site ID 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.

Use only the current version of the Michigan Site ID Form (EQP 5150) available at

Michigan.gov/EGLEWaste. If you are uncertain about whether you have the correct form or if you need a different Site ID Number, or have questions about hazardous waste and liquid industrial by-products management, contact your EGLE District Office, Hazardous Waste Program staff or call the Environmental Assistance Center at 800-662-9278.

When submitting the form, make sure your form is filled out completely and correctly. Sign the certification section and mail or e-mail the form to the address or link listed on the form. If paying on-line, mail or e-mail 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 MI0 or have a Michigan identification number which has a prefix MIG, MIH, or MIP.

TIP: Make sure to completely fill out the EQP 5150 form. Some commonly missed fields are the tax number,day, month and year in the approximate date when your company became owner or operator, signature, email, and applicable NAICS codes. Find the NAICS codes at **naics.com**.

As of August 3, 2020, small quantity generators of hazardous waste are required to re-notify of their hazardous waste activities every four years using the Site ID Form (EQP 5150). The purpose of the re-notification requirement is to improve the SQG universe data and to maintain more accurate data into the future for outreach, compliance assistance and oversight activities. The first re-notification was due September 1, 2021, and each re-notification is required every four years thereafter (e.g., September 1, 2025, September 1, 2029, etc.).

A site may also need to update notification information previously submitted if there are changes in the site's regulated waste activities. Be sure to check all the boxes that apply to the site's regulated waste activities and answer all sections in pages 1-7. Examples when a new or updated notification is required for changes in operations include:

- A company that had previously only shipped used oil and had a Site ID Number, but now also generates hazardous waste in amounts making the site a small quantity generator or large quantity generator. Check the appropriate box in Section 12, Item 1 for hazardous waste generator activities and check the box for liquid industrial by-product generator in Section 13. In Section 12, also list all of the waste codes for the federal hazardous wastes handled at the site in the order the waste codes are presented in the regulations (e.g., D001, D002, F007, U112). If the site is operating as a large quantity hazardous waste generator and accepts hazardous waste from one or more very small quantity generators that they own for consolidation, also:
    - Select "Y" in Section12, Item 5 designating the site receives hazardous waste from off-site,
    - Select "Y" in Section 16 indicating the LQG is consolidating VSQG waste from sites that are owned by the LQG, and
    - Complete the addendum for the consolidation activities on page 10.

- A company moves to a new location and will be generating hazardous waste in amounts making the site a small quantity generator or large quantity generator at the new site. Search the Waste Data System at **www.EGLE.State.MI.US/Wdspi** to see if the new location has already been assigned a Site ID. If a Site ID exists for the new location, complete the form and include the new location's existing Site ID on the form.
- A company no longer generates hazardous waste at a site that previously required a Site ID Number for the hazardous waste, but the company is still in operation at that site. Check the box in Section 1 that states the site is still in business and the regulated activity is (generating hazardous waste) is no longer occurring.
- 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 13. for the used oil collection center or aggregation point that accepts DIY used oil and the liquid industrial by-product generator activities.
- A company handles total accumulated amount of 11,000 pounds or more of all universal wastes. Check appropriate boxes in Section 13 for the types of universal waste handled at that location.
- A facility accepts liquid industrial by-product from other sites. Check the box in Section 13. for liquid industrial by-product designated facility activities.
- A facility accepts hazardous waste from very small quantity generators of hazardous waste that includes both liquids and solids exempted from full hazardous waste regulation. Check the box in Section 13 for liquid industrial by-product designated facility activities.

A facility may have an identification number issued under a different program, such as a medical waste registration number issued by EGLE's Medical Waste Regulatory Program or a federal identification number for PCBs assigned by U.S. EPA's TSCA Program. The TSCA number may be used on a Uniform Hazardous Waste Manifest but **ONLY** when shipping waste specifically regulated under the TSCA program. Shipments of regulated hazardous waste require the use of the Site ID Number issued by EGLE's Hazardous Waste Program, or previously issued by U.S. EPA for hazardous waste activity.

2.4.5 UNIFORM HAZARDOUS WASTE MANIFESTS AND SHIPPING RECORDS

The following summarizes the Uniform Hazardous Waste Manifest and shipping records requirements under the waste regulations. See Chapter 4.4 for additional shipping requirements overseen by the Michigan State Police related to **hazardous materials-USDOT** and Chapter 4.5 for information on shipping waste containing PCBs. EGLE has a generator tracking log to help with tracking waste shipments and recordkeeping. Customize this form to make waste tracking easier.

2.4.5.a Uniform Hazardous Waste Manifests and Liquid Industrial By-Products Shipping Documents

When completing shipping documents, you need to know the type of waste you are shipping (e.g. hazardous waste, liquid industrial by-product, or solid waste, etc.), and to understand what information that must be recorded on what form and available for review upon request during an inspection.

As of July 1, 2018, U.S. EPA requires the use of the e-Manifesting system for shipments of hazardous waste, which is found on the RCRAInfo website. Generators should create an account for all facilities under their control and set up staff permissions by following the instructions found in RCRAInfo Industry Application Help and Guidance document. It is highly recommended that at least two site managers be assigned to each facility.

Hazardous Waste Shipped from SQGs and LQGs

When shipping hazardous waste from a small quantity or large quantity generator of hazardous waste, the Uniform Hazardous Waste Manifest (U.S. EPA Form 8700-22) must be used and the form must be completed in accordance with the manifest instructions and e-Manifest process. The manifest tracks the shipment from cradle to grave or the point of generation to its final destination. When shipping hazardous waste from a small quantity or large quantity generator, the generator, the transporter, and the receiving hazardous waste TSDF each must sign and keep a copy of the manifest as they handle the waste. The only exception to using a Uniform Hazardous Waste Manifest for fully regulated hazardous waste is when the hazardous waste is recycled and reused under a "tolling agreement" between a small quantity generator and the recycler. Under a tolling agreement, the following provisions must be met:

- 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 and the reclaimer is permitted and registered to transport liquid industrial by-product.
- 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 Chapter 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.
- The transporter must be a permitted and registered hazardous waste transporter.

Most waste companies will provide the Uniform Hazardous Waste Manifest needed for shipment and assist with completing the form or e-Manifest. The destination facility will upload any paper manifest information into the e-Manifest system upon receiving the waste. If you need to get your own forms, you must order them from a U.S. EPA registered printer. A link to the approved printers is online on the Uniform Manifest Information Website. You may contact your EGLE District Office,

Hazardous Waste Program staff with questions. If someone else prepares the manifest for you, be sure to check it over carefully to ensure it is correct as you must sign it to certify the listed information is correct. Any small quantity generator and large quantity generator of hazardous waste who signs the manifests must also meet the **hazardous material-USDOT** training and documentation requirements described in Chapter 4.4.10. There are some limited exceptions where a vendor may sign on behalf of the generator. For questions on that, please contact your EGLE District Office, Hazardous Waste Program staff. Note, due to the current use of the e-Manifest system, generators are no longer required to mail copies of manifests to EGLE.

There are time limits by which small quantity and large quantity hazardous waste generators should receive the manifest copy from the TSDF with their signature verifying receipt. This may require use of the e-Manifest system. Check with your TSDF to be sure. If you do not get your TSDF copy of the manifest with the destination facility signature within the time frames below (via hard copy or the e-Manifest system), you will need to report the matter to EGLE.

If you are a small quantity generator, a manifest copy signed by the TSDF must be received within 60 days of shipping the hazardous waste. If you have not received the TSDF copy of the manifest with the receiving facility's signature within this time frame, send an email to EGLE-MMD-Site-ID-Reporting@michigan.gov providing a copy of the manifest along with an explanation stating you have not received confirmation of the delivery from the TSDF.

If you are a large quantity generator, a manifest copy signed by the TSDF must be received within 35 days of shipping the hazardous waste. If you have not received the TSDF copy of the manifest with the receiving facility's signature on it within that time frame, contact the transporter and TSDF about the shipment. If you still haven't received a manifest copy signed by the TSDF within 45 days after shipment, file an exception report by sending an e-mail to EGLE-MMD-Site-ID-Reporting@michigan.gov.

Very Small Quantity Generator (VSQG) Hazardous Waste Liquids and Liquid Industrial By-Products

As of March 16, 2016, the use of a manifest for shipping liquid industrial by-products and VSQG hazardous waste liquids became optional. Now, a manifest, bill of lading, invoice, shipment log or other document that includes the following information, either written or electronic, is acceptable when properly distributed:

- The name and address of the generator,
- The name of the transporter,
- The type and volume of liquid industrial by-product in the shipment,
- The date the liquid industrial by-product was shipped off-site from the generator, and
- The name, address, and Site Identification (Site ID) number of the designated facility.

When using a paper manifest for shipping VSQG hazardous waste liquids or liquid industrial by-product for a site that does not have a Site ID, EGLE encourages the use of the following wording so that handlers may easily identify the regulatory status of the shipment:

- Enter "MIVSQG" for shipping very small quantity generator (VSQG) hazardous waste liquids
- Enter "MILIB" for shipping liquid industrial by-product(s)
- Enter "MIVSQGLIB" for shipping both VSQG liquid hazardous waste and liquid industrial by-product(s).

For more information about liquid industrial by-product shipping documents, please see the Liquid Industrial By-products Frequently Asked Questions.

Consider discussing any manifest exemptions or shipping document questions with your disposal vendor and EGLE's District Office, Hazardous Waste Program staff.

Manifest/Shipping Document Required Recordkeeping

Consider customizing EGLE's generator tracking log for tracking your shipments and verifying proper treatment or disposal. For manifests, be sure to keep a copy of the Uniform Hazardous Waste Manifest signed by the generator and transporter at least until the manifest documenting TSDF receipt is received, then keep the manifest copy with 3 signatures. Retaining electronic copies of these documents is acceptable for inspection purposes, including demonstrating the ability to access the documents on the e-Manifest system. It is recommended, however, to still maintain the hardcopy manifests as a backup. For VSQG hazardous waste liquids and liquid industrial by-products shipping documents, be sure to keep a copy of the shipping document with the required information, including the certifications. Also keep a record verifying the designated facility confirmed receipt. All Uniform Hazardous Waste Manifests and shipping documents must be kept by all parties (generator, transporter and receiving TSDF) and be accessible for at least three years.

2.4.5.b Universal Waste

Liquid universal waste shipments (e.g., antifreeze, pesticides, and some pharmaceuticals) need to have shipping documents to meet the liquid industrial by-products regulations (see Chapter 2.3.2). Although they are not required to be documented on a Uniform Hazardous Waste Manifest under Part 111, when liquid, they must meet the Part 121 shipping document requirements. In addition, universal wastes not accompanied by a waste manifest may still require US DOT shipping papers if the waste meets the definition of a **hazardous material-USDOT** (see Chapter 4 and **49 CFR 172** and **49 CFR 171.8**). For example, packages containing one pound or more of mercury are subject to US DOT regulation but when in a mercury containing device may be managed as a universal waste. For more details on shipping **hazardous material-USDOT,** contact the Michigan State Police, Commercial Vehicle Enforcement Division at 517-284-3250 or US DOT at 800-467-4922.

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 liquid industrial by-products shipping document requirements if it is 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 for universal waste generators 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.

Learn more about the waste regulations, including how to manage universal waste, by viewing EGLE's recorded **Waste Webinar Series** available at **Michigan.gov/EGLEEvents**.

2.4.5.c Land Disposal Restrictions

For each waste sent to a TSDF, small quantity and large quantity generators must send a one-time written notice with the initial shipment of hazardous waste to the TSDF. The notice must contain specific language advising the TSDF whether 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 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 even if the waste is destined for non-land-based disposal (incineration). For waste treated on-site prior to shipment, the generator must evaluate whether the waste meets the LDR standards at the point of generation, prior to treatment, not after. The generator 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 268.40 with the hazardous waste numbers generated at the site.

The specific treatment standards are too numerous to include in this guidebook. Go to **epa.gov/hw/land-disposal-restrictions-hazardous-waste** for more information. Also discuss your specific LDR requirements with your TSDF or local EGLE **District Office**, Hazardous Waste Program staff. Many TSDFs 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.

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 U.S. EPA. See the following rules:

- 40 CFR 262 Subpart H, Section 262.83 for hazardous waste exports.
- 40 CFR 262 Subpart H, Section 262.84) for hazardous waste imports.

Contact U.S. EPA at least 60 days before the intended date of shipment to obtain written consent. U.S. EPA's "Acknowledgement of Consent" document must accompany the shipment at all times. For hazardous waste or universal waste exportation questions, e-mail RCRANotificaitons@epa.gov or call William Damico, U.S. EPA, Region 5 importation contact at 312-353-8207.

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 U.S. EPA.

2.4.6 BIENNIAL REPORTS

If your site was a large quantity generator, a TSDF, and/or a used oil processor at any time during an odd numbered year, you are required to submit a biennial report by March 1 of every even-numbered year. This report summarizes the previous calendar year's hazardous waste and/or used oil activities at your site.

2.4.6.a Hazardous Waste Biennial Reporting

As of the 2016 reporting year, U.S EPA began collecting biennial reports from large quantity hazardous waste generators and TSDFs electronically via the Biennial Report component of the EPA RCRAInfo Industry Application (RIA). For information about hazardous waste biennial reports, go to **Michigan.gov/EGLEWaste** and select the link for "Hazardous Waste Biennial Reporting." For questions about biennial reporting, e-mail BiennialReports@Michigan.gov or call the Environmental Assistance Center at 800-662-9278. To stay updated on changes related to Michigan's biennial reporting requirements, go to **Michigan.gov/EGLEConnect** and sign up for e-mail updates related to the Materials Management Division biennial reports.

2.4.6.b Used Oil Biennial Reporting

Used oil processors, refiners, and marketers are also required to submit used oil biennial reports. Used oil generators are not required to submit used oil biennial reports. See the Used Oil Biennial Report guidance and the Liquid Industrial By-Products Reporting Web page to learn more about used oil and liquid industrial by-products reporting.

Starting in the 2018 reporting year, used oil biennial reports are to be submitted using the EQP1602 form and instructions. The hazardous waste regulations do not require annual reporting in Michigan for shipments in the United States. However, if you export hazardous waste out of the country, annual reports are required to be submitted to U.S. EPA (see Chapter 2.4.5.d).

For copies of biennial reports from 1999 to present, contact your EGLE District Office, Hazardous Waste Program staff. For copies of biennial reports from 1997 or earlier, contact the U.S. EPA, Region 5 at 312-353-5069 or 800-353-2000. Be sure to keep a copy of the biennial report in your records for at least 3 years from the due date. Current site information reported to EGLE can be viewed in the Waste Data System. Go to **EGLE.State.MI.US/WDSWPI** and search using site specific data.

2.4.7 HAZARDOUS WASTE AND UNIVERSAL WASTE ACCUMULATION ON-SITE

There are specific requirements for the accumulation of hazardous waste and universal waste. The requirements include how long the materials can be accumulated before shipping off-site and how the containers must be labeled and handled to prevent any releases. These requirements are detailed in the following sections and Table 2.7 below.

2.4.7.a Accumulation Time and Amount Limits

Hazardous waste and universal waste can be accumulated on-site in containers or tanks for a specified number of days.

TABLE 2.7: Accumulation Time and Amount Limits

Limits	VSQG	SQG	LQG	SQH	LQH
Storage Time Limit	No state time limit if don't exceed weight limits	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 Weight Limit at any time	2,200 pounds nonacute or 2.2 pounds of acute or severely toxic hazardous waste	13,200 pounds nonacute or 2.2 pounds of acute or severely toxic hazardous waste	No limit	< 11,000 pounds	No limit

If a site wants to exceed the specified accumulation period, the site 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 EGLE District Office, Hazardous Waste Program staff **PRIOR** to accumulating hazardous waste beyond the exemption period. Extension requests are submitted using an on-line form, followed by submittal of site specific details by e-mail. Extension requests are reviewed on a case-by-case basis and granted for 30-days.

Hazardous Waste

Hazardous waste must be properly accumulated at your facility to prevent contamination of the environment. Table 2.6 summarizes accumulation requirements for generators of hazardous waste. Note, if you are a very small quantity generator, you are not required by law to meet all the requirements provided you do not exceed the 2,200 pounds of nonacute 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 handling and disposal requirements. All generators are required to prevent contamination and are responsible for any contamination they cause. Very small quantity generators are recommended to practice accumulation, secondary containment, and inspection procedures like those required of the small quantity generators to provide safeguards against environmental contamination.

Universal Waste

Universal waste handlers can accumulate universal waste on-site for 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 on-site for 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 aboveground storage tanks. It can also be stored in underground storage tanks, although it is not usually practical for small quantity or very 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.

Small quantity generator tank and large quantity generator tank **inspection checklists** are available at **Michigan.gov/EGLEwaste** "Hazardous Waste," under "Forms."

Contact your local EGLE District Office, Hazardous Waste Program staff for information regarding specific hazardous waste storage tank requirements. See Chapter 2.4.8.a for used oil requirements. In addition, LARA, Bureau of Fire Service, Storage Tank Division 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.

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 or freezing temperatures and may overflow or rupture. 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 accumulation area signs alerting people of areas specifically designated for accumulating hazardous waste. However, signage is recommended because it will enhance the safety of staff, visitors, and emergency responders. "No Smoking" signs should also be posted 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, and the labels must be visible (see Chapter 2.4.8).
- Containers must be maintained in good condition.
- Any leaking containers must be replaced.
- Containers must be kept closed except when adding or removing waste
- For liquid hazardous waste, closed container means that container covers are securely affixed with a bolted ring clamp or closed snap ring, bung plugs are installed in openings, and threaded covers are screwed shut. If a funnel is routinely used, to avoid having to remove the funnel and reclose the container regularly, a threaded funnel with a one-way valve, ball valve, or funnel with a latchable, gasketed cover can be used. For solids, the container cover must have complete contact between the lid and the rim of the storage container, all around the top of the container. If the container is continuously receiving hazardous waste solids, the container must catch and retain all of the hazardous waste.

  See **Operational Memo 111-20** for more information on closed containers.

- Containers must be kept free of any liquids or residues on their exteriors.
- Containers must be compatible with the type of waste being stored in them. EGLE does not maintain a list of compatible materials, but companies can look at the safety data sheets for suggestions.
- Incompatible wastes must not be placed in the same container.
- All containers holding hazardous waste must be inspected weekly for signs of corrosion and leaks. The inspectors are looking at whether inspections have been done at least every seven days.
  - ✓ Large quantity and small quantity generators are required to keep written documentation of inspections for at least three years.
  - ✓ Very small quantity generators are encouraged to keep records.

EGLE 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 cannot meet the isolation distance, see Rule 306(1)(a) of the Part 111 rules 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.

> To learn more about EGLE's hazardous waste and liquid industrial by-products inspection process and the records inspectors will request, view EGLE's recorded Waste Webinar Series available at **Michigan.gov/EGLEevents**.

- Containers must be protected from weather and fire and secure from vandalism and physical damage such as that caused by forklifts 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 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 difference between objects and the 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.

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 such as 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 kilograms (2,200 pounds) of liquid hazardous waste and F020, F021, F022, F023, F026, and F027 listed waste.
- Large quantity generators accumulating any amount of liquid hazardous waste and F020, F021, F022, F023, F026, and F027 listed 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 of 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, 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.

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:

- 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 squirt 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 the 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 (Subparts AA, BB, and CC)

There are additional federal hazardous waste regulations regarding air emissions of hazardous waste from tanks and containers. 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, these facilities must use various monitoring and control mechanisms to meet the Subpart CC requirements which include:

- Controlling volatile organic compound (VOC) emissions from hazardous waste management activities.
- Reducing organic emissions from process vents associated with certain recycling activities and equipment that is in contact with hazardous waste that has significant organic content.
- Controlling 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 your company's requirements with your environmental consultant or your local EGLE District Office Hazardous Waste Program staff or go to the U.S. EPA's Web page for **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 the waste is not mismanaged. Labeling also helps to protect workers and emergency responders. If the contents of drums are not known, the chances of someone 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 off-site. 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. Also make note of any special precautions that must be taken, like no smoking signage would be appropriate for an area used to accumulate ignitable hazardous waste.

US DOT regulations specify which containers, packaging, labels, and placards must be used for shipping **hazardous materials-USDOT**. They also define **hazardous materials-USDOT** to include all **hazardous waste** offered for shipment by small quantity and large quantity generators of hazardous waste. The hazardous waste regulations specifically require small quantity and large quantity generators 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 US DOT shipping requirements, go to the Michigan State Police, Commercial Vehicle Enforcement Division Web page at **Michigan.gov/MotorCarrier**, US DOT's Web page at **www.FMCSA.DOT.gov**, and 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 nonacute 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 satellite accumulation. These containers must be labeled with:

- the words "Hazardous Waste,"
- the hazardous waste number(s) **OR** the chemical name for the contents, **AND**
- an indication of the contents hazards, such as waste characteristics, hazardous statement, pictogram, or National Fire Protection Association (NFPA) chemical hazard label.

See Operational Memo **111-2** for more information about satellite accumulation.

Containers must be kept closed except when waste is being added or removed. 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 of nonacute hazardous waste, or one quart of acutely or severely toxic hazardous waste is not exceeded. Once the volume meets the allowable amount, the container(s) holding the accumulation must also be:

- Labeled with that date (which would be considered the accumulation date)
- Moved into the accumulation area within three days

Academic laboratories have additional options for managing laboratory waste under Rule 313 of the Part 111 Rules. For more details on the federal academic laboratory rule adopted by Michigan, see U.S. EPA's Academic Laboratory Rule Web page and their side-by-side comparison of the academic lab rule and the satellite accumulation requirements.

2.4.8.b Labeling Hazardous Waste for Accumulation On-Site

Each container in a hazardous waste accumulation area must be maintained with labels as detailed above in Chapter 2.4.8.a. Therefore, the labeling would include:

- The words "Hazardous Waste."
- the hazardous waste number(s) **OR** the chemical name for the contents,
- 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 for nonacute hazardous waste or one quart of acutely or severely toxic hazardous waste), **AND**
- An indication of the contents hazards, such as waste characteristics, hazardous statement, pictogram, or National Fire Protection Association (NFPA) chemical hazard label.

All labeling information must be clearly visible for inspection.

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 numbers 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. Labels are available from commercial firms including mail order companies. Properly labeled containers must also include:

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

You can 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 MSP, Commercial Vehicle Enforcement Division or US DOT at 800-467-4922 for more shipping information. Also see Chapter 4.4.

2.4.8.d Labeling Universal Waste for Accumulation On-Site

You need to label the individual universal waste unit (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 Lamps," or "Waste Lamps," or "Used Lamps."
- Consumer electronics: the words "Universal Waste Electronics" or "Universal Waste Consumer Electronics."
- Batteries: the words "Universal Waste Battery(ies)," or "Waste Battery(ies)," or "Used Battery(ies)."

- Mercury-containing devices: the words ‘‘Universal Waste-Mercury Containing Equipment,” “Waste Mercury-Containing Equipment,” or “Used Mercury-Containing Equipment” or, if a mercury containing thermostat “Universal Waste-Mercury Thermostat(s),” “Waste Mercury Thermostat(s),” or “Used Mercury Thermostat(s).”
- 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 US DOT.
- Pharmaceuticals: use the original label. If unreadable, it is suggested to label as “Universal Waste Pharmaceuticals.”
- Aerosols: the words “Universal Waste—Aerosol Cans,” “Waste Aerosol Cans,” or “Used Aerosol Cans.”
- Antifreeze: the words "Universal Waste Antifreeze," "Waste Antifreeze," or "Used Antifreeze.”

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-USDOT,** then that waste has to be packaged, labeled, marked, and placarded according to the requirements under 49 CFR 172-180. Discuss your specific universal waste shipment requirements with Michigan State Police, Commercial Vehicle Enforcement Division at 517-284-3250 or US DOT at 800-467-4922.

2.4.9 RETAIL SPECIFIC RESOURCES

The federal and state hazardous waste regulations were originally enacted to address a growing problem related to industrial, manufacturing operations, and disposal of hazardous waste. However, the same regulations apply to waste streams generated in small quantities by commercial and service industries, like retailers. While industrial and manufacturing operations typically generate a limited number of waste streams in large volumes, retail often generates very small quantities of the thousands of consumer products they sell. Consumer products may need to be discarded for many reasons including damage, expiration, suspension, and recall. Considering unique retail challenges associated with the many products inventoried that may become a waste at any time in the distribution or sale process, EGLE has developed additional retail-specific resources, which can be found at **Michigan.gov/EGLERetail**.

For retailers interested in minimizing pesticide waste associated with damaged packaging, see the **Pesticide Container Repair Guide** which details how retailers can establish a pesticide container repair program that allows for sale of certain pesticide containers experiencing minor damage when repaired as specified under a U.S. EPA-approved program.

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 by-products. A transporter needs to be registered and permitted under Act 138 to haul either of these materials.

You might want to tour the TSDF 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 **EGLE.State.MI.US.Wdspi** 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 by-product** - Is the liquid industrial by-product transporter currently permitted and registered to transport liquid industrial by-product under Act 138? Is the liquid industrial by-product being taken to a facility that has notified EGLE's Hazardous Waste Program as a designated facility that accepts liquid industrial by-product? You may search the **Waste Data System** for companies that have notified as being liquid industrial by-product designated facilities and liquid industrial by-product transporters. You may also look for companies that deal with liquid industrial by-product in your phone directory under the heading "Waste Reduction, Disposal," and "Recycling Service," or for used oils search for "Oil Recycling." Keep in mind that liquid industrial by-products regulations are specific to Michigan. Out-of-state transporters are still required to be permitted and registered for any transportation performed Michigan. Out-of-state liquid industrial by-product TSDF are not subject to Michigan law and therefore are not required to be notified as a liquid industrial by-product designated facility.

3. Waste Approval - As a generator you should have a thorough understanding of the wastes generated at your site and should have characterization information for each waste generated. When choosing a TSDF, be sure to discuss their waste approval process. Does the TSDF have specific characterization or analytical requirements? If analytical is required by the TSDF, with what frequency and who will be responsible for sampling and costs? Providing a representative waste sample to a TSDF in advance, even if further analytical is not required, can sometimes prevent misunderstanding or miscommunications about the waste services.

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 receiving facility offer special services for small volumes of waste? Some transporters might not service small quantity or very 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 2.7.1 and 2.2.2)? 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 may not accept hazardous waste in certain drum types/sizes or they may require generators to mark containers with internal identification numbers prior to pick-up. It may also be wise to inquire about pricing for different size/types of containers for wastes where such alternatives could easily be incorporated and result in a cost savings.

9. Does the transporter or TSDF serve other businesses similar to yours and/or in the same geographical area? If so, obtain telephone numbers and contact these companies to evaluate the services they received. If it is feasible to have your waste pickups scheduled in conjunction with other local businesses, it may benefit the transporter and potentially reduce costs for all parties involved.

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. A hazardous waste transporter may only have waste in the transportation cycle for 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 groundwater 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 partially 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 EGLE District Office, Hazardous Waste Program staff to discuss the compliance history for prospective transporters or a TSDF or review facility files. A facility's compliance history can also be searched using the EPA's ECHO database (Enforcement and Compliance History Online)

13. Will they enter 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.

14. Removal Scheduling - How long does it typically take the transporter to schedule a waste removal, in your area? Does your facility require regular, recurring waste removals or more sporadic cleanouts? Ensuring that waste removals can be coordinated with the transporter in a timely manner to avoid exceeding waste accumulation time limits or storage capacity is important.

Very 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 using a liquid industrial by-product permitted and registered transporter. It is recommended that VSQG 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 very small quantity generators for a fee. A list of local collection sites is available at **Michigan.gov/EGLEHH**W. Your waste that is not considered a liquid (passes the paint filter test) can be disposed of at a municipal solid waste landfill if the landfill authority will accept it. A permitted and registered transporter must haul your liquid industrial by-product, unless you haul your own generated liquid industrial by-product and meet the requirements outlined in Chapter 2.3.2. The liquids would need to be solidified before being placed in a municipal solid waste landfill.

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 EGLE's 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) or to waters of the state under a National Pollution Discharge Elimination Systems (NPDES) permit. Any such discharge is only legal IF the discharge is approved by the receiving POTW (see Chapters 2.4.1.d and Chapter 3.2) or under a current NPDES permit issued by EGLE's WRD. The POTW authorization or NPDES permit should be made available for review upon inspection.

Any on-site POTW or NPDES authorized discharge only becomes excluded from regulation as a hazardous waste at the point of discharge to the sanitary sewer or waters of the state. In some cases, where the hazardous waste is immediately treated in system subject to the NPDES permit and the system meets the definition of a wastewater treatment unit, the waste is excluded from counting. See the definition of a wastewater treatment unit in Rule 109 of the Part 111 rules, search RCRA Online, and contact your EGLE District Office with questions about what qualifies as a wastewater treatment and is not counted when making a generator category determination, Also recognize that sludges removed from s wastewater treatment unit are a newly generated waste that often exhibit a characteristic or carry a listing and must be counted and managed properly.

So, Any management of the hazardous waste in advance of authorized POTW discharge or waters of the state that is not specifically excluded as specified in Part 111, Rule 303, it is subject to the hazardous waste regulations and must be counted when determining a site'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 POTW and your EGLE District Office, Hazardous Waste Program staff for more information about 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.

2.4.12.a 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, and anyone else who handles the hazardous waste. You must tailor your training specifically to the hazardous waste procedures relevant to your site and employee involvement. You must ensure that all employees are

thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities both during normal operations and in emergency situations.

Table 2.8 summarizes the training requirements under the hazardous waste regulations. Facilities may also be subject to MIOSHA training and record keeping requirements, which are not included here. See Chapter 4.4 for training requirements under the transportation regulations, including manifest training.

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 on a day-to-day basis at your site, including implementing the hazardous waste contingency plan relevant to their positions.

TABLE 2.8: HAZARDOUS WASTE TRAINING REQUIREMENTS

Aspect	VSQG	SQG	LQG
Training type	No specific requirements under hazardous waste rules	Informal training [1]	Classroom instruction, online training (e.g. computer based training), or on-the-job training with written description of training program type and amount of training[1]
Written training records	No specific requirements	Verification training occurred is required. Records must be maintained for 3 years	Required written records. ✓For employees who left company, keep records at least 3 years from last day worked. ✓For current employees, keep records until site closes.
Training Schedule	No specific requirements	No specific requirements	✓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 US DOT regulations. See Chapter 4.4.10.	This is required under US DOT regulations. See Chapter 4.4.10.	This is required under US DOT regulations. See Chapter 4.4.10.

[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, is not sufficient to meet the hazardous waste training requirements. Review EGLE's guidance on Personnel Training Requirements for Large Quantity Generators of Hazardous Waste for more information on hazardous waste training requirements.

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 contain 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
- Failing to maintain training documentation/verification for small quantity generators
- Training provided by someone who is not adequately trained or familiar with the regulations themselves

2.4.12.b 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 site.

2.4.13. Episodic Generation Options for VSQGs and SQGs

As of August 3, 2020, with Michigan's adoption of the Generator Improvement Rules, VSQGs and SQGs of hazardous waste that is managed as part of an episodic event in compliance with Part 111 is exempt from being counted toward the site's hazardous waste generator category or status.

VSQG Requirements for Planned and Unplanned Episodic Events

A VSQG can maintain their existing generator category during a planned or unplanned episodic event if the site meets the requirements specified in Rule 316 of the Part 111 Rules, and the event does not result in an accumulation of more than 6,000 kilograms (13,200 pounds) of nonacute hazardous waste at any one time on-site, If the accumulation is expected to exceed 6,000 kilograms (13,200 pounds) of nonacute hazardous waste, the site must meet the LQG requirements when the site exceeds the LQG generator category limit of 1,000 kilograms (2,200 pounds) of nonacute hazardous waste.

VSQGs are limited to one episodic event per calendar year; however, the generator may petition EGLE for a second episodic event. The second episodic event cannot be the same as the first episodic event (if the first event in the calendar year was planned, the second must be unplanned and vice versa). To maintain VSQG status during an episodic event, the VSQG must comply with the following:

- Notify EGLE of a **planned** episodic event at least 30 calendar days before the event using the Site ID form. The notification must include the start date and end date of the episodic event, the reason(s) for the event, types and estimated quantities of hazardous waste expected to be generated as a result of the episodic event and shall identify a facility contact and emergency coordinator with 24-hour telephone access to discuss the notification submittal or respond to an emergency.
- Notify EGLE by phone or email within 72 hours of an **unplanned** episodic event, followed by written notification of the unplanned episodic event using the Michigan Site ID form. The notification must include the start date and end date of the episodic event, the reason(s) for the event, types and estimated quantities of hazardous waste expected to be generated as a result of the episodic event, and identify a facility contact and emergency coordinator with 24-hour telephone access to discuss the notification submittal or respond to an emergency.
- Obtain a Site ID number, which is issued in response to submittal of the Site ID form.
- Accumulate hazardous waste in containers or tanks, not on drip pads or containment buildings.
- Containers and tanks must be in good condition and compatible with the hazardous waste inside.
- When accumulating hazardous waste in containers, the container must be labeled with:
    - the words “Episodic Hazardous Waste,”
    - a description of the hazardous waste,
    - an indication of the hazards associated with the waste that could include marking it with the hazardous waste characteristic(s) (ignitable, toxic, corrosive, and/or reactive), the hazard communication consistent with US DOT’s placards, a pictogram consistent Global Harmonization Standard for worker protection, or markings consistent with the National Fire Protection Association chemical hazard labels, **AND**
    - the date upon which the episodic event began.
- If the quantity of hazardous waste accumulated on-site ever exceeds 1,000 kilograms, accumulate the hazardous waste containers in an area that complies with the containment requirements of 40 CFR 264.175 and inspect the area weekly for leaks.
- When accumulating hazardous waste in tank(s), the hazardous waste tanks must be marked or labeled with:
    - the words "Episodic Hazardous Waste,"
    - a description of the hazardous waste, **AND**

  - an indication of the hazards associated with the waste, which could include marking it with the hazardous waste characteristic(s) (ignitable, toxic, corrosive, and/or reactive), the hazard communication consistent with the US DOT's placards, a pictogram consistent Global Harmonization Standard for worker protection, or markings consistent with the National Fire Protection Association chemical hazard labels.

- When accumulating hazardous waste in a tank(s), the generator must use inventory logs, monitoring equipment, or other records to identify the date upon which each episodic event begins and keep the records on-site and readily available for inspection.
- Tanks must be inspected at least once each operating day to ensure all applicable discharge control equipment, such as waste feed cutoff systems, bypass systems, and drainage systems, are in good working order and to ensure the tank is operated according to its design by reviewing the data gathered from monitoring equipment, such as pressure and temperature gauges from the inspection.
- When accumulating hazardous waste in a tank(s), ensure the tank(s) has full secondary containment and a leak detection system to alert personnel to leaks or implement established workplace practices to ensure leaks are promptly identified.
- When accumulating hazardous waste in a tank(s), use inventory logs, monitoring equipment, or other records to identify the date that each episodic event begins and keep the records on-site and readily available for inspection.
- Manage the hazardous waste in a manner that minimizes the possibility of a fire, explosion, or release of hazardous waste or hazardous waste constituents to the air, soil, or water which could threaten human health or the environment.
- Before transporting hazardous waste or offering hazardous waste for transportation off-site, package, label, and mark each package to meet any US DOT regulations that apply under 49 CFR Parts 172, 173, 178, and 179.
- Send the episodic hazardous waste for treatment, storage, and/or disposal within 60 days of the start of the episodic event to a licensed hazardous waste disposal facility using both a Uniform Hazardous Waste Manifest and a permitted and registered hazardous waste transporter.
- Maintain the following records of the VSQG episodic event for at least three years from the end of the episodic event:
  - The beginning and end dates of the episodic event.
  - A description of the episodic event.
  - A description of the types and quantities of hazardous wastes generated during the event.

- A description of how the hazardous waste was managed and the name of the hazardous waste designated facility that received the hazardous waste.
- The name(s) of hazardous waste transporters.
- An approval letter from EGLE, if the generator petitioned for a second event during the calendar year

SQG Requirements for Planned and Unplanned Episodic Events

A SQG can maintain their existing generator category during a planned or unplanned episodic event if the site meets the SQG requirements, manages the episodic waste as specified in Rule 316 of the Part 111 Rules, and the event does not result in an accumulation of more than 6,000 kilograms (13,200 pounds) of nonacute hazardous waste at any one time on-site. If the accumulation is expected to exceed 6,000 kilograms (13,200 pounds) of nonacute hazardous waste, the site must meet the LQG requirements when the site exceeds the LQG generator category limit of 1,000 kilograms (2,200 pounds) of nonacute hazardous waste.

SQGs must maintain records associated with the episodic event. SQGs are limited to one episodic event per calendar year; however, the generator may petition EGLE for a second episodic event. The second episodic event cannot be the same as the first episodic event (if the first event in the calendar year was planned, the second must be unplanned and vice versa).

To maintain SQG status during an episodic event, the SQG must comply with the following:

- Notify EGLE of a planned episodic event at least 30 calendar days before the event using the Site ID Form. The notification must include the start date and end date of the episodic event, the reason(s) for the event, types and estimated quantities of hazardous waste expected to be generated as a result of the episodic event, and identify a facility contact and emergency coordinator with 24-hour telephone access to discuss the notification submittal or respond to an emergency.
- Notify EGLE by phone, email, or fax within 72 hours of an unplanned episodic event, followed by written notification of the unplanned episodic event using the Michigan Site ID Form. The notification must include the start date and end date of the episodic event, the reason(s) for the event, types and estimated quantities of hazardous waste expected to be generated as a result of the episodic event, and identify a facility contact and emergency coordinator with 24-hour telephone access to discuss the notification submittal or respond to an emergency.
- When accumulating the episodic waste in containers, label the container with the words “Episodic Hazardous Waste” and the date the episodic event began.
- When accumulating hazardous waste in a tank(s), label the tank(s) with the words “Episodic Hazardous Waste” and use inventory logs, monitoring equipment, or other records to identify the date upon which the episodic event began.

- Send the episodic hazardous waste for treatment, storage, and/or disposal within 60 days of the start of the episodic event to a licensed hazardous waste disposal facility using both a Uniform Hazardous Waste Manifest and a permitted and registered hazardous waste transporter.
- Maintain the following records of the SQG episodic event for at least three years from the end of the episodic event:
  - The beginning and end dates of the episodic event.
  - A description of the episodic event.
  - A description of the types and quantities of hazardous wastes generated during the event.
  - A description of how the hazardous waste was managed and the name of the hazardous waste designated facility that received the hazardous waste.
  - The name(s) of the hazardous waste transporter(s).
  - A written approval from EGLE, if the generator petitioned for a second event during the same calendar year.
- Meet the LDR requirements for the episodic hazardous waste.

SQGs with an episodic event will be charged the LQG handler fee for any year that they have an episodic event.

2.5 MEDICAL WASTE

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

- EGLE's Medical Waste Regulatory 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 excluding transport on public roadway which is regulated by US DOT.
- 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.
- US 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) also addresses the handling of liquids, semi-liquid blood, or other potentially infectious materials.
- The U.S. Postal Service has guidelines for mailing medical waste under Publication 52 - Hazardous, Restricted, and Perishable Mail and summarized under USPS Packaging Instruction 6D.
- 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. Pathological waste does not include a fetus or fetal body parts.
- Contaminated wastes from animals that have been exposed to agents infectious to humans, these being primarily research animals.
- Sharps, which includes needles, syringes, scalpels, and intravenous tubing with needles attached. The MIOSHA Blood borne Infectious Diseases Standard (Part 554) includes additional types of Sharps that are regulated as medical waste as well. Please consult this standard for additional types of Sharps subject to regulation under Part 138.

For wastes generated from households, please see EGLE's brochure titled "The Point Is...Needles Hurt"

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 by-product unless commingled with hazardous waste and subject to hazardous waste regulation.

Medical waste producers must register, and all medical waste must be incinerated, autoclaved, or treated by an alternative method approved by the department at a facility authorized to accept medical waste. If medical waste is not mixed with pharmaceuticals, it can be treated by any method contained under Part 138 or any approved alternative method found on the listing of Approved Alternative Treatment Technologies List found at **Michigan.gov/EGLEMedWaste**, then disposed in a non-hazardous solid waste landfill. Medical wastewaters, like dental and funeral home wastewaters, should never be directed to an on-site septic system as they are only designed to handle sanitary wastewaters from bathrooms, kitchens, and laundry devices.

Find additional information at **Michigan.gov/EGLEMedWaste**. For questions about medical waste call 517-230-9800 or e-mail **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. To register a new facility or renew an existing registration, go to **Michigan.gov/EGLEMedWaste**, select the "Registration and Fee Payment Portal" link and choose the appropriate option at the bottom of the page. If you do not have access to the Internet and are a new registrant, you may also remit the "Initial Application for Registration as a Medical Waste Producing Facility" via postal mail. To get a copy of the application, please contact the Medical Waste Regulatory Program staff at 517-230-9800. Remittance and payment instructions are included on the application. Please contact the Medical Waste Regulatory Program staff at 517-230-9800 or via email at MedicalWaste@Michigan.gov if you have additional questions."

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 EGLE's, Medical Waste Program staff.

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 **Michigan.gov/EGLEMedWaste** 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 management plan must be updated whenever any changes in management of medical waste occur and it must be readily available for inspection. A Sample Medical Waste Management Plan is available at **Michigan.gov/EGLEMedWaste**.

2.6 MIXED MEDICAL WASTE MEDICAL WASTE COMMINGLED WITH HAZARDOUS WASTE OR LIQUID INDUSTRIAL BY-PRODUCTS

Medical waste should not be 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 using any approved method included in Chapter 2.5 and disposed of in a sanitary landfill. If medical waste **is mixed** with pharmaceuticals, it must be separated from other medical waste and generally incinerated as a hazardous waste in accordance with federal and state air and waste regulations at a facility authorized to take both medical waste and the pharmaceuticals.

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, like sharps, is a mixed medical waste and must be managed to meet both Part 138 of Act 368 *and* Part 111 of Act 451 and its rules. If the pharmaceutical container is empty, it could be excluded from hazardous waste regulations and only be subject to the medical waste regulations. If separated from any sharps or infectious waste, the empty container may be managed as a solid waste and sent to a municipal solid waste landfill for disposal.

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 by-products (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 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 by-products.

An example of a medical waste commingled with liquid industrial by-product is a partially administered IV bag containing an antibiotic, which is not a hazardous waste, that 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 by-products regulations and only be subject to the medical waste regulations. The needle and attached tubing, which is a medical waste, could also be removed from the IV bag and managed separately from the liquid industrial by-product.

Liquid pharmaceutical waste not subject to the hazardous waste regulations is subject to the liquid industrial by-products requirements in Part 121 of Act 451. Pharmaceuticals defined as liquid industrial by-product should not to be 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 authorized to accept pharmaceuticals. As such, often the only disposal option for medical waste commingled with liquid industrial by-product is a permitted and licensed hazardous waste TSDF that is authorized to incinerate non-hazardous liquid industrial by-product and medical waste.

Liquid industrial by-product 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. However, solidification is not recommended for medications as they're biologically active agents that are best collected and managed as a liquid industrial by-product and incinerated when disposed. Any liquid industrial by-product 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 by-product is treated and/or disposed on-site, records of characterization 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.

More resources outlining the management options for handling drug waste and medical waste are available at **Michigan.gov/EGLEDrugDisposal**. Consider reviewing the following EGLE resources:

- Handling Unwanted Pharmaceuticals and their Containers in Health Care
- Recorded Webinar on Existing and Proposed Pharmaceutical Waste Regulations
- UPDATED Webinar Notes Reflecting Proposed and Final Federal Rules for Pharmaceutical Waste
- Starting August 21, 2019: New National Rules for Healthcare Governing Pharmaceutical Disposal
- Michigan Health and Hospital Association Healthcare Pharmaceutical Waste Management Guide and Example Posting

Note too that as of August 21, 2019, hazardous waste pharmaceuticals are prohibited from being discharged to the sanitary sewered for disposal. Non-hazardous pharmaceuticals cannot be sewered for disposal either, unless the disposal is specifically authorized by the receiving wastewater treatment plant For questions related to these resources, contact the Environmental Assistance Center at 800-662-9278 or your EGLE District Office, Hazardous Waste Program staff. For questions related to medical waste, see the resources at **Michigan.gov/EGLEMedWaste** and call 517-230-9800 or e-mail MedicalWaste@Michigan.gov.

2.7 MANAGING SPECIFIC WASTE STREAMS

This section provides details regarding the proper management of various types of waste that are commonly generated by businesses. See also EGLE's Waste Quick Look Guide as a helpful resource for printing and quickly understanding the majority of the handling requirements for many of the commonly generated waste streams covered in this section:

2.7.1 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.
- Used as dust control or weed control.
- Burned in municipal solid waste incinerators or other incinerators without energy recovery.

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 as defined by the Part 111 rules of Act 451, the federal used oil regulations in 40 CFR Part 279, and Part 121 of Act 451 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 the above materials would be subject to the federal SPCC regulations (see Chapter 6.2.3) and the 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 by-product 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 recorded on a shipping document as liquid industrial by-product (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 recorded on a shipping document as liquid industrial by-product.

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 listed in 40 CFR 261, Appendix VIII, and would not be regulated as hazardous waste. This demonstration is commonly called the "rebuttable presumption." Rebutting the presumption through analysis is costly. If used oil contains halogenated hazardous constituents, 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, you should 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 SDS for the oil being recycled which shows that it contains chlorinated paraffins and can also demonstrate that no chlorinated solvents are used at the site, this should be sufficient knowledge. A site 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 subject to regulation as a liquid industrial by-product. See U.S. EPA's RCRA Used Oil Rebuttable Presumption Guidance at **epa.gov/wastes/conserve/materials/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 in accordance with the hazardous waste regulations. See Chapter 2.4, Table 2.5, Table 2.6 and the following guidance documents for more details about managing used oil:

- **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
- 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 company
- 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

2.7.1a 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. Very small quantity generators of hazardous waste cannot mix halogenated wastes with used oil as of December 16, 2004. Check with your used oil 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.

2.7.1b Used Oil Burning and On-Site Use

A generator may use their used oil at the generating 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 AQD staff in your EGLE District Office to determine if an air permit is required and EGLE District Office, Hazardous Waste Program staff to determine if other waste regulations apply (see Appendix C for phone numbers and Chapter 1.1 for more details regarding air permitting).

2.7.2 USED OIL FILTERS

Look for scrap metal recyclers in the Recycled Materials Market Directory available at **Michigan.gov/RMMD**. When properly drained, used oil filters can be recycled as scrap metal and the filters are not subject to hazardous waste regulations. Used oil filters being disposed are exempt from hazardous waste regulations if they are non-tern 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.

2.7.3 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 Recycled Materials Market Directory at **Michigan.gov/RMMD**. They can also be returned to retailers, distributors, or manufacturers.

Facilities have two options for managing lead acid batteries. The options include:

- Recycle them under Rule 804 of the Part 111 rules 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; however, US DOT shipping requirements must be met 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.

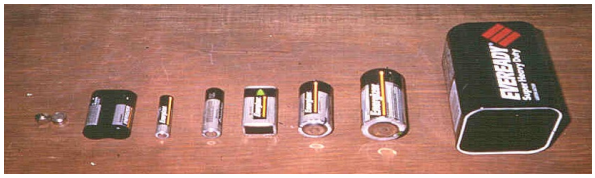
Prior to shipping batteries, handle and store batteries in ways that prevents releases. Tips from the Battery Council International for handling lead acid batteries include:

- Never put metal objects on the battery and remove metal jewelry like rings and chains before handling batteries.
- Wear gloves and safety glasses or goggles when working with batteries.
- Avoid getting any acid on your skin or clothing or in your eyes.

- Keep the battery up right and carry it in a non-metal, leak-proof container.
- Do not put excessive pressure on the ends of the battery. If you do not use a battery carrier, place your hands on the opposite corners of the battery to lift and carry.
- Store used lead acid batteries in a manner that prevents their contents from being released into the environment:
- Handle in a way that prevents them from cracking open, such as stacking them only one layer high on a pallet.
- Put in an area constructed with an impervious surface, such as concrete coated with epoxy, or stored in a plastic tub, etc. Some facilities have used a child's plastic swimming pool for containment.
- Have a well-ventilated area.
- Protect them from freezing
- Secure them from vandalism and away from children and pets.
- Protect them from sparks and flames. Keep batteries in 'no smoking' areas.
- Post the storage area with signs which state safety directions and indicate that hazardous batteries are present.

If a battery is dropped or leaking, one recommendation is to place it in a plastic pail and use baking soda or lime to neutralize any spilled acid. If you get acid spilled on your skin, immediately rinse the area with water and get medical attention. Remember to properly dispose of the used neutralizing material which may be a hazardous waste since it could contain lead or un-neutralized acid. Check with the local wastewater treatment plant to see if they will allow you to discharge any liquid acid to their system. Un-neutralized liquid residue from a spill has a D002 hazardous waste code, and any battery residue that has lead levels of 5.0 mg/l or more has a D008 waste code.

2.7.4 DRY CELL BATTERIES



Standard dry cell, non-rechargeable batteries

Dry cell batteries (alkaline, lithium-ion, lithium polymer, etc.) are used to power portable power tools like flashlights, calculators, computers, and clocks. Lithium-ion batteries are more powerful than traditional AA, C, and D dry cell batteries. Lithium-ion batteries come in the same sizes as alkaline batteries but are rechargeable, more powerful, light weight, and found in both small and large, cordless items like cell phones, watches, household tools (drills and handheld vacuums), garden tools (weed whackers and garden edgers), and electric vehicles. For dry cell batteries, facilities have the option to:

- Assume they are hazardous waste and manage them as universal waste. Battery recyclers can be found in the Recycled Materials Market Directory at **Michigan.gov/RMMD**. Universal waste batteries or containers need to be labeled with the words "universal waste battery(ies)," "waste battery(ies)," "used battery(ies)." And managed to 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 with the site's generator status.

EGLE does not have a list that identifies if a battery is a hazardous waste. Examples of possible characteristics for dry cell batteries besides corrosivity and reactivity include:

- Alkaline batteries (A, AA, C, DD, etc.) may contain regulated amounts of lead (D008), mercury (D009), and cadmium (D006). Recycling is still recommended for alkaline batteries that are not hazardous waste because they may contain recoverable amounts of magnesium and zinc.
- Lithium-sulfur dioxide (Li/SO2) batteries may exhibit reactivity characteristics (D003).
- Ni Cad batteries may contain regulated amounts of cadmium (D006).

Damaged lithium-ion and lithium polymer batteries are known to exhibit thermal (fire) events. This can happen when the battery casing is damaged or broken. Proper procedures should be followed when handling and shipping these batteries. They should be removed from rechargeable equipment and recycled. Battery recycling companies have special shipping containers and handling requirements to ensure the batteries, whether intact or damaged, can be safely handled. Lithium-ion, lithium polymer batteries, and electronics containing these batteries should not be placed in the trash or in a recycling bin because the can cause a fire in the transport vehicle, at the material recovery facility, or at the landfill. Check out these short videos showing battery terminals and how to tape them to prepare them for recycling, reducing the risk of shorting out and sparking fires:

Lithium-ion computer battery

- Terminals to tape: **Cell phone** and **computer**.
- Applying tape to batteries: **AA**, **cell phone**, **computer**, and **button**.

See U.S. EPA's Used Lithium-Ion Batteries and Frequent Questions on Lithium-io Batteries Websites for more information. Contact your waste hauler and licensed disposal facility to determine if they can assist with safe handling and recycling or disposal of dry cell batteries.

Dry cell battery shipments also need to meet US DOT's transportation requirements. See 49 CFR 173.185 for lithium battery information and 49 CFR 173.189 for batteries containing sodium. Discuss transportation requirements with the Michigan State Police, Commercial Vehicle Enforcement Division.

2.7.5 ELECTRIC LAMPS

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 for more specific management requirements. EGLE recommends companies handle and recycle their spent lamps. Recyclers can be found in the Recycled Materials Market Directory. Drum top crushers require an air permit prior to installation and operation. For more information on drum crushers, see the guidance at **Michigan.gov/Air** when selecting "Clean Air Assistance" and "Fluorescent Light Bulb Crushers." If you are considering the use of a lamp crusher, contact LARA, Consultation Education and Training Program staff at 517-322-1809 to discuss operating and permitting requirements that address worker safety.

Basic lamp management options include:

- 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 SDS or sales literature that may include a statement that the lamps are not a hazardous waste or not a RCRA waste. Recycling of low mercury bulbs is recommended to reduce a company's potential liability in case contamination were to ever occur at the landfill where the solid waste was sent. However, at this time these non-hazardous bulbs can legally be disposed in a permitted solid waste landfill assuming the trash hauler and licensed disposal facility provides approval.
- Assume they are hazardous waste and manage them as universal waste. Label unbroken individual lamps or containers with the words "Universal Waste Lamps," "Waste Lamps", or "Used 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. Broken lamps generally cannot be handled as universal waste in Michigan. Additionally, many recyclers only want to handle unbroken/uncrushed lamps. If you are managing lamps as a universal waste and experience incidental breakage while handling, if the container remains intact and closed, preventing any release, contact your universal waste handler to determine whether they can accept your waste and any additional requirements you must take to ensure proper handling upon receipt.

  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 high-intensity discharge (HID) lamps or other lamps containing mercury at concentrations of 0.2 mg/l or more are a D009 hazardous waste.
- LED bulbs contain a small circuit board which can contain lead depending on the age of the bulb. Lead at concentrations of 5.0 mg/l or more are a D008 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, very small quantity generator may put the bulbs in the trash if the hauler and licensed solid waste disposal facility will accept them and it is authorized under MIOSHA standards. Most 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 unless they are intact and managed as a universal waste.

2.7.6 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 US 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 to send the items to a facility appropriately licensed to handle PCBs. For more information about PCBs in other devices, see Chapter 4.5 and U.S. EPA's TSCA information at **epa.gov/pcbs**. PCB waste that is liquid must be managed to meet the liquid industrial by-products requirements and documented on a shipping document unless a manifest is required under TSCA. For PCB waste that is solid, use the PCB codes required by your disposal facility and discuss any PCB manifesting requirements with them.

Questions regarding management and disposal of PCB articles under TSCA should be directed to the U.S. EPA's, Region 5, PCB contact who can be reached at 312-886-7890.

Electronic ballasts are common alternative to oil containing ballasts and should be managed in accordance with the electronics guidance (see 2.7.13).

2.7.7 SORBENTS

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

- The landfill has approved them. Check with the landfill operator;
- The sorbents contain no free liquids (they pass the paint filter test); and
- The materials are either of the following:
  - Not a hazardous waste, including sorbents used for oil spills or
  - A hazardous waste generated by a very 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 by-product.

Small and large quantity 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. See Chapter 2.4 for more details.

An EGLE, 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 are met and the treatment does not violate the land disposal restrictions.

Some companies offer services where used sorbents are returned to them for oil recovery and then the sorbents can be reused. Search for sorbent recyclers in the Recycled Materials Market Directory. Visit **www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program#product** to find manufacturers and suppliers of sorbents containing recycled materials.

2.7.8 SHOP TOWELS AND OTHER TEXTILES

Disposable and reusable 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 if they exhibit any other hazardous waste characteristics. Textiles that are spontaneously combustible are a D001 hazardous waste. If textiles were used as a sorbent to clean up spills, also see Chapter 2.7.8.

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 site 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.

In 2013, U.S. EPA issued new federal rules conditionally excluding solvent-contaminated wipes from hazardous waste regulation under 40 CFR 261.4(b)(18). Michigan adopted the federal exclusion into the Michigan rules which became effective in April 2017. Generators meeting the solvent contaminated wipes exclusion may launder and reuse the wipes or dispose of them so long as the provisions of the exclusion are met. A "solvent-contaminated wipe" means a wipe that, after use or after cleaning up a spill:

- contains one or more of the F001 through F005 solvents listed in Rule 220 of the Part 111 rules or the corresponding P- or U-listed solvents found in Rules 224, 225, or 226 of the Part 111 rules.
- exhibits a hazardous characteristic as defined in Rule 212 of the Part 111 rules and that characteristic results from a solvent listed in Part 2 of the Part 111 rules.
- exhibits only the hazardous characteristic of ignitability as defined in Rule 212 of the Part 111 rules due to the presence of one or more solvents that are not listed in Part 2 of the Part 111 rules.

Solvent-contaminated wipes do not include mops, floor mats, and personal protective equipment. Solvent contaminated wipes that contain listed hazardous waste other than solvents; or exhibit the characteristic of toxicity, corrosivity, or reactivity due to contaminants other than solvents, are not eligible for exclusions. Nor are wipes containing trichloroethene (TCE).

When accumulating excluded wipes, the wipes must be contained in closed containers, except for when wipes are being added or removed. The containers must be non-leaking and able to contain free liquids if free liquids occur. The containers must be labeled "Excluded Solvent-Contaminated Wipes." Each excluded wipes container must be stored for no more than 180 days from the date the first wipe was placed in the container. The generator of the excluded wipes must remove all free liquids before sending the container of wipes for cleaning or off-site disposal. Any compacting of excluded solvent wipes is considered treatment and must be performed in accordance with Part 111. If free liquids are generated during solvent accumulation due to percolation, compression, or compaction, they must be characterized and managed as a newly generated waste stream.

Disposable wipes must be sent for disposal to one of the following:

- A municipal solid waste landfill regulated under Part 115, Solid Waste Management, of Act 451
- A municipal solid waste landfill regulated under 40 C.F.R. Part 258, including 40 C.F.R. §258.40.
- A hazardous waste landfill regulated under Part 111.

- A hazardous waste landfill regulated under 40 C.F.R. Part 264 or 265.
- A municipal waste combustor or other combustion facility regulated under Section 129 of the federal Clean Air Act.
- A hazardous waste combustor, boiler, or industrial furnace regulated under Part 111.
- A hazardous waste combustor, boiler, or industrial furnace regulated under 40 C.F.R. Part 264, 265, or 266, Subpart H.

Reusable wipes must be laundered and reused. 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 effect they will have on their own waste stream.

Records sufficient to verify the exclusion must be maintained for at least three years and made available upon request. If an intermediary facility is used prior to a final destination disposal facility, the generator must maintain records regarding both the intermediate facility and ultimate disposal facility. Wipes managed to meet the exclusion are not included when calculating a site's generator status. For additional details on meeting the exclusions, including required records and what is adequately closed for purposes of the solvent wipes exclusions, see the Solvent Contaminated Wipes Guide. For questions regarding hazardous waste textile recycling or disposal and the disposable wipes exclusion, contact your EGLE District Office Hazardous Waste Program staff.

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.

2.7.9 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 2.7.8 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.

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.
- 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.

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

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 site 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 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 1.5). If a site is a large quantity generator, also see Chapter 2.4.7. b section on VOC air emissions.

2.7.9a On-site Solvent Recycling

Facilities that use large volumes of solvents should consider recycling the used solvents on-site. See Chapter 12.1.4.d for information on solvent pollution prevention options. 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 by-products 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).

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.

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 + ½ + ½ + ½ (solvent) + ½ +½ + ½ (sludge) = 8 ½ gallons of hazardous waste was generated in June from solvent use and recycling.

Week	Solvent in gallons	Sludge in gallons	Notes
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 pounds/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

- Meet the generator hazardous waste or liquid industrial by-products 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 AQD at your EGLE District Office 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 site's solvent requirements.

2.7.9b 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 at **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 2.3.2. Call your EGLE District Office, Hazardous Waste Program staff if you have any questions about reuse or recycling of solvents.

Learn more about EGLE's hazardous and liquid industrial by-products inspection process and the records inspectors will request by viewing the recorded **Waste Webinar Series** available at **Michigan.gov/EGLEEvents**.

2.7.10 AEROSOLS

When managed as universal waste, handlers must manage aerosol cans in a way that prevents a release or any component of universal waste to the environment. Universal waste aerosol cans must be accumulated in a container that is structurally sound, compatible with the contents of the aerosol cans, and lacks evidence of leakage, spillage, or damage that could cause leakage. Containers must be protected from heat sources (e.g., open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; and static, electrical, and mechanical sparks).

Leaking or damaged aerosol cans must be either packaged in a separate closed container, overpacked with absorbents, or immediately punctured and drained.

Handlers may sort aerosol cans by type, mix intact cans into one container, and remove nozzles to reduce risk of accidental release.

Handlers that puncture universal waste aerosol cans must recycle the empty punctured cans and meet the following requirements while puncturing and draining the cans:

- Puncturing and draining must be conducted using a device specifically designed to safely puncture aerosol cans and effectively contain the residual contents and any emissions. See Chapter 2.7.10a for information on aerosol can puncturing device requirements.
- Handlers must develop and follow a written procedure detailing how to safely puncture and drain aerosol cans. This procedure must address proper assembly, operation, and maintenance of the puncturing unit, segregation of incompatible wastes, and proper waste management practices to prevent fires and releases. Handlers must maintain a copy of the puncturing device manufacturer's instructions on-site and ensure employees operating the device are trained in the proper procedures.
- Puncturing must be performed in a manner designed to prevent fires and releases into the environment. This includes, but is not limited to, locating the equipment on a solid, flat surface in a well-ventilated area.

- The contents from the waste aerosol can or puncturing device are immediately transferred to a container or tank that meets applicable requirements of 40 CFR 262.14, 15, 16, or 17.
- Handlers must determine if the contents from the emptied aerosol cans are hazardous waste. Any hazardous waste generated from puncturing the cans is subject to all applicable RCRA regulations, and the handler is considered the generator of the hazardous waste.
- Handlers must have a written procedure for cleaning up spills or leaks of the contents of the aerosol cans. A spill cleanup kit must be provided, and all spills or leaks must be cleaned up promptly.
- Handlers may puncture and drain universal waste aerosol cans received from other, offsite handlers.

2.7.10a Aerosol Can Puncturing Devices

Aerosol can-puncturing devices normally fit onto a 55-gallon drum. If you are considering operating an aerosol can puncturing device, first contact your EGLE District Office, AQD and Hazardous Waste Program 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 an EGLE, Hazardous Waste Program hazardous waste permit and license, small quantity generators and large quantity generators must meet the requirements of Rule 503(1)(i) of the Part 111 rules. 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. Very small quantity generators are not subject to this rule.

If you have an aerosol can crushing or puncturing 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 satellite containers and Chapter 2.4.7 and 2.4.8 for the requirements that apply to hazardous waste accumulation containers.

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. See the On-Site Aerosol Can Drum Top Recycling Systems guide for more details on the regulations that apply to on-site recycling systems and direct any questions to the Hazardous Waste Program staff in your EGLE District Office.

2.7.11 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 2.7.8 regarding shop towels and textiles and 2.7.9 regarding parts washers and other solvents). If you have any questions about your waste generated from painting operations, call your EGLE District Office, Hazardous Waste Program staff.

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 2.7.9). 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 SDS and note your review on your waste characterization records. SDS' were developed for occupational health reasons and some manufacturers do not list all chemicals of concern for disposal on the SDS. Paint filters and waste rags may also be a D001 waste because they are spontaneously combustible or contain enough ignitable liquid waste. Look for paint and solvent recyclers in the Recycled Materials Market Directory at **Michigan.gov/RMMD** and be sure to confirm they are a permitted and registered transporter (see Chapter 2.7).

Example 1: A paint booth operation at the site 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 questions regarding VOC emission from painting operations.

2.7.12 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. A site is required to include the amount in determining its hazardous waste generator status, obtain a Site ID 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 at least 75 percent of the waste 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 cannot be discharged to a publicly owned treatment works (POTW) or septic system. It may be necessary to install a silver recovery unit. Before purchasing or leasing a unit, check with the POTW 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.

Very 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 2.3.2 or hiring a permitted and registered liquid industrial by-product transporter to haul the liquids. Liquid solutions, and cartridges that contain free liquids, that do not meet this silver concentration would be managed and shipped as liquid industrial by-product (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 US DOT requirements regardless of the status under waste regulations.

Used developer and system cleaners:

Check if the publicly owned treatment works (POTW) 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 by-product and record the transport on a shipping document (see Chapter 2.3.2). Do not mix used fixer and developer.

Cleaners used in developer systems may contain chromium. Review the SDS 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

EGLE recommends that used film be recycled for silver. Recyclers can be found in the Recycled Materials Market Directory at **Michigan.gov/RMMD**. Very 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.

2.7.13 ELECTRONIC WASTE

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 include 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, 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 of business and commercially generated material exempt under Part 111 of Act 451 and its rules.

See EGLE’s Electronic Equipment guidance for details about when consumer electronics are a waste, where to recycle electronics, recycling exemptions, and more. Part 173 requires recyclers of consumer electronics to register with the State and to meet certain operational requirement. A listing of those registered recyclers can be found on the Takeback Program website at **Michigan.gov/EGLEEwaste**.

Electronics that are not typically found in a home are generally a hazardous waste because they fail the TCLP test for metals. This is especially true for equipment that contain cathode ray tubes (lead) and LCD screens (mercury). For more information on this topic, including exemptions for handling electronics that cannot be managed as a consumer electronic under the universal waste regulations, see the electronic equipment guidance at **Michigan.gov/EGLEEwaste.**

2.7.14 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 regarding low-level mixed waste (LLMW) and Rule 823 of the Part 111 rules regarding LLMW and naturally occurring and/or accelerator-produced radioactive materials (NARM). Discuss requirements with EGLE by calling 517-241-1275. See Chapter 10 for management of exit signs and industrial smoke detectors.

2.7.15 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. The higher lead levels are generally exhibited in antifreeze removed from heavy duty equipment. To simplify the management options associated with antifreeze exhibiting the D008 lead characteristic, EGLE established antifreeze as a universal waste in the 2008. Non-hazardous antifreeze may be managed as liquid industrial by-product, universal waste, or hazardous waste. Hazardous waste antifreeze must be managed as a hazardous waste or universal waste. See the Antifreeze guidance available in EGLE’s publication center. Antifreeze recyclers can be found in the Recycled Materials Market Directory at **Michigan.gov/RMMD**.

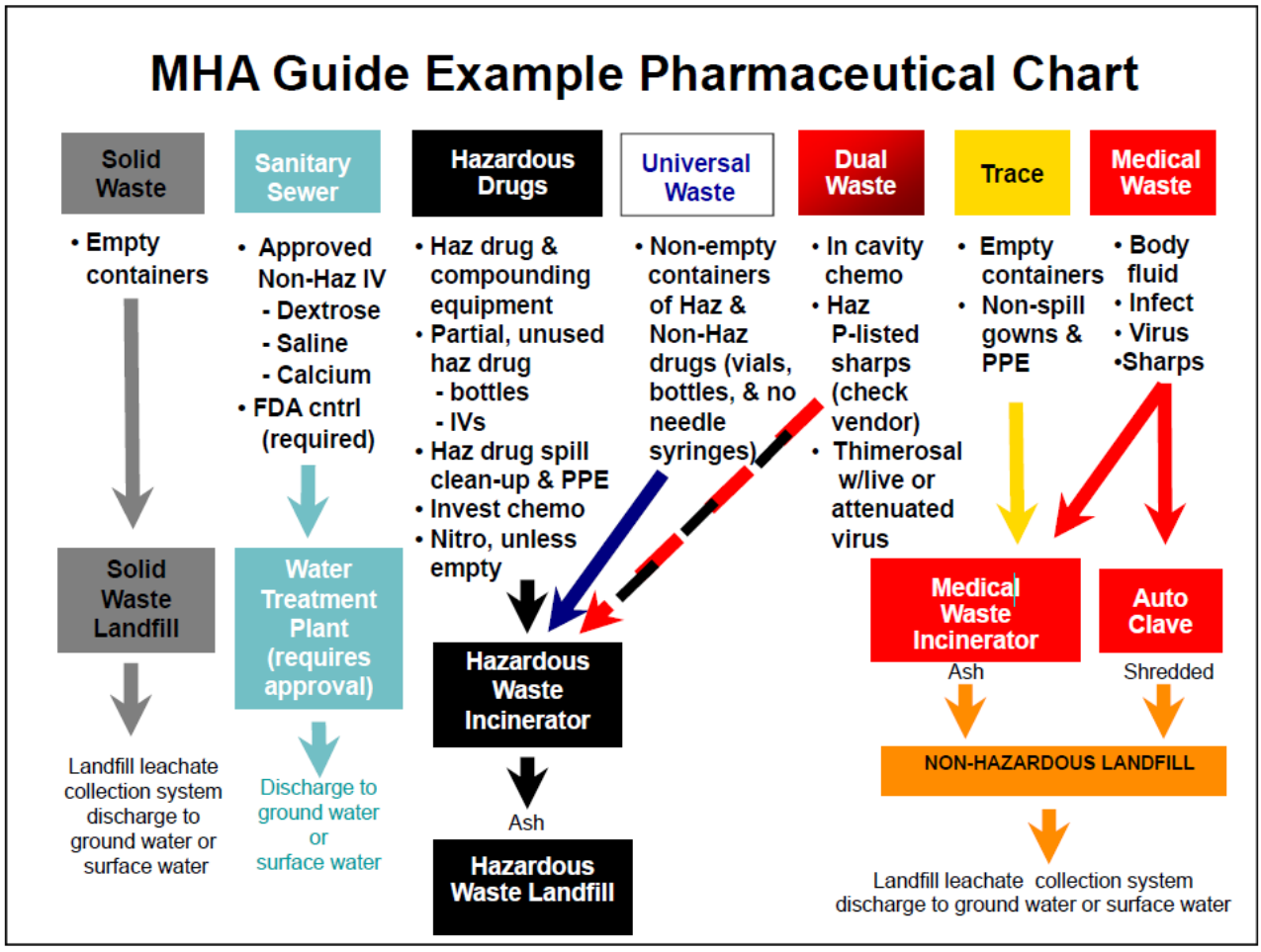
2.7.16 SCRAP METAL

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 or look in the yellow pages under the heading "Scrap Metal." If you have precious metals, see Chapter 2.7.2.

2.7.17 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, is subject to regulation as a liquid industrial by-product under Part 121 of Act 451, unless specifically exempted. The environmental regulations also have an exemption for empty containers which, when met, allow for some containers that previously held medications to be disposed as a non-hazardous solid waste or recycled.



To simplify the management requirements that apply to pharmaceuticals requiring disposal in healthcare, in 2007 Michigan adopted pharmaceuticals as a universal waste type, allowing them to be managed under streamlined standards (see Chapter 2.4.1.c). To assist healthcare providers with understanding and taking advantage of this rulemaking, additional resources were developed including:

- **Handling Unwanted Pharmaceuticals and their Containers in Healthcare** – A guide for characterizing unwanted pharmaceuticals and their containers, to determine how the must be handled when no longer able to be administered to a patient.
- **Recorded Webinar on Existing and Proposed Pharmaceutical Waste Regulations in Michigan** –A recorded webinar that discusses current regulations and future federal hazardous waste regulations.
- **Webinar Notes Reflecting Proposed and Final Federal Rules for Pharmaceutical Waste** – Webinar notes that share details delivered in the recorded webinar, links to additional helpful resources, and details on the final federal rulemaking.
- **National Rules for Healthcare Governing Pharmaceutical Disposal**–EGLE noticed on the federal ban on drain disposal of hazardous waste pharmaceuticals which became effective August 21, 2019.
- **Michigan Health and Hospital Association Pharmaceutical Waste Management Guide** – A guide that includes guide sheets for the various types of pharmaceutical and medical wastes. generated by healthcare and best management practices for assisting with meeting worker and patient exposure and waste regulations.
- **MHA Guide Example Posting** – A chart (above) which depicts common healthcare pharmaceutical waste streams, how they are typical handled and how the handling option selected has different environmental impacts.
- **Ten Steps to Developing a Pharmaceutical Waste Management Program –** A list of steps for developing and implementing a pharmaceutical waste management program.
- **Selecting a Transporters or Treatment, Storage and Disposal Facilities (TSDFs) –** A guide for selecting a pharmaceutical waste vendor.
- **Pharmaceutical Waste Disposal Vendor List –** A list of vendors that specialize in handling pharmaceutical waste.

These resources are found at **Michigan.gov/EGLEDrugDisposal** along with resources to help patients properly dispose of household medications. For questions related to these resources, contact the Environmental Assistance Center at 800-662-9278 or your EGLE, District Office, Hazardous Waste Program. For more information on managing mixed medical waste, also see Chapter 2.5 and 2.6.

2.7.18 BIOSOLIDS

"Biosolids" include sewage sludges generated from the treatment of sanitary sewage or domestic sewage. The beneficial reuse of biosolids is subject to a residuals management program approved by WRD under Part 31. Biosolids may be solid, semisolid, or liquid and includes scum or solids removed in primary, secondary, or advanced wastewater treatment processes and any derivatives from these materials. Biosolids managed under a WRD part 31 approved residual management program are subject to the Part 31 permit requirements and excluded from the liquid industrial by-products management requirements. Sewage sludge that is not subject to a residual management program is a by-product or waste and must be managed to meet the liquid industrial by-product regulations if they are a liquid that fails the paint filter test. See the summary table identifying the different regulations that apply to wastewaters transported via public roadway for recycling or disposal for more information. Contact your EGLE, MMD, Hazardous Waste Program; EGLE, DWEHD, On-Site Wastewater or Septage Program; or EGLE, WRD, Biosolids Program staff for questions.

2.7.19 MARIJUANA CULTIVATION AND PROCESSING

Marijuana cultivation and processing has expanded as more and more states authorize use of marijuana and marijuana products for both medical and recreational purposes. EGLE's regulations that apply when cultivating and processing marijuana vary from operation to operation and depend on materials and processes used. To learn more about the environmental regulations that apply to these operations, please see the following guidance found on EGLE's Environmental Obligations for the Cannabis Industry Web page and:

- Environmental Compliance Overview for Growers and Processors of Marijuana
- Cannabis and the Environment Frequently Asked Questions
- Materials Management Regulations for Growing and Processing Marijuana

2.7.20 PHOTOVOLTAIC SOLAR PANELS

Photovoltaic solar panels, like all other waste materials, must be characterized when discarded to determine whether they are a hazardous waste. Solar panels can contain toxic metals at concentrations which can make them a characteristically toxic hazardous waste if they contain any of the metals specified in Table 2.3. If the solar panels are a hazardous waste, they must be managed to meet the hazardous waste regulations and ultimately recycled or disposed at an authorized hazardous waste designated facility. To promote recycling of electronic devices, EGLE established consumer electronics as a universal waste type. See Chapter 2.4 for details on managing photovoltaic solar panels as a consumer electronic universal waste or a hazardous waste.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common waste topics

Compliance Assistance
Michigan.gov/EnvironmentalAssistance
EGLE Environmental Assistance Center: 800-662-9278 | EGLE-Assist@Michigan.gov

Electronics Recycling
Michigan.gov/EGLEEwaste
EGLE Electronic Takeback Program: 517-449-6153 |

Hazardous Waste and Liquid Industrial By-Product Generators
Hazardous and Liquid Industrial By-product Management at **Michigan.gov/EGLEWaste**
EGLE District Office, Hazardous Waste Program

Hazardous Waste and Liquid Industrial By-Products Transporters
Michigan.gov/EGLEWaste
EGLE, Hazardous Waste Transporter Program: 586-753-3850

Hazardous Waste and Liquid Industrial By-Products Manifests and Shipping Documents
Hazardous and Liquid Industrial By-product Management at **Michigan.gov/EGLEWaste**
EGLE District Office, Hazardous Waste Program

- Manifest Tracking Log
- Liquid Industrial By-Products FAQs
- Consolidated Manifest Operational Memo 121-3

Hazardous, Liquid, and Solid Waste Regulation Questions and Publications
EGLE, Environmental Assistance Center: 800-662-9278
EGLE District Office, Hazardous Waste Program

- Waste Characterization
- Universal Waste
- Used Oil
- Very Small Quantity Generator
- Liquid Industrial By-products Generator
- Small Quantity Generator
- Emergency Information Poster
- Required Weekly Hazardous Waste Maintenance Checklist
- Personnel Training Requirements for Large Quantity Generators of Hazardous Waste
- Manifest Tracking Log
- Emptying Tanks or Containers
- Non-hazardous Waste Holding Tanks
- Mixed Medical Waste
- Electronic Equipment
- Electric Lamps and Small Ballasts
- Antifreeze

Hazardous Waste Site Identification Number (U.S. EPA Number)
Michigan Site Identification Form at **Michigan.gov/EGLEWaste**
EGLE, District Office, Hazardous Waste Program

- Site Identification Form (EQP 5150)

Hazardous Waste Licensed Treatment, Storage, and Disposal Facilities
EGLE, Hazardous Waste Program: 517-284-6838
Perform an "Advanced Search" of the Waste Data System (WDS) at **EGLE.State.MI.US.Wdspi** (select "Hazardous Waste Permitting and Corrective Action," "Legal/Operating Status Code," then "PIOP" for "Permitted – Operating, Actively Managing RCRA-Regulated Waste")

Household Hazardous Waste Collection and Diversion
EGLE, Solid Waste Program: 517-284-6588

- Local HHW Programs in Michigan
- List of HHW Collection Companies in Michigan
- Household and Very Small Generator Hazardous Waste Collection Site Regulations Webinar and Webinar Notes

Integrated Assessments (Confidential and Free)
Michigan.gov/P2IntegratedAssessment
EGLE Integrated Assessment Program: 517- 285-7847

Liquid Industrial By-products
EGLE District Office, Hazardous Waste Program, See Appendix C

- Liquid Industrial By-products Generators
- Liquid Industrial By-products Frequently Asked Questions
- Hazardous Secondary Materials

Medical Waste Program
Michigan.gov/EGLEMedWaste
EGLE Medical Waste Program: 517-230-9800 | MedicalWaste@Michigan.gov

- Medical Waste Registration and Fee Payment Portal
- Sample Medical Waste Management Plan
- Medical Waste Pocket Guide

Oil Filters Recycling
EGLE District Office, Hazardous Waste Program

- Household Do-It-Yourselfer Used Motor Oil and Filters
- Used Oil Filters Generator Requirements
- Recycling Materials Market Directory – Michigan.gov/RMMD

Recycling
Local - **Michigan.gov/EGLEHHW**
Commercial: Recycled Materials Market Directory– **Michigan.gov/RMMD**
Residential: Michigan Recycling Directory – **Michigan.gov/RecyclingDirectory**
EGLE Recycling Specialists: 517-284-6588 | **Michigan.gov/EGLERecycling**

Safety Data Sheets, formerly Material Safety Data Sheets
hazard.com | reade.com/MSDS_Links.html

Scrap Tire Storage and Disposal; Scrap Tire Registered Haulers and Collection Sites
Michigan.gov/ScrapTires
EGLE District Office, Scrap Tire Program

Solid Waste Exemptions
Exemptions and Guidance at **Michigan.gov/EGLEWaste | Solid Waste**
EGLE Solid Waste Program: 517-284-6588

Solid Waste Landfills
Solid Waste Facilities at **Michigan.gov/EGLEWaste | Solid Waste**
EGLE, District Office Solid Waste Program

Solid Waste Planning Agency Contacts
Solid Waste Planning at **Michigan.gov/EGLEWaste | Solid Waste**
EGLE, Solid Waste Program: 517-614-7426

Toxic Substance Control Act, PCB information
EPA.Gov/PCBs
U.S. EPA Region 5: 312-886-7890 | 800-621-8431 | 312-353-2318

US Department of Transportation (US DOT)
800-467-4922 | **FMCSA.DOT.Gov**

US DOT Hazardous Materials Transportation
Michigan State Police, Commercial Vehicle Enforcement Division: 517-241-0506
Michigan.gov/Motor Carrier
Michigan Center for Truck Safety: 800-682-4682
TruckingSafety.org

U.S. EPA Waste Compliance Assistance Publications
EPA.Gov/EPAWaste/Index.htm

- Hazardous Waste Generator Regulations A User-Friendly Reference
- RCRA Online
- RCRA Orientation Manual

Michigan Guide to
Environmental Regulations

Chapter 3

WASTEWATER

CHAPTER 3: Wastewater

In this Chapter

PURPOSE AND APPLICABILITY OF REGULATIONS

Many manufacturers generate wastewater that must be discharged or treated in accordance with local, state, and/or federal requirements. Chapter 3 discusses wastewater disposal options, permitting, and operator training requirements. This chapter also identifies wastewater regulatory agencies and common non-compliance issues.

AGENCIES AND THEIR LAWS AND RULES

The Department of Environment, Great Lakes, and Energy (EGLE) has several roles related to wastewater discharges. EGLE regulates discharges of wastewater, including stormwater for some communities, to surface waters of the state through the **National Pollutant Discharge Elimination System** (NPDES) permit program. The NPDES permit program was delegated to Michigan from the U. S. Environmental Protection Agency (U.S. EPA). The U.S. EPA has jurisdiction to enforce federal regulations under the Clean Water Act and has an oversight role for state delegated programs, including the NPDES permit program. State statutes that provide the basis for the NPDES program in Michigan: **Part 31** (Water Resources Protection) and **Part 41** (Sewerage Systems) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451), and the NPDES permitting discharge rules. Therefore, EGLE is the primary contact for manufacturers, construction site owners/developers, and municipalities in relation to NPDES permits. Through NPDES permits, EGLE regulates discharges from publicly owned treatment works (POTWs) into state waters, and reviews local ordinances for compliance with statewide industrial pretreatment standards. While wastewater discharges that are sent to POTWs are regulated by local agencies through local ordinances and permits, EGLE has the authority to enforce the local industrial pretreatment standards.

EGLE also implements a state permit program regulating industrial and commercial wastewater discharges to **groundwater**. These discharges to groundwater are regulated pursuant to Part 31 and Part 41 of Act 451 and their rules. Local entities may have additional requirements regulated and enforced by the POTW and/or building and zoning ordinances.

EGLE's **Onsite Wastewater Program** oversees the discharge and permitting of sanitary wastewaters to on-site septic systems. This program is administered in coordination with local health departments who permit and inspect on-site sanitary wastewaters systems. On-site sanitary wastewater systems permitted under this program are only designed to handle sanitary wastewater from bathrooms, kitchens, and laundry devices. Some communities may have local ordinance requirements in addition to the state regulations implemented by the local authorities.

EGLE's **Septage Program** also regulates the transportation and land application of domestic septage removed from on-site sanitary wastewaters systems under **Part 117** (Septage Waste Servicers) of Act 451.

EGLE's Hazardous Waste Program oversees the management of waste, wastewaters, and sludges that must be accumulated, stored, transported, treated, and disposed if they:

- are not permitted for discharge to the POTW.
- are permitted for discharge to the POTW but are managed (accumulated and handled) prior to disposal to the POTW.
- are not permitted for discharge to surface water or groundwater via a discharge permit issued by EGLE, WRD pursuant to Part 31.
- are not generated from an on-site wastewater system and subject to the **Part 117** handling requirements.

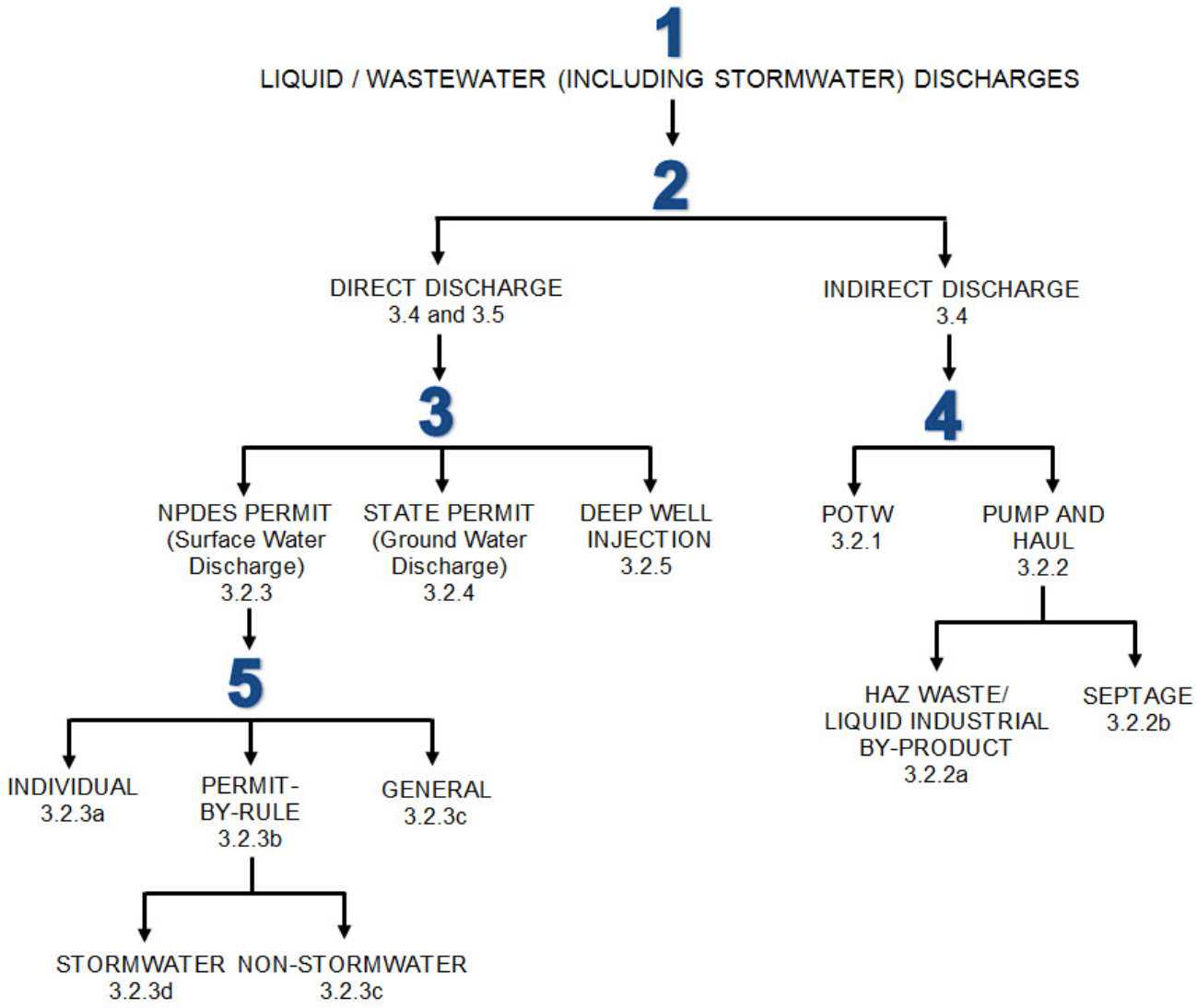
All non-households must evaluate the characteristics, composition and, in some cases, the amount of the waste before they can determine the management standards that apply to their handling and disposal. Most wastes are subject to **Part 121** (Liquid Industrial By-products) of Act 451, **Part 111** (Hazardous Waste Management) of Act 451 and the **Part 111 rules**, or **Part 115** (Solid Waste Management) and the **Part 115 rules**. Some wastes, such as **medical waste**, **radioactive waste**, and polychlorinated biphenyl (**PCB) wastes,** have additional requirements. Transportation of hazardous waste and liquid industrial by-products by public roadway is also regulated by EGLE under the Hazardous Materials Transportation Act, Public **Act 138** of 1998, as amended, which is discussed in greater detail in Chapter 4.

See Chapters **2** and **4** of this guide to learn more about waste regulations and whether your wastewater is subject to waste management requirements as a hazardous waste or liquid industrial by-product.

3.1 KEY TO CHAPTER

The following key is to help identify which portions of Chapter 3 may apply to your facility. Questions in the key coincide with numbers in the flow chart. Start at Number 1 and work your way through the key and corresponding numbered questions. Your path through the key identifies the Sections of Chapter 3 that apply to your wastewater discharges.

CHAPTER KEY



1. Do you discharge any liquids or wastewater from your facility?

"Wastewater" is liquid waste that results from industrial and commercial processes and municipal operations, including liquid or water-carried process waste, cooling and condensing waters, and sanitary sewage. "Waste" means any waste, wastewater, waste effluent, or pollutant, including any of the following: dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal, and agricultural waste. Wastewater includes storm water that comes into contact with industrial activities or materials, or which runs off an urbanized area or a construction site that disturbs one acre or more.

If your answer is yes, then go to #2 and continue the key for each discharge.

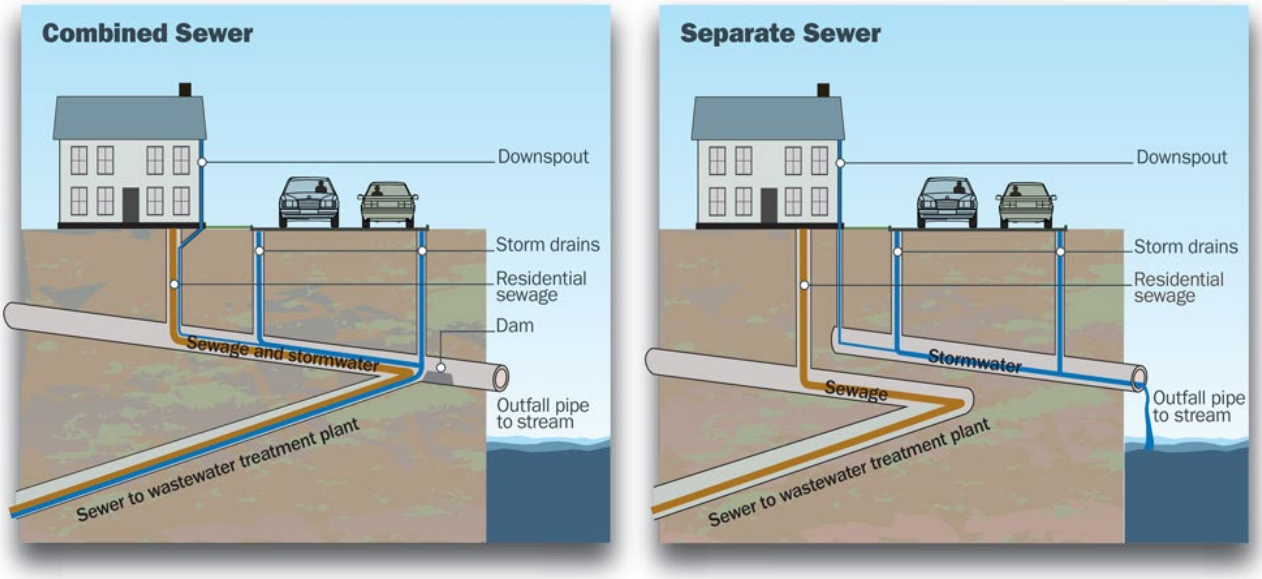
If your answer is no, this chapter does not apply to you at this time

2. Is the discharge direct or indirect to waters of the state?

For the purposes of this key, an "indirect" discharge is wastewater that is treated by a publicly owned treatment works (POTW) before it is discharged to waters of the state. Whereas a "direct" discharge goes directly into waters of the state (groundwater, streams, lakes, rivers, etc.) without treatment from a POTW via a storm sewer system (picture below), a ditch, or other conveyance.

When a sewer system is called "combined" it means that the sewers were designed to carry both storm water and non-storm water (i.e., sanitary and non-domestic source wastewater) to the POTW for treatment. If you are unsure whether your storm sewer system is combined, contact the municipality that owns and operates your system (usually a city or township).

You may have both a direct and an indirect discharge. If you have a direct discharge, go to #3. If you have an indirect discharge, go to #4.



If you own and operate your own wastewater treatment system that discharges to the environment, go to #3; if you own and operate a wastewater treatment system that discharges to a POTW, go to #4.

3. Does your wastewater discharge into surface waters, groundwaters or injected deep into the ground?

All direct dischargers (to surface water, to groundwater including deep injection wells) are required to have an operator certified by the State. See Chapter 3.4 "Wastewater Treatment Operator Training and Certifications."

"Surface waters of the state" includes all of the following: the Great Lakes and connecting waters, all inland lakes, rivers, streams, impoundments, open drains, and other surface bodies of water within the confines of the state but does not include drainage ways and ponds used solely for wastewater conveyance, treatment, or control. Regulated discharges include wastewater discharges from discernible, confined, and discrete conveyances, including from a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, concentrated animal feeding operation, or vessel or other floating craft.

If you have a surface water discharge, such as through a storm sewer system, go to #5.

If you discharge on to land and the water goes into the ground, see Chapter 3.2.4 "Groundwater Permit."

If you inject wastewater (e.g., reverse osmosis reject, brine, or greywater) to a deep injection well, see Chapter 3.2.5 "Deep Injection Wells."

4. Do you send your wastewater for treatment to a POTW, either through a sewer system or collecting and hauling it (pump and haul)?

Any discharge to a publicly owned treatment works other than or in addition to sanitary sewage (water-carried wastes from toilet, kitchen, laundry, bathing, or other facilities that are used for household purposes) is nondomestic wastewater. If you discharge to a POTW, see Chapter 3.2.1 "Publicly Owned Treatment Works" and 3.2.1.a "Industrial Pretreatment Program (IPP)."

If your wastewater is not discharged to a POTW through a sewer system but rather collected and transported to a POTW, see Chapter 3.2.2 "Hazardous Waste and Liquid Industrial By-Product Transportation."

5. If your facility discharges wastewater to surface waters of the state, you are required to obtain a NPDES permit from EGLE.

There are three categories of NPDES permit coverage; an individual permit, a "permit by rule" and a Certificate of Coverage (COC) issued under a general permit. Individual NPDES permits are site specific. The industrial stormwater permit is an example of a general permit; it is not facility specific. In order to obtain coverage under the general permit, facilities must obtain a facility specific COC. See Chapter 3.2.3 "Surface Water Discharge."

Storm water (rain and snow-melt runoff and drainage) is regulated when associated with certain industrial, municipal, and construction activities. NPDES industrial storm water permit coverage is probably required if you discharge into a separate (non-combined) storm sewer system or directly into surface water (see Chapter 3.2.3.d). Also, construction activities that disturb more than one acre and discharge storm water to surface waters of the state are required to comply with the NPDES storm water permit by rule. The term construction includes clearing, grading, and excavating activities. It does not include the practices of clearing, plowing, tilling soil, and harvesting for the purpose of crop production.

Some common discharge violations and frequently asked questions can be found in Chapter 3.3, namely:

- Air Compressor Condensate
- Cleaning Equipment and Floors
- Cooling Water
- Floor Drains
- Restrooms and Breakrooms
- Pit or Trench Drain Sludge
- Power Washing
- Water Treatment Additives
- Programs that help fund the upgrade of wastewater treatment systems
- Transferring ownership for an NPDES or groundwater wastewater discharge permit

3.1.1 PERMIT APPLICATIONS, REQUESTS AND REPORTS UNDER MIWATERS

MiWaters is EGLE's web-based permitting and compliance database. The system consolidates over 25 water-related applications and databases into a single online tool where permittees and permit applicants submit and retrieve all of their information. Permit applications related to water programs under this chapter and Chapter 8 are submitted electronically through MiWaters.

In addition to an electronic permitting process, MiWaters is the interface for federal electronic reporting, and it expands online access to public information. The focus of MiWaters is permitting and compliance, including NPDES, storm water, groundwater discharge, aquatic nuisance control, Part 41 (sanitary sewer) construction, and land and water interface permits such as wetlands, lakes, streams, floodplains, Great Lakes, dunes, and more. It will also include electronic reporting of untreated or partially treated sanitary wastewater.

To learn about how to file permit applications, reports, and requests in MiWaters, go to the online guidance at **Michigan.gov/miwaters**. You may also enter the MiWaters system directly at and sign up as a user at **miwaters.deq.state.mi.us**.

Below is a list of some of the functions and features that MiWaters provides:

- Electronic submittal of permit applications.
- The Electronic Environmental Discharge Monitoring Reporting (e-DMR) system is replaced with a more sophisticated system that will provide additional validation and feedback to permittees and help detect and prevent errors prior to submittal.
- Electronic submittal of all permit-required reports and materials.
- Those with a MiWaters account can manage permissions, deciding who can view, edit, and submit applications or submittals.
- POTWs can manage biosolids application sites online. Requests may be submitted through MiWaters with notification sent upon approval.
- Near real-time notifications, to the permittee, of any violations determined by the system or by staff, providing permittees with an early "heads up" and opportunity to correct problems.
- Anyone can search the system for over 600,000 sites in Michigan with EGLE permits and permit applications – active and inactive.

3.2 DISPOSAL OPTIONS

Your disposal options depend on the type of wastewater your business generates and the location of your company. These options include:

- Publicly owned treatment works (POTWs), also known as municipal wastewater treatment plants.
- Permitted and registered hazardous waste or liquid industrial by-product transporters (for wastewaters without permitted onsite POTW, NPDES, or groundwater discharge options).
- Surface water discharge (includes direct discharges to a river, stream, drain, storm sewer, or ditch).
- Groundwater discharge (includes seepage lagoons, septic tank/tile field systems, irrigation systems, and application of oil field brine for ice or dust control).

3.2.1 PUBLICLY OWNED TREATMENT WORKS

Wastewater discharges to a Part 31 permitted POTW are regulated by the local municipality or sewer authority. The discharge from a POTW is regulated by EGLE. There are variations in the design and operation of POTWs that determine the capabilities of the plant to accept and treat certain wastes. Contact your local sewer authority for a copy of the local sewer use and pretreatment ordinances to determine if your waste can be accepted by its facility. Also, review with your local sewer authority any requirements for discharge such as monitoring, record keeping, sampling, and whether industrial pretreatment regulations apply.

Most POTWs require businesses to be connected to their system for sanitary wastewater treatment and disposal. If you are constructing a new building, you will need to obtain a local permit to hook up to the POTW. Sanitary wastewater discharged directly to the POTW does not generally require pretreatment.

Many POTWs will accept some types and quantities of wastewater from non-domestic sources, including commercial, industrial and contaminated storm water, with prior approval. Discharges of some wastes to the POTW are prohibited in any amount. This includes ignitable wastes that create an explosion hazard and hazardous waste pharmaceuticals. Some substances like per- and polyfluorinated substances (PFAS) and pharmaceuticals, are not well suited for sanitary sewer disposal because they pass through typical wastewater treatment systems and enter our rivers and lakes.

In general, a POTW (under the local sewer authority) will require an application be completed to request permission to discharge. POTW staff will review the application and notify you if the waste can or cannot be discharged. In some cases, wastewater must be pretreated before it can be discharged to the sewer. A POTW accepting nondomestic wastewater may be required to develop an industrial pretreatment program (IPP) in order to accept your waste if they do not already have one. The IPP is discussed in more detail in Chapter 3.2.1.a.

If the POTW cannot accept your wastewater, then investigate disposal options through the Liquid Industrial By-product or Hazardous Waste transporter programs (see Chapters 3.2.2, 2.3 and 2.4). You may also want to explore pollution prevention approaches (see Chapter 12).

3.2.1a Industrial Pretreatment Program (IPP)

A permit or authorization from the local sewer authority may need to be obtained to discharge nondomestic wastewater to a POTW. The POTW may also determine pretreatment requirements tailored specifically to each wastewater discharge.

Foam at a treatment plant because of industrial discharge.

The purpose of the pretreatment regulations is to prevent discharge of pollutants to the POTW that would:

- Interfere with the operation of the treatment plant.
- Pass through the plant untreated.
- Create problems with disposal of sludge from the treatment plant.
- Cause health and safety problems for treatment plant workers.
- Damage or cause blockage to the sewer system.

Pretreatment standards fall into the following three categories:

1. Categorical standards are the requirements that apply to specific categories of industry. The U.S. EPA has developed these standards.
2. Individual requirements based on specific industrial or commercial activities. They are affected by the treatment capabilities and capacity of the POTW. The local sewer authority will specify these requirements.
3. General requirements apply to all facilities discharging to a POTW. This includes complying with the POTWs' pretreatment requirements. It also includes prohibitions against discharging certain pollutants to the POTW, along with reporting and record keeping requirements.

General Prohibitions:

You cannot discharge any of the following into a POTW:

- Pollutants that cause pass-through or interfere with the POTW.
- Pollutants that create a fire or explosion hazard in the POTW.
- Pollutants that corrode sewer conveyance or the POTW (specifically any wastewater with a pH less than 5).
- Solid or viscous pollutants that could interfere with wastewater flow.
- Pollutants that result in toxic gases, vapors, or fumes within the POTW at levels that may cause worker safety or health problems.
- Any trucked or hauled pollutants except POTW approved wastes at discharge points designated by the local sewer authority.

Reporting and Record Keeping:

The local sewer authority must know what is being discharged to its treatment system by every industrial or commercial user on the system. The sewer authority also needs to know about any spills or other problems flowing toward the treatment plant via the sewer. You must notify the POTW immediately of any discharge or release, including "slug loading," that could cause problems at the plant. A slug loading is defined as 1) any relatively large release of a pollutant that you might ordinarily release in smaller quantities, or 2) a release of a chemical you aren't permitted to discharge. You must notify the sewer authority in advance of any substantial change in the amount or type of pollutants in your discharge.

If you are required to sample your wastewater, you must report results and keep records on all the sampling information. Records for all samples must include:

- The date, exact place, method, time of, and name(s) of person(s) taking the samples.
- The dates analyses were performed.
- The laboratory that performed the analyses.
- The analytical techniques or methods used, including detection limit.
- The results of the analyses.

Results of required sampling must be reported to the sewer authority. The report must include a certification statement and authorized signature of a company representative.

Records of any additional monitoring must also be kept when you use test methods found in Title 40, Part 136 of the Code of Federal Regulations (40 CFR 136), even if the local sewer authority does not require it. All of these records must be kept for a minimum of three years.

Hazardous Waste Notification:

The U.S. EPA added a provision to the pretreatment standards in 1990 to assure that businesses are not avoiding hazardous waste regulation by discharging hazardous waste directly to the sanitary sewer (**40 CFR 403.12**). Prior authorization from the local sewer authority must be received to discharge any substance that would be classified as hazardous waste under the federal Resource Conservation and Recovery Act (RCRA) and Part 111 (Hazardous Waste Management) of Act 451. In addition, the U.S. EPA and EGLE must be notified within 180 days of any discharge of hazardous waste to the POTW.

This includes any waste:

- On the acutely hazardous waste list and any amount that is discharged; or
- Any other type of listed hazardous waste if more than 15 kilograms are discharged in a calendar month.

Refer to Chapter 2 for an explanation of listed and acutely hazardous waste.

If a new substance is added to the RCRA list and your business discharges that substance, the local sewer authority, EGLE, and the U.S. EPA Region 5, should be notified within 90 days of the new listing. Some sewer authorities have written notification forms. If not, then you can submit the required information in a letter. Send the EGLE and U.S. EPA, respectively, to:

EGLE
Management & Tracking Unit
P.O. Box 30038
Lansing, MI 48909

U.S. EPA Region 5
Waste Management Division
77 West Jackson Boulevard
Chicago, IL 60604

The notification must include:

- Company name, address, and U.S. EPA identification number (if one has been issued).
- The name of the hazardous waste as listed in 40 CFR 261.
- The U.S. EPA hazardous waste code number.
- The type of discharge (continuous, batch, other).

If you discharge more than 100 kilograms of hazardous waste per month to the POTW, you must also include the following in the notification:

- The hazardous waste constituents contained in the waste.
- An estimate of the quantity (mass and concentration) of hazardous constituents discharged during that month.
- An estimate of quantity of discharge for the next 12 months.

This notification only has to be submitted once unless the discharge changes. If notification of hazardous waste discharge is required, you must also certify that a program has been developed to reduce the amount and toxicity of the hazardous waste generated to the degree that you are economically able. Discuss these requirements with the local sewer authority.

3.2.2 HAZARDOUS WASTE, LIQUID INDUSTRIAL BY-PRODUCTS, AND SEPTAGE TRANSPORTATION – PUMP AND HAUL

Most wastewater, when pumped and hauled for disposal (e.g., not direct piped to a receiving facility nor authorized for on-site disposal via Part 31 discharge permit or permit by rule), are generally subject to hazardous waste, liquid industrial by-product or septage waste regulation. Only if a material is specifically excluded from regulations is it excluded. The following details the transporter permitting, registration and licensing that applies to materials that must be pumped and hauled for recycling or disposal. For additional details, see Chapters 2 and 4 of this guide and the Receiving Facility Reporting Regulations guide.

3.2.2a Hazardous Waste and Liquid Industrial By-products Transportation

Wastewater, excluding septage waste, which is not discharged to a POTW nor permitted to be discharged to surface or groundwater, must be transported to a recycling or disposal facility authorized to accept the wastewater. Wastewater subject to hazardous waste regulation must be documented on a **Uniform Hazardous Waste Manifest** and transported by an **Act 138** permitted and registered hazardous waste transporter. If the wastewater is not subject to hazardous waste regulation or septage regulation, a company may haul its own wastewater without a permit and registration from EGLE under Act 138 if it was generated on or by equipment in which the generator held an ownership interest. A company may also hire an Act 138 permitted and registered liquid industrial by-products transporter. The shipment of liquid industrial by-products can be documented on a Uniform Hazardous Waste Manifest or other shipping record that meets

the Part 121 liquid industrial by-products regulations. See Chapters 2.4.4 and 2.4.5 for details on the specific documentation requirements. See Chapter 4 for the transporter permitting and registration, or EGLE's Hazardous Materials Transportation Program web page at **Michigan.gov/EGLEwaste** and selecting the "Transporters" tab on the left.

3.2.2b Septage Transportation

Septage waste must be hauled by licensed septage waste transporters authorized under **Part 117**. Septage waste haulers seeking to commingle septage waste with liquid industrial by-product generally require dual licensing under both Part 117 and **Act 138** and they are prohibited from land application of materials. However, Part 117 includes an allowance for the blending of grease trap waste with domestic septage to be managed as septage and allowed to be land applied. For more information about septage wastewater, excluding septage waste, which is not discharged to a POTW nor permitted to be discharged to surface or groundwater, must be transported to a recycling or disposal facility authorized to accept the wastewater. Wastewater subject to hazardous waste regulation must be documented on a **Uniform Hazardous Waste Manifest** and transported by an **Act 138** permitted and registered hazardous waste transporter. If the wastewater is not subject to hazardous waste regulation or septage regulation, a company may haul its own wastewater without a permit and registration from EGLE under Act 138 if it was generated on or from property or equipment in which he or she owns an interest. A company may also hire an Act 138 permitted and registered liquid industrial by-products transporter. The shipment of liquid industrial by-products can be documented on a Uniform Hazardous Waste Manifest or other shipping record that meets the **Part 121** liquid industrial by-products regulations. See Chapters 2.4.4 and 2.4.5 for details on the specific documentation requirements, Chapter 4 for the transporter permitting and registration, or EGLE's Hazardous Materials Transportation Program Web page by going to **Michigan.gov/EGLEwaste** and selecting the "Transporters" tab on the left.

Septage waste must be hauled by licensed septage waste transporters authorized under Part 117. Septage waste haulers seeking to commingle septage waste with liquid industrial by-product generally require dual licensing under both Part 117 and Act 138 and they are prohibited from land application of materials. However, Part 117 includes an allowance for the blending of grease trap waste with domestic septage to be managed as septage and allowed to be land applied. For more information about septage or dual licensing, see the **Septage Program Web page** at **Michigan.gov/EGLEseptage**, select the **Staff Contacts List** and contact the Septage Program Coordinator.

3.2.3 SURFACE WATER DISCHARGE

Applications for discharge permits are completed and submitted online through the **MiWaters** system (Chapter 3.1.1). Guidance for the system is available at **Michigan.gov/MiWaters**.

3.2.3a Individual Permits

An individual NPDES permit is site specific. The limitations and requirements in an individual permit are based on the permittee's discharge type, the amount of discharge, facility operations (if applicable), and receiving stream characteristics.

3.2.3b Permit-by-Rule: Construction Stormwater Runoff

Construction sites of one acre or greater of earth disturbance are covered by a "permit-by-rule." "Permit-by-rule" (Rule) means that permit requirements are stated in an administrative rule formally promulgated by the Water Resource Division. A facility requiring coverage under the Rule must abide by the provisions written in the Rule.

Owners or recorded easement holders of earth change (construction) sites of five acres or more must go through MiWaters (Chapter 3.1.1) to submit a form called a **Notice of Coverage** (NOC) to apply for their NPDES permit coverage to discharge stormwater runoff. In order to submit a NOC, the applicant must first obtain permit coverage under a local Soil Erosion and Sedimentation Control (SESC) Program (see Part 91 in Chapter 8). Authorization to discharge stormwater runoff under the Rule is automatically granted upon submittal of a complete NOC and an application fee.

Earth change sites that disturb one to five acres are provided automatic coverage so long as the site has coverage under the local SESC Program. Even though there is no application requirement or permit fee for one- to five-acre sites, construction site owners must comply with the Rule requirements. A site disturbing less than one acre must also follow the Rule if the site is part of a larger common plan of development that exceeds one acre of disturbance, or if it has the potential for adverse impacts on water quality.

The Rule requires an owner of a construction site to provide for weekly inspections of the soil erosion and sedimentation control practices identified in their SESC Permit. In addition, the site shall be inspected after any rain event that causes a discharge from the site. These inspections shall be conducted by a Storm Water Certified Operator and recorded by the Operator in an inspection log. The certification materials and testing to become a Storm Water Certified Operator are available in each of EGLE's District Offices.

Construction site inspection by a Certified Storm Water Operator

For more information on Permit-by-Rule, including application materials, certified operator exam training materials and exam schedules, or storm water program contact information, contact any EGLE's District Office or go to **Michigan.gov/SoilErosion.**

3.2.3.c General Permits

A general permit may be available to permittees with certain similar operations and/or types of discharge. Coverage under a general permit will only be granted when the general permit conditions provide the needed level of protection for the receiving water. Wastewater discharges at some locations may require an individual permit based upon site-specific concerns. Facilities determined to be eligible for coverage under a general permit receive a *Certificate of Coverage* (COC) from the NPDES Permit Program usually within four to six weeks of submitting a complete application. Some general permits include Storm Water from Industrial Activities (discussed below), Wastewater from Cleanup of Water Contaminated by Gasoline and Related Petroleum Products, Noncontact Cooling Water, and Hydrostatic Pressure Test Water.

For a full list of general permits, and permit copies, go to Michigan.gov/EGLENPDES ("General NPDES Permits").

3.2.3.d Storm Water from Industrial Activities General Permit

There are two types of general storm water permits available in Michigan: a baseline general permit and a general permit for storm water discharges associated with special-use areas. Facilities may also receive coverage for industrial storm water discharges through a site-specific individual permit.

If your facility's storm water discharges directly to surface waters of the state or to a separate storm sewer system (to help with this determination see Question 2 in this Chapter's Key), two steps are required to determine if storm water permit coverage is necessary.

Step one is to determine if the industry is identified in the federal storm water regulations. Standard Industrial Classification (SIC) codes prepared by the federal Office of Management and Budget, or narrative descriptions, are used to identify regulated facilities. SIC codes describe the primary nature of business in which a facility is engaged. In general, the following industrial categories are regulated:

- Manufacturing (SIC 20— through 39—)
- Public Warehousing (SIC 422-)
- Transportation (SIC 40— through 45—)
- Mining (SIC 10— through 14—)
- Open Landfills
- Steam Electric Power Plants
- Recycling Facilities
- Wastewater Treatment
- Hazardous Waste Storage and Treatment

You can find your four-digit SIC code in your corporate tax return under Schedule K listed as either "Business Activity Code" or "Manufacturers Identity Code." Or call Michigan's Unemployment Insurance Agency at 800-638-3994 and provide your federal identification number to get your official SIC code. A more complete listing of **SIC codes** can be found at MIchigan.gov/IndustrialStormwater.

The second step is to determine whether storm water could come into contact with industrial materials or activities at the site. Basically, if you store or transport ANYTHING related to your industrial activity outside without permanent covering (exempting final products manufactured for use outside such as a completed automobile), it can come into contact with storm water and the quality of the storm water runoff could be affected. The term "exposure" is used in the storm water program to indicate the potential for contact between storm water and your industrial materials. This includes outside storage of scrap dumpsters and any raw materials associated with your industrial activity.

If your facility's industrial activity is regulated and storm water from the property discharges to surface waters of the state, then you must either certify that you have no exposure or obtain permit coverage. The action you take will be dependent upon exposure at the site. Guidance as to whether you have exposure can be found on the **Industrial Storm Water Program Web Site**. Documents to review include: "**Determining if a Facility is Required to Obtain Permit Coverage**" and "**No Exposure Certification (NEC) Compliance Assistance**"

If after reviewing the no exposure assistance document, you find that you do not have exposure at the site, you can submit a "No Exposure Certification" form in the MiWaters system (Chapter 3.1.1) instead of obtaining coverage under the general permit. If you chose to operate your facility without exposure, you may still want to have storm water certified operators among your housekeeping team to help recognize practice changes that could cause you to need coverage (such as moving equipment outside).

In summary, if you answer "yes" to all the following questions, you need an industrial storm water permit:

1. Do I have a storm water discharge to surface waters of the state?
2. Is my company regulated by the storm water program?
3. Do I store or transport industrial materials outside that could meet storm water?

To apply for coverage, submit a **"***Notice of Intent (NOI)***"** through the MiWaters system (Chapter 3.1.1). If coverage under the Storm Water from Industrial Activities General Permit is appropriate, a Certificate of Coverage (COC) will be issued once a complete NOI has been received by EGLE. There is an annual storm water permit fee of $260. Before obtaining a COC, you must:

- Have a storm water certified operator who has control over the storm water structures at the facility and has the authority to change operations to minimize or eliminate impacts to storm water (see Chapter 3.4).
- Eliminated any unauthorized non-storm water discharges to the storm sewer system and waters of the state.
- Have a Storm Water Pollution Prevention Plan (SWPPP) developed and implemented for existing facilities or have a SWPPP developed and ready for implementation at new facilities (see Chapter 6.2.4).

Conducting Visual Assessments of Industrial Storm Water Discharges

Conducting visual assessments of storm water discharges from areas of industrial activity is a new permit requirement for facilities in Michigan with industrial storm water permit coverage under the newly issued general permits and individual permits with storm water coverage. The visual assessment is part of the comprehensive inspection conducted by the Industrial Storm Water Certified Operator at the facility.

3.2.4 GROUNDWATER DISCHARGE

The Part 22 rules of Part 31 (Water Resources Protection) of Act 451 govern authorization to discharge to the groundwater of the state of Michigan. There is an annual fee for groundwater permit coverage. The discharge authorizations in the rules are established in order of relative threat to the environment, and the program's annual fees are set in the same manner. The annual fee can be $200, $250, $1500 or $3650, depending on the type of permit appropriate for your facility.

Certain activities are exempt from obtaining permits; these are listed in **Rule 323.2210**; while discharge authorizations are issued under:

- Rule 323.2210(y) (site-specific low volume discharge)
- Rule 323.2211 (notification only)
- Rule 323.2213 (notification with certification)
- Rule 323.2215 (general permit)
- Rule 323.2216 (permit with specific treatment system requirements)
- Rule 323.2218 (full permit)

Some wastewaters cannot meet groundwater permit effluent limits and therefore are not suitable for land disposal. A few examples include dental office mercury bearing wastewaters and funeral home formaldehyde bearing wastewaters. For more information on the different types of groundwater discharge authorizations available, please see the following section.

Groundwater Discharge Application

Instructions for the groundwater discharge permit application are organized to assist the applicant in determining the type of permit required and how to obtain it. The instructions list reference materials such as applicable laws, rules and guide sheets, and how to access them. Many of the discharges require supporting documentation in addition to the application form. The guide sheets describe how to gather and report the information in a manner that is acceptable to EGLE. This does not preclude the use of alternative methods; only that if the guidance is followed, the methodology for collecting and reporting the information will be acceptable. Separate application forms incorporate the requirements of each rule.

Each application is a complete stand-alone process with two parts. The first part consists of general information. The second part is tailored to the specific rule covering the discharge type. Certain applications cover multiple types of discharges. Complete the sections that apply to the particular discharge.

The application instructions can be accessed at **Michigan.gov/GroundwaterDischarge** under "Permits and Fees." Applications are located in MiWaters at **miwaters.deq.state.mi.us/miwaters/** or at **Michigan.gov/EGLEWater.** All applications must be submitted through the MiWaters site.

Applicants new to the groundwater program and MiWaters must create an account. Those seeking reissuance of a previous permit should have received information about becoming associated with an existing account in MiWaters.

Creating an account is a two-step process. Upon accessing the MiWaters site, choose "Create an Account" located in the upper-right section of the page. Complete the information requested on the page and download the Certifier Agreement Form you will need for step two. Once you create an account you will receive an emailed acknowledgement with further instructions for logging in. With this access you can view and begin filling out an application. In step two, complete the downloaded Certifier Agreement Form and mail it as instructed. Once the certifier status has been approved, your e-mail address will identify your security status, enabling you to submit the application.

If you have questions, call the Groundwater Discharge Unit at 517-284-5570 or your local EGLE District Office for assistance.

Groundwater Discharge Permit Renewal

Renewal of a groundwater discharge permit can be divided into two categories. The first is for the same quantity and characterization of discharge(s), and the same treatment process as the previous permit. The second is for effluent quantity, characterization or treatment processes that are different from the previous authorization. In both cases the applicant must submit a complete permit application, but the information to be included with the permit application will be more detailed if the discharge or treatment system is different.

Groundwater Discharge Permit Renewal: No Change in Discharge

The applicant must submit a complete permit application, as described above, and the following information:

- A certification by the discharger that the discharge will consist of the same quantity, effluent characterization, and treatment process as previously permitted.
- A narrative description of the facility's compliance history with effluent and groundwater permit limits and sampling frequency.
- If permit limits were exceeded, describe the steps taken to bring the facility into compliance.

- An evaluation of whether there are general trends in the effluent or groundwater sampling data that may indicate the discharge is approaching permit limits if the renewal is under Rule 2218.
- A current groundwater contour map, if one was previously required, a narrative evaluation of whether changes to the existing groundwater monitoring system are warranted, and the rationale for any proposed change.
- The most recent effluent quality results.
- For existing monitoring wells, the most recent groundwater quality results.
- For existing monitoring wells, the most recent static water levels, and groundwater elevations.

Groundwater Discharge Permit Renewal: Modified Discharge - Reissuance

A permittee may request a modification of their discharge at any time, either during the life of the permit, or at reissuance.

For a discharge where the applicant changes the effluent quantity, characterization or treatment process at the time of reissuance, the complete application must include:

- Updated information for areas modified including (where appropriate):
  - The basis of design as required by Rule 2218(2).
  - An evaluation of the feasibility of alternatives to discharge to the groundwater in accordance with R 323.2219.
  - The wastewater characterization as required by R 323.2220.
  - The hydrogeologic report as required by R 323.2221.
  - If a standard applicable to the discharge is to be determined under R 323.2222(5), the information necessary to determine that standard, including whether a substance is a hazardous substance under Part 201.
  - If applicable, the monitoring plan as specified by R 323.2223.
  - If applicable, a description of the discharge methods and information that demonstrate that the requirements of R 323.2233 will be met.
  - If applicable, information that demonstrates that the requirements of R 323.2237 will be met.
- A narrative description of the facility's history of compliance with effluent and groundwater permit limits and sampling frequency.
- If permit limits were exceeded, the steps taken to bring the facility into compliance.
- An evaluation of whether there are general trends in the effluent or groundwater sampling data indicating that the discharge is approaching permit limits if the renewal is under Rule 2218.

- A current groundwater contour map, if one was previously required, a narrative evaluation of whether changes to the existing groundwater monitoring system are warranted and the rationale for any proposed change.
- The most recent effluent quality results.
- For existing monitoring wells, the most recent groundwater quality results.
- For existing monitoring wells, the most recent static water levels, and groundwater elevations.

Groundwater Discharge Permit Renewal: Modified Discharge – In Effect Permit

For a discharge where the applicant changes the effluent quantity, characterization, or treatment process during the period when the permit is "In Effect," the following process will apply:

- A discharger who proposes to modify the quantity or effluent characteristics of a discharge shall notify EGLE of the proposed modification before it occurs. If EGLE determines the proposed modification is minor based on the quantity or quality of the discharge, then EGLE may modify the permit as requested and include new terms or conditions that may be necessary to ensure that the terms of R 323.2204 are met. If EGLE determines that the proposed modification is significant based on the quantity or quality of the discharge, then the discharger shall submit a complete permit application for reissuance of the permit similar to (b) above.
- A discharger who proposes to modify the treatment process of a discharge shall notify EGLE of the proposed modification before it occurs. Unless EGLE notifies the discharger within 30 calendar days that the proposed modification may affect compliance with limitations on the quality or quantity of the discharge, the discharger may make the modification. If EGLE notifies the discharger and determines that the proposed modification is minor based on the quantity or quality of the discharge, then EGLE may modify the permit as requested and include new terms or conditions that may be necessary to ensure that terms of R 323.2204 are met. If EGLE notifies the discharger and determines that the proposed modification is significant based on the quantity or quality of the discharge, then the discharger shall submit a complete permit application for reissuance of the permit similar to (b) above.

3.3.4.a Exemptions, Rule 2210

Certain discharges to the ground are exempt from needing authorization from EGLE, such as sanitary sewage that is discharged at less than 6,000 gallons per day when the discharge is under the jurisdiction of the local county health department. There are other examples of exempt discharges including:

- Potable water used for domestic or domestic equivalent activities (Rule 2210(i)).
- Sanitary sewage less than 6,000 gallons per day, through a septic tank and tile field system, approved by the local health department. (Rule 2210(a)).

- Controlled application of certain dust suppressants (Rule 2210(b)).
- Temporary well dewatering water at construction sites (Rule 2210(e)).
- Swimming pool drainage and backwash if done in accordance with Act 368. (Rule 2210(n)).
- Confined animal feeding operations less than 5,000 animal units (Rule 2110(f)(g)).
- Monitoring well observation or evacuation water (Rule 2210(h)).
- Step test or pump test water from various sources (Rule 2210(j)).
- Heat pump wastewater where systems are rated as less than 300,000 BTUs per hour if there are no chemical additives (Rule 2210(l)).
- Portable Power Washer wastewater **that uses no additives** from domestic sources or commercial operators (Rule 2210(m)).
- Non-contact cooling water **that has no additives** where there is less than 10,000 gallons per day, and where the source water was from a municipal water supply (or alternate approved source) (Rule 2210(q)).

A more complete list of these discharges can be found in the appendix and in the groundwater discharge authorization application. While the law and rules provide that a person does not need a permit for the discharge of the above discharges, the law also does not waive liability for causing injury to the waters of the state. This means the discharge cannot cause waters of the state to lose their usefulness for drinking, agriculture, recreation, industry, or other protected uses. Even though these activities do not require a permit, there are certain conditions that must be met according to the law, including the following:

- A prohibition against causing physical damage to neighboring properties or creating nuisance conditions (i.e., runoff onto adjacent properties, ponding or flooding of adjacent properties, odors).
- A prohibition against creating a site of environmental contamination that would need to be cleaned up.
- For these discharges an application does not have to be submitted. In addition, some discharges to the ground or groundwater, which are not specifically addressed under Rule 2210, may be authorized on a case-by-case basis under Rule 2210(y). Such is the case if the applicant demonstrates to EGLE's satisfaction that the discharge will not have a significant potential to be injurious based on volume and constituents of the discharge. For EGLE to determine if a particular discharge exemption will be allowed, a discharger must submit an application that includes a narrative description justifying the request for the Rule 2210(y) authorization with the permit application. These discharges are assessed an annual fee of $1,500, except for the following discharge types, which are $250:

- Coin operated laundromat
- Car wash or vehicle wash open to the public
- Subsurface sanitary discharge of fewer than 10,000 gallons per day that does not meet the terms of authorization under Rule 2211(a)
- Seasonal sanitary wastewater facility from a park, campground, or camp

3.3.4.b Notification, Rule 2211

Some wastewater dischargers may be able to obtain an authorization to discharge by notification. These include:

Wastewater Type	Daily Maximum Discharge, Gallons
Sanitary Sewage, septic tank/drain field	6,000 – 10,000
Laundromat	< 500
Non-contact Cooling Water, no additives	>10, 000
Fruit & Vegetable Wash water	<50,000
Portable Power Washer, no additives Pump Test Water Hydrostatic Test Water Commercial Animal Care	Varies by discharge type

To obtain this type of authorization a facility must complete a groundwater discharge authorization application. A facility is authorized to discharge once an adequate and complete application is received by EGLE. As long as the discharger certifies that they meet the individual rule criteria a facility will be authorized to discharge at the time an adequate and complete application is received by EGLE. If the application is complete and meets the requirement of the rule, EGLE will authorize the discharge via a permit. If the application is deficient, EGLE will notify the applicant and any deficiencies must be corrected before the discharge is authorized. The annual fee for this type of authorization is $200.

Groundwater Infiltration Bed

3.2.4.c Notification with Certification, Rule 2213

A notification with certification is required for specific discharges. These discharges include:

Wastewater Type	Daily Maximum Discharge, Gallons
Non-contact cooling water, with additives	< 10,000
Egg washing wastewater, may contain additives	< 10,000
Cooling water, may contain additives Groundwater remediation, outside plume	< 5,000

To obtain this type of authorization a facility must complete a groundwater discharge authorization application. Within 60 calendar days of receiving a complete application, EGLE will issue a permit verifying that the discharge is authorized or will indicate why the discharge cannot be authorized under the rule. The annual fee for this type of authorization is $200.

3.2.4.d General Permit, Rule 2215

An authorization for certain discharges can be granted by EGLE under a general permit.

Wastewater Type	Daily Maximum Discharge, Gallons
Above ground sewage disposal	< 10,000 (annual average)
Vehicle wash, not open to the public	< 2,000
Meat processing that does not include slaughter	< 2,000 (annual average)
Gravel, sand, limestone, or dolomite mining, no additives Application of oil field brine Vehicle wash, open to public Hydro-demolition	< 2,000 for vehicle wash

To apply for coverage, submit the permit application to EGLE along with information that demonstrates conditions required by the general permit. A facility is authorized to discharge to the ground or groundwater once they receive a Certificate of Coverage from EGLE that verifies the discharge is authorized under this rule. The annual permit fee for Rule 2215 authorization is $1,500, except for seasonal above ground sewage disposal discharges from campgrounds and camps, which have an annual fee of $250.

Sanitary Sewage Treatment Lagoon

3.2.4.e Permit for a Specific Discharge, Rule 2216

This type of authorization is granted for specific discharges and treatment components, including:

Wastewater Type	Daily Maximum Discharge, Gallons
Sanitary Sewage, Constructed Wetland	less than 20,000
Sanitary wastewater, Alternative Treatment System	less than 20,000
Sanitary Sewage, Rule 2216 Design	less than 50,000
Laundromat Wastewater, Rule 2216 Design	less than 20,000

To apply for authorization, the application for groundwater discharge authorization must be submitted to EGLE. As part of the application process, the applicant must certify in the application that they provided public notice of the project in accordance with Rule 2217(2). Typically, facilities should obtain assistance from an environmental consultant for this type of coverage. The annual permit fee for this coverage is $1,500.

3.2.4.f Discharge Permit, Rule 2218

Large volume or complex discharges that are not covered above must obtain authorization under Rule 2218. The following are some examples of discharges that require a 2218 permit.

- ✓ Sanitary sewage (greater than 50,000 gallons per day).
- ✓ Process wastewater.
- ✓ Cooling water at greater than 5,000 gallons per day with additives.
- ✓ Non-contact cooling without additives at greater than 10,000 gallons per day, source water not approved by EGLE.
- ✓ Non-contact cooling water with additives at greater than 10,000 gallons per day.

Application for this permit include submittal of the following types of information along with the permit application: a basis of design for the wastewater treatment system, discussion of alternatives to a groundwater discharge, wastewater characterization, a hydro-geological study and groundwater monitoring and a discharge management plan. Facilities are strongly urged to obtain assistance from environmental consultants for completion of these items. EGLE has prepared Guidesheets I-VII that to assist the applicant on the types and format of information required for this additional information. The annual permit fee for Rule 2218 authorization is $3,650.00.

Guidance information on groundwater discharge permit and application requirements (Part 22 Guidesheets) are available on the Internet at **Michigan.gov/GroundwaterDischarge**.

3.2.5 DEEP INJECTION WELL DISPOSAL

Class I injection dispose of industrial hazardous, industrial non-hazardous and municipal (non-hazardous) waste. These wells are sited and constructed such that they are protective of drinking water. Fluid disposal is below all underground source of drinking water and must include confining zone(s) above the injection zone. Injection zone reservoirs typically range in depth from 1,700 to over 10,000 feet below the surface. Typical costs associated with constructing a deep injection well are around a million dollars.

Class I injection well disposals in Michigan are regulated both by the U.S. EPA, and EGLE's Oil, Gas and Minerals Division (OGMD). A permit must be obtained from both EGLE and the U.S. EPA for this wastewater disposal option and consultants are typically utilized for permitting, construction and testing of these wells. The timeline associated with permit issuance would be six months to a year for both agencies. For more information, **contact EGLE**, Lansing Office at 517-284-6826, or appropriate District Office.

UIC Branch (WU-16J)
U.S. EPA Region 5
77 W. Jackson Blvd.
Chicago, IL 60604-3590
312-886-1493

There are some general operating requirements for a deep injection well, including regular testing to demonstrate mechanical integrity of the well. There is a monthly reporting requirement for volumes of fluid injected and operating pressures and a $2,500 fee per disposal well for the state program.

In those instances where the waste is considered hazardous and the processor is storing and or treating the waste prior to discharge, the facility is subject to the Treatment, Storage, and Disposal Facilities permit. Discuss the requirements with EGLE's Hazardous Waste Program.

3.3 COMMON NON-COMPLIANCE AND FREQUENTLY ASKED QUESTIONS

There are several issues that are commonly associated with non-compliance or areas where staff receive many questions. The following section discusses some of these.

3.3.1 WATER TREATMENT ADDITIVES

Water Treatment Additives (WTAs) include any material that is added to water used at a facility or to a wastewater generated by the facility to condition or treat the water. Biocides, algaecides, herbicides, sanitizers, flocculants, and lubricants are examples of water treatment additives that can be found in the wastewater of facilities. WTAs that are discharged to surface waters of the state from a National Pollutant Discharge Elimination System (NPDES) permitted discharge or a groundwater discharge permit require prior review and approval by the Water Resources Division (WRD). Permittees should check their NPDES permit and/or groundwater discharge permit

requirements to determine if they need to apply prior to using a WTA. As such, these WTA products must be included in the application for wastewater discharge or requested during the permit cycle. WTAs must be reviewed whenever they are changed; the use of the new WTA could change the characteristics of the wastewater effluent. Both groundwater and NPDES permits require prior review and approval before new WTA's can be used.

NPDES Permits:

In the event a permittee proposes to discharge water treatment additives (WTAs) at a facility with a NPDES permit, the permittee must submit a request through MiWaters (Chapter 3.1.1; click on either *non-select* or *select* water treatment additives discharge application instructions under the heading of Water Treatment Additives). Written approval from EGLE to discharge such WTAs at specified levels shall be obtained prior to discharge by the permittee. Failure to obtain approval prior to discharging any WTA is a violation of the permit. Additional monitoring and reporting may be required as a condition for the approval to discharge the WTA.

The request to discharge WTAs must contain the following information. If any of this information is missing the request cannot be processed:

1. The WTA Safety Data Sheet (SDS).
2. Ingredient information: Name of each ingredient, CAS number for each ingredient, and fractional content by weight for each ingredient.
3. The proposed WTA discharge concentration including calculations to explain the discharge concentration.
4. The discharge frequency (i.e., number of hours per day, week, etc.).
5. The outfall(s) from which the WTA is to be discharged.
6. The type of removal treatment, if any, that the WTA receives prior to discharge.
7. The WTA function (i.e., microbiocide, flocculant, etc.).
8. A 48-hour LC_{50} or EC_{50} for a North American freshwater planktonic crustacean (either Ceriodaphnia sp., Daphnia sp., or Simocephalus sp.).
9. The results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2)(a) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour LC_{50} for a rainbow trout, bluegill, or fathead minnow.

More information on obtaining authorization to discharge water treatment additives can be obtained at **Michigan.gov/EGLENPDES** (click on either non-select or select water treatment additives discharge application instructions).

For Groundwater Discharge Permits:

In the event a permittee proposes to discharge water treatment additives (WTAs) to groundwater, the permittee shall submit a request through MiWaters to discharge WTAs. Instructions to submit a request through MiWaters at (**Michigan.gov/EGLEnpdes** ; then click on either non-select or select water treatment additives discharge application instructions under the heading of **Water Treatment Additives**). Written approval from the Department to discharge such WTAs at specified levels shall be obtained prior to discharge by the permittee. Failure to obtain approval prior to discharging any WTA is a violation of this permit. Additional monitoring and reporting may be required as a condition for the approval to discharge the WTA. WTAs include such chemicals as herbicides used to kill weeds and grasses as part of lagoon maintenance.

A request to discharge WTAs to groundwater shall include all of the following:

1. Product Information:
    a. Name of the product.
    b. Product Safety Data Sheet (SDS).
    c. Product function (i.e., microbiocide, flocculants, etc.).
    d. Specific gravity if the product is a liquid.
    e. Annual product use rate (liquids in gallons per year and solids in pounds per year).
2. Ingredient information including the name of each ingredient, the CAS number for each ingredient; and the fractional content by weight for each product.
3. The monitoring point from which the WTA is to be discharged.
4. The proposed WTA discharge concentration, including calculations to explain the discharge concentration.
5. The discharge frequency (i.e., number of hours per day and number of days per year).
6. The type of removal treatment, if any, that the WTA receives prior to discharge.
7. Relevant mammalian toxicity studies for the product or all of its constituents (if product toxicity data are submitted, the applicant shall provide information showing that the product tested has the same composition as the product listed under Item “a” above. Preferred studies are subchronic or chronic in duration, use the oral route of exposure, examine a wide array of endpoints, and identify a no-observable-adverse-effect-level. If this preferred data is not available, then the minimum information needed is an oral rat LD50 study. In addition, an environmental fate analysis that predicts the mobility of the product/ingredients and their potential to migrate to groundwater may be provided.
8. If the discharge of the WTA to groundwater is within 1,000 feet of a surface water body, the following information shall also be provided:
    a. A 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either Ceriodaphnia sp., Daphnia sp., or Simocephalus sp.).

b. The results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour LC_{50} for a rainbow trout, bluegill, or fathead minnow.

Prior to submitting the request, the permittee may contact the Permits Section at 517-284-5568 with any questions.

Note: The availability of toxicity information for a water treatment additive does not constitute approval to discharge the water treatment additive. You must receive facility-specific and written approval.

For Discharges to a POTW

If you discharge to a POTW, then check with the local sewer authority to see what is required to change additives or products, as there may be similar restrictions. Some communities might have local requirements for cleaning solutions. For example, some communities require that low or no phosphate detergents and additives be used. It is generally recommended that low or no phosphate detergents and additives be used in all areas. Calling the POTW before discharging is especially important for products associated with boiler blow down activities and other sanitizers.

3.3.2 CLEANING EQUIPMENT AND FLOORS

Cleansers used for industrial cleaning, even if they are the same formula as standard household cleaners, are considered non-domestic wastewater if generated from cleaning industrial equipment or the area around it. These activities have the potential of introducing contaminants to the wastewater that are not typically found in household wastewater, such as machine lubricants, etc. Therefore, substances that may be in the cleaning water, and the solutions or detergents used for cleaning, must be included in the application for wastewater discharge. It is unlikely that this discharge would be authorized to go directly into surface water or groundwater without treatment.

Some management practices for consideration include:

- Keep water use to a minimum when cleaning floors. Hoses should not be used to “wash down” the floors. Mop floors with biodegradable floor detergent according to the manufacturer’s directions. Any accumulation should be recovered by a wet vacuum or mop.
- Minimize or eliminate the use of degreasers and solvents where possible. Degreasers put oil into a solution, which makes it nearly impossible to remove the oil from the wastewater by conventional methods. Overuse of degreasers will make oil/water separators ineffective. Degreasers could also contain volatile organic compounds, which can be toxic and are highly mobile.
- Pressure washers use less water and generate much less wastewater per minute than a standard hose. They clean more effectively, reducing the need for chemical cleaning agents.

3.3.3 COOLING WATER

Water used for machine cooling; solvent coolers and stills; condensers; or in heating, ventilation, and air conditioning (HVAC) systems is considered non-domestic wastewater. This water cannot be discharged to the surface water without a permit. A discharge to the ground or groundwater requires an exemption, notification, or permit. To discharge water used for cooling to the publicly owned treatment works, you should have authorization from the local treatment authority. These disposal options are discussed further in Chapter 3.2. Chemicals and/or biocides or algaecides are sometimes used to prevent scale build-up, freezing, or slime growth. If additives are being proposed, then review Chapter 3.3.1.

3.3.4 FLOOR DRAINS

Many manufacturing facilities have floor drains and trench drains that are connected to their wastewater treatment system and are authorized under their facility's discharge permit. However, an inspection of the facility should be conducted to assure that all floor drains are properly connected to the wastewater system and are authorized under a permit instead of discharging to the environment, either directly or through a separate storm sewer system.

Visit the Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, **Plumbing Division**, at Michigan.gov/lara, for Michigan's Plumbing Code.

Except for discharges authorized under a discharge permit program, it is unlikely that a groundwater or surface water discharge permit will be issued for floor drain waste as most of these built-in connections and conveyances are prohibited in local building and plumbing codes. Sections 701.2 and 1104.3 of the Michigan Plumbing Code (R 408.30701 et seq.) require floor drain discharges go to an available sanitary sewer system or an approved private system and prohibit connections of floor drains to storm sewers. Many fluids are prohibited from discharge entirely due to the hazardous chemicals in them. Some POTWs will accept waste from floor drains, such as antifreeze, engine wash down water, small quantities of oily substances, etc., at specific rates and times. Wastewater that is not authorized for discharge must be managed and disposed of as a liquid industrial by-product or hazardous waste depending on its classification. See Chapter 2.4.2 for information on how to determine waste and by-product classification.

Currently, waste entering floor drains is legal only if the discharge goes to one of the following:

- The facility's wastewater collection system that treats the wastewater and is authorized through the Groundwater Discharge Permit Program or NPDES (Chapters 3.2.3 and 3.2.4).
- POTWs, if in accordance with local ordinances (Chapter 3.2.2)
- Holding tanks, which the wastewater and sludge is later pumped out and hauled to an approved facility (Chapter 3.2.2). Holding tanks should be located to allow for easy access for cleaning and repair. If a facility wants to dry the materials out on-site to save on transportation and disposal costs, see Chapter 3.3.5.

Any floor drains that do NOT discharge to any of the above must be closed off or rerouted to an authorized destination. Plugging the drainpipe that connects to the storm sewer/drain with concrete can eliminate the discharge. However, if the discharge access is a direct manhole into a storm sewer or drain, a concrete contractor can prevent future access to the manhole by installing a lock-down concrete cap or bolt down cover. Be careful not to block drainage in an existing storm drain with concrete.

For holding tanks, aboveground storage tanks (AST) are recommended. These allow the prompt detection and correction of any leaks. ASTs must be constructed with a material that is compatible with the waste liquids. It is recommended all ASTs have secondary containment that is designed to allow easy access for cleaning and regular inspections (See Chapter 4.1 and Chapter 6.2.2). The secondary containment structure should be equipped with a sump pump to allow easy removal of collected precipitation or any waste liquids in the event of a leak. If there is a sump pump it should not activate automatically. Instead, it should only allow manual activation after verification that the liquid is precipitation or wastewater. If precipitation needs to be removed from the containment area, it must meet EGLE wastewater discharge requirements to be discharged on-site. If wastewater is being removed, the liquid should be pumped into a disposal container and managed appropriately (see Chapter 2.3 and 2.4). Check for the cause of any wastewater leak and repair the AST if necessary. Concrete vaults can be used as secondary containment if the structure is constructed with a water-stop-joint design and the concrete is coated with an impermeable material compatible with the waste. Concrete vaults may not be used as primary containment due to the potential to crack.

Although not recommended because of the difficulty to inspect for leaks, underground storage tanks (USTs) can also be used for holding tanks. If made of steel, USTs should be equipped with secondary containment and cathodic protection. Double-walled tanks are recommended. They should also have spill and overfill protection, plus leak detection and a high-level alarm to alert overflows or leaks. If the wastewater contains UST regulated substances, you must call the Department of Licensing and Regulatory Affairs (LARA) Storage Tank Unit at 517-335-7211 to discuss if you need to meet the requirements in Chapter 4.3.1.

All piping leading from the floor drains to the holding tank should be double walled. Buried pipe should also have some type of leak detection system.

3.3.5 RESTROOMS AND BREAKROOMS

Standard domestic wastewater may be discharged to a POTW, privately-owned sanitary treatment system, or septic system. Pouring non-domestic wastes down the drain or in the toilet is illegal unless the toilet drains to a municipal treatment system AND the discharge is in compliance with the local sewer authority regulations.

3.3.6 AIR COMPRESSOR CONDENSATE

The regulations related to air compressor condensate will be based upon the wastewater destination, volume, and pollutant characterization of the condensate. This issue is site specific because air compressor condensate contains pollutants that exist in the ambient air surrounding the air intake. For example, certain deicing and dry-cleaning chemical storage areas have been found to cause pollutant concentrations in air compressor condensate that required control to reduce pollutant concentrations in the wastewater. The most common destination of air compressor condensate for manufacturers is to a POTW and the discharge is usually regulated by the local sewer authority.

Discharges to surface waters and groundwater would be evaluated on a site-specific basis in terms of the NPDES and Groundwater Discharge permit programs.

A few site-specific management practices can be considered:

- Consider use of a pollutant-compatible filter fitted over the air intake of the air compressor to capture pollutants preventing them from ending up in the condensate.
- If the POTW will accept the wastewater, then re-route the discharge or capture and then release the condensate to the POTW.
- If the wastewater cannot be accepted by the local sewer authority, then capture the wastewater and arrange disposal in accordance with liquid industrial by-product or hazardous waste requirements.
- Assure proper housekeeping and storage of materials to prevent their release into the air. This will benefit both employee health and prevent the capture of the pollutant in the air compressor intake.

3.3.7 PIT OR TRENCH DRAIN SLUDGE

This type of material is the semi liquid residue that accumulates in the bottom of trench drains or holding tanks that receive non-domestic wastewater. This is not the same as residues and water collected in storm sewer catch basins. Trench drains or holding tanks are typically located inside buildings where loading or unloading may occur; they may also be located so they are convenient to receive vehicle wash water or other types of non-domestic wastewater. The liquid portion of this wastewater is directed to the facility's wastewater disposal system or a holding tank. This type of wastewater cannot be discharged to surface waters such as through storm sewers, the ground, the groundwater, or to a septic system, nor can it be discharged to a POTW without prior approval. The waste or residue that collects on the bottom may contain oil, antifreeze, heavy metals, degreasers, or other contaminants. This type of waste cannot be disposed in your facility's solid waste containers and must be treated as a liquid industrial by-product unless the material is known to have been impacted by hazardous waste, in which case it would have to be handled as hazardous waste and according to procedures outlined in Chapter 2.4

If the waste is not hazardous there are three options for handling the sludge, depending on its water content.

1. Check to see if your POTW will allow you to pump this liquid into the sanitary sewer system. You may be required to pretreat the liquid portion before disposal to a POTW. A common method of pretreatment is to pass the liquid through a grit chamber and an oil/water separator.

   If your facility has either a grit chamber or an oil water separator you need to have an inspection and maintenance program in place to ensure that the chamber/separator continues to operate effectively. Check with your local POTW and the building/zoning authority for local requirements (See Chapter 36). The cleaning frequency is often based on the size of the separator and the volume and contents of the wastewater that flow through it. Your program should include:

   - Regular inspections.
   - Recycling or disposal of separated oil (see Chapter 2.4.9.a).
   - Sludge analysis to determine proper disposal options.
   - Cleaning/removing sludge and refilling the chamber with water (to ensure proper oil water separation).

2. Drying the sludge on-site. If you choose this option, you must be able to dry the material in a container of some type. You cannot dry the material in a manner that any liquid can impact the ground, or if not authorized, the on-site sewer system. If you can dry the material in an appropriate manner, the dried sludge can then be disposed in facility solid waste containers, which are subsequently directed to a licensed landfill. There cannot be any free liquid left in the sludge. Discuss this option with your local EGLE District Office (see Appendix C). See Chapter 2.2 for more information on solid waste disposal.
3. Have the sludge pumped from the holding tank by a permitted and registered liquid waste transporter (see Chapter 3.2.2) for appropriate disposal at an approved facility. Under no circumstance should wastewater or pit sludge from trenches be directed into a facility's septic tank and/or tile field.

3.3.8 POWER WASHING

Regulations for power washing wastewater discharges depend on where the discharge goes. Options for this wastewater are described in the following.

Power Washing Discharges to Ground (Groundwater Discharge Permit Program)

EGLE may authorize a discharge to the ground or groundwater from a power washing operation by an exemption, notification, or permit, depending on the type of discharge.

A groundwater discharge is exempt if the washing is done by a commercial operator or performed in an industrial setting to remove non-polluting substances from vehicles and surfaces, and only clean water with no additives is used for the cleaning. In this instance, discharges must go into the groundwater; they may not be directed to a storm drain or surface water.

If a commercial operator is using an additive for the cleaning, a notification permit is required under Rule 323.2211. In this case, a groundwater discharge permit application must be submitted. The application instructions can be accessed at **Michigan.gov/GroundWaterDischarge** under "Permits and Fees." The applications are in MiWaters at **MiWaters.deq.state.mi.us**.

Power washing operations that do not qualify for an exemption or authorization via notification may be able to obtain a site-specific exemption or a groundwater discharge permit. It will depend on the quality and quantity of the wastewater and discharge location. Interior washing of vehicles does not qualify for permit by notification process.

Power Washing Discharges to Surface Water (NPDES)

The discharge of power washing wastewater directly to a creek, river or other water body, directly or through a storm sewer, or other conveyance, is illegal without first obtaining a NPDES permit (Chapter 3.2.3) from EGLE. An NPDES permit would be necessary for each job site where there will be power washing discharge from vehicles or equipment. Applying for an NPDES permit for each site will likely not be a practical option for mobile power washing operations. However, if no detergents or other compounds are used and the discharge will only be from routine building wash-down or pavement washing an NPDES permit is generally not required assuming there have not been spills or leaks of toxic or hazardous materials that would contaminate the wash water. For anything other than routine building wash down (use of power washing to remove paint is not routine building wash down), you should discuss your options with an NPDES or Groundwater Discharge Permit program staff in the appropriate EGLE District Office (Appendix C).

Power Wash Hazardous Waste Characterization

If you do not have authorization from EGLE to dispose of the wash water as discussed above, it will be necessary to determine if the wastewater or other wastes from power washing are hazardous waste before shipping it off-site. For example, if your company is power washing old paint off a building, paint chips need to be collected, evaluated, and disposed of properly. Paint chips cannot be left on the ground at the job site. Old paint stripped off commercial buildings may contain high enough concentrations of metals (such as lead, chromium, cadmium, and mercury) to be regulated hazardous waste. Another example is the wastewater containing solvents as

degreasing agents; such wastewater should be considered hazardous waste unless sampling proves otherwise.

There may be additional requirements at contaminated job sites. See Chapter 2.3 and 2.4 for more waste management information. Contact your local EGLE District Office, Hazardous Waste Program for questions about evaluating wastes and what requirements may apply.

For more information on power washing see the guidance document titled "***Mobile Power Washing.***" Search EGLE's publication center at **www.deq.state.mi.us/pubcenter.**

3.3.9 TRANSFERRING PERMIT OWNERSHIP

Transferring ownership under the National Pollutant Discharge Elimination System (NPDES) and Groundwater Discharge permit programs requires the permittee to submit a request through the MiWaters system (Chapter 3.1.1).

Groundwater discharge and NPDES permits both contain specific permit conditions related to transfer of ownership or control that are to be followed by the permittee prior to the transfer. The permits state the following:

"In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to EGLE 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing:

1. the legal name and address of the new owner.
2. a specific date for the effective transfer of permit responsibility, coverage and liability.
3. a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, EGLE may propose modification of this permit in accordance with applicable laws and rules."

To notify EGLE of the ownership change, the current permittee must complete a form in the MiWaters database. The permittee can find the form by logging into MiWaters, clicking on All Sites, selecting the appropriate site, then click on 'Apps, Requests and Reports', choose Permit Change Forms. From this screen, the permittee can find the form by typing in "Transfer" into the Form Name filter. One form appears for groundwater permittees. Two forms appear for NPDES: one for industrial storm water certificate of coverage (COC) permittees and the other form is for all other NPDES permittees. The permittee will then click Begin Submission for the appropriate form, complete, and submit the form. The form requires that the permittee include the written agreement as described above.

The new permittee will use the MiWaters system to report facility or operational changes requiring a permit modification.

EGLE will not modify the permit documents until after the change in ownership has been completed. Change in ownership is a minor modification that does not require payment of a fee.

3.4 WASTEWATER TREATMENT OPERATOR TRAINING AND CERTIFICATIONS

Technical assistance, operator training and certification for POTW operators are offered by the Operator Certification Program of EGLE. Industrial/commercial wastewater certification exams are offered twice a year in February and August. Certification is offered in a variety of classifications each relating to a different process of wastewater treatment.

Operator certifications required under Permit-by-Rule and the Storm Water from Industrial Activities General Permit are offered at EGLE District Offices, usually on a regularly scheduled basis. Schedules for certification and recertification training classes are located at EGLE's Wastewater Operator Training Program: **Michigan.gov/WWCertification.**

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common wastewater topics

Wastewater Discharge Permitting
EGLE NPDES Permit Section, Water Resources Division: **Michigan.gov/EGLEWater**

Industrial pretreatment (questions not answered by local POTW)
EGLE Industrial Pretreatment Program: 586-601-7985 | **Michigan.gov/IPP**

Storm Water Discharge Permits
EGLE NPDES Storm Water Program: 517-284-5588 | **Michigan.gov/EGLEStormWater**

- Guidebook of BMPs for Michigan Watershed Nonpoint Sources
- Industrial Storm Water Operator Training Manual
- Certified Storm Water Operator and SESC Inspector Training Manual

Storm Water Program Compliance Assistance
The following compliance assistance documents and web links are intended to help facilities better understand the storm water program regulations.

- U.S. EPA - Industrial Storm Water Fact Sheet Series
- EGLE storm water permit info - Total Maximum Daily Load (TMDL)
- EGLE storm water permit info - spill reporting
- Pollution Prevention for Business
- Environmental Assistance Center
- Marina Operations Compliance Assistance
- Compost Operations Compliance Assistance
- Water Discharge Diagram for Yard Clippings Composting Facilities

Storm water pollution prevention plans (SWPPP) and surface water cleanup
EGLE Storm Water Program: 517-284-5588 | **Michigan.gov/EGLEStormWater**

- SWPPP Template (Word), SWPPP Template (PDF)
- SWPPP sample
- SWPPP Checklist (Word), SWPPP Checklist (PDF)

Stormwater Visual Assessments
EGLE Industrial Storm Water Program: 517-284-5588 | **Michigan.gov/EGLEStormWater**

- Visual Assessment of Industrial Storm Water Compliance Assistance Document
- Visual Assessment Question and Answer Document
- Instructions for Completing the Quarterly Visual Assessment Report
- Visual Assessment Report Form
- Visual Assessment Tutorials - Part 1, Part 2, Part 3
- Visual Assessment Written Procedures Outline Template
- Visual Assessment Written Procedures Outline Template_Sample
- Industrial Storm Water - Visual Assessment Webinar slides
- Industrial Storm Water - Visual Assessment Webinar recording
- NOAA Weather Forecasting

Wastewater discharges to groundwater
Michigan.gov/GroundwaterDischarge
EGLE Groundwater Discharge Permit Program: 517-284-5570

Permitted/Registered hazardous waste and liquid industrial by-product transporters
EGLE Hazardous and Liquid Industrial By-Products Transporter Program
Michigan.gov/EGLEwaste (under "Transporters")

Septic tank/field systems with <10,000 gallons/day discharge
Local Health Department: **MALPH.org**
EGLE Environmental Health Program: 517-284-6528 | **Michigan.gov/EGLEOnsiteWastewater**

Lists of licensed septage waste transporters
EGLE Septage Waste Program: **Michigan.gov/EGLEseptage**

Michigan Wastewater operator certification and training
Michigan.gov/WWCertification

Michigan Guide to
Environmental Regulations

Chapter 4

MATERIALS STORAGE AND TRANSPORTATION

CHAPTER 4: Material Storage and Transportation

In this Chapter

PURPOSE AND APPLICABILITY OF REGULATIONS

The potential to adversely affect human health and the environment is always present when using, storing, and transporting regulated materials. Consequently, numerous regulations have been created to prevent accidents and reduce the risk of exposure to regulated materials. Complying with these regulations will minimize your liability and protect your employees, the community, and the environment. This chapter provides only a summary of the requirements. You must refer to the regulations for more specific detail on the requirements.

AGENCIES AND THEIR LAWS AND RULES

The state, federal, and local agencies that enforce the regulations that apply to the storage, use, or transportation of regulated materials are listed below.

There are many regulations pertaining to the storage, use, and transportation of materials. Each regulation targets a specific group of materials that exhibit certain characteristics. Appendix B, which can be found in the back of this book, contains definitions of the various regulated groups of materials found in the material storage, use, and transportation regulations. These defined terms appear throughout this chapter in bold lettering. In some instances, multiple agencies use the same term to describe a regulated group of materials; however, its definition may differ. Such terms will be followed by a dash and the acronym of the defining agency or regulation. For example, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), the U.S. Department of Transportation (USDOT), and The Department of Licensing and Regulatory Affairs (LARA) all have differing definitions for the term “hazardous material.” Therefore, EGLE, the USDOT, and Act 207 definitions of hazardous material will appear as “hazardous material-EGLE,” “hazardous material-USDOT,” and “hazardous material-Act 207,” respectively.

Identify the regulations that apply and contact the appropriate agency if you have any material storage, use, or handling questions.

STATE AGENCIES

EGLE regulates material storage and transportation under the following parts of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451) or other regulations that are covered in this chapter:

- Liquefied petroleum gases under the **Act 207** and the **Act 207 Liquefied Petroleum Gas Rules** (see Chapter 4.3.2)
- Compressed natural gases under **Act 207** (see Chapter 4.3.2)
- Hydrogen under **Act 207** and the **Act 207 Storage and Handling of Gaseous and Liquefied Hydrogen Systems Rules** (see Chapter 4.3.2)

EGLE also regulates material storage and/or transportation under a number of other regulations that are not summarized in this chapter but are instead covered under the chapters referenced below:

- Air emissions from storage tanks under Part 55 (Air Pollution Control) of Act 451, the Part 55 Rules, and the Federal Clean Air Act (see Chapter 1)
- Hazardous waste under **Part 111** (Hazardous Waste Management) of Act 451 and the **Part 111 rules** (see Chapter 2) and the Hazardous Materials Transportation Act (Public Act 138 of 1998) (hazardous material-EGLE) (see Chapter 4.4.11)
- Solid waste under **Part 115** (Solid Waste Management) of Act 451 and the **Part 115 rules** (see Chapter 2)
- Liquid industrial by-products under **Part 121** (Liquid Industrial By-products) of Act 451 (see Chapter 2), and the Hazardous Materials Transportation Act (Public **Act 138** of 1998); (hazardous material-EGLE) (see Chapter 4.4.11)
- Scrap tires under Part 169 (Scrap Tires) of Act 451 (see Chapter 2)
- Medical waste under **Part 138** (Medical Waste Regulatory Act) of the Public Health Code, Act 368 of 1978, as amended (Act 368) and the **Part 138 rules** (see Chapter 2)
- Radioactive materials and radioactive waste (see Chapter 10)
- Storage and use areas for oil-EGLE, salt, and other polluting materials under the Part 31 (Water Resource Protection) of Act 451, Part 5 administrative rules “Spillage of Oil and Polluting Materials” (Part 5 Rules) (see Chapter 4.2 and 6.2.2)
- Outdoor storage and use areas at facilities subject to storm water permits (see Chapter 6.2.4)

LARA regulates:

- Underground storage tanks under Part 211 (Underground Storage Tanks Regulations) of Act 451, the Part 211 Rules, Part 213 (Leaking Underground Storage Tank) of Act 451, the Fire Prevention Code - Public **Act 207** of 1941 as amended (Act 207), and the Act 207 Storage and Handling of Flammable and Combustible Liquids (FL/CL) Rules (see Chapter 4.3.1).
- Aboveground storage tanks and containers holding flammable and combustible liquids-Act 207 under Act 207 and the Act 207 Storage and Handling of FL/CL Rules (see Chapter 4.3.2).

- The design, construction, installation, and maintenance of underground storage tanks storing **regulated substances**. The regulatory authority is under Part 211, Underground Storage Tank Regulations, of Public Act 451 of 1994, as amended, and the **Michigan Underground Storage Tank Rules** (**MUSTR**).

The Michigan State Police, **Commercial Vehicle Enforcement Division** regulates:

- The transportation of **hazardous materials-USDOT**, including motor carriers, shippers, drivers, and cargo tank facilities. The hazardous material-USDOT regulations are adopted into state law under Public **Act 181** of 1963, as amended (Act 181) and are enforced by **Motor Carrier Officers** of the Michigan State Police.

FEDERAL AGENCIES

The U.S. Environmental Protection Agency (U.S. EPA) regulates:

- Oil-EPA storage under the Spill Prevention, Control, and Countermeasure (SPCC) requirements (see Chapter 6.2.3).
- Title III of the Superfund Amendments and Reauthorization Act (SARA), which requires that hazardous material inventory information be submitted to state and local agencies (see Chapter 5).
- Polychlorinated biphenyls (PCB) clean-up, storage, disposal and use under the **Toxic Substances Control Act** and the regulations found in **Title 40, Part 761** of the Code of Federal Regulations (40 CFR Part 761).
- Hazardous waste under 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) (see Chapter 2).
- Wastewater under the federal **Clean Water Act.** (see Chapter 3).

The USDOT regulates:

- Inter- and intra-state transportation of hazardous materials-USDOT under authority of the federal Hazardous Materials Transportation Act and **Title 49 of the Code of Federal Regulations**, the **Pipeline and Hazardous Materials Safety Administration** (**PHMSA**), and Federal Motor Carrier Safety Administration, in conjunction with the Michigan State Police.

LOCAL AGENCIES

Local ordinances are overseen by local authorities. Contact your local building official and fire department for questions concerning the fire code, specific secondary containment requirements, and local reporting requirements. Contact county or city clerk regarding local business licenses.

4.1 SECONDARY CONTAINMENT

One way to reduce the damage caused by chemical releases is to control their impact to air, groundwater, surface water, and drains. This can be done by rapid excavating or using items such as sorbents and devices to block drains. Some regulations require secondary containment structures to control releases, depending on what is being stored. See Appendix 4-A at the end of this chapter for a summary of many of these regulations but be advised there are some industry sectors that may have containment requirements not addressed in the guidebook. EGLE's document "**The Guide to Understanding Secondary Containment Requirements in Michigan**" provides additional information on calculating and designing secondary containment structures.

Even if you are not required by law to have secondary containment, you are encouraged to use it for all materials that may pose a risk to human health and the environment if released. You can consider purchasing prefabricated containment units or fabricated units built to your specifications. Many environmental regulations do not specify how these structures must be built; only that they keep the material from reaching surface water and groundwater or the regulations provide general conditions like the containment must be compatible with, and impervious to, the contained material.

The volume that secondary containment structures must be able to hold varies with the type of substance stored. If the regulations do not specify a greater amount, it is generally acceptable that the containment area be designed to hold, at a minimum, the greater volume of either ten percent of all the container volumes, or 100 percent of the largest container volume, plus any precipitation that may accumulate in the area. Discuss secondary containment volume requirements about:

- ✓ Hazardous waste with your **EGLE District Office**, Hazardous Waste Program (Chapter 2.4.7).
- ✓ Flammable and combustible liquids with the Storage Tank Program on any storage that falls within the scope of the Act 207 Storage and Handling of Flammable and Combustible Liquids (FL/CL) Rules (R 29.5601 to 5917). The requirements of these rules supersede local requirements if different than what is required in Act 207 or the FL/CL Rules (see Chapter 4.3).
- ✓ Polluting materials as defined by the Part 5 Rules with your local **EGLE District Office**, Pollution Incident Prevention Planning Program (see Chapter 4.2).
- ✓ Flammable and combustible liquids with Michigan Occupational Safety and Health Administration (MIOSHA) when subject to those regulations.
- ✓ Oils storage when you have 1,320 gallons or more storage capacity with the **U.S. EPA, Region 5** (see Chapter 6.2.3).

Local authorities may have containment requirements. Jurisdiction varies between communities but may be with the wastewater treatment plant, county health department environmental health section, and fire department.

Also check if your insurance company has any additional requirements pertaining to your coverage policy. Your chemical distributor/manufacturer may also have services to help design or construct storage areas.

If the materials you have on hand are affected by other regulations, follow the more stringent requirements. Examples of secondary containment structures include:

- ✓ Curbing
- ✓ Dikes, berms, or retaining walls
- ✓ Drip pans
- ✓ Enclosed cabinets with sealed flooring
- ✓ Portable containment units
- ✓ Spill diversion and lined detention ponds for larger areas
- ✓ Weirs, booms, or other barriers

Consider the following when selecting or designing a structure:

- *Structural strength* so the containment can support the weight of the loads placed on it, including the materials and equipment that will enter the area.
- *Impermeability* so the containment is resistant to penetration of the materials contained in the structure. For example, a solid concrete structure with a linter that prevents the material from penetrating the concrete and infiltrating into the ground.
- *Compatibility* of the construction materials with the substances contained in the structure, and the structure's design should provide separation areas for incompatible substances.
- Look at the Safety Data Sheet (SDS) for storage recommendations and search Web sites about material compatibility.
- *Integrity* to avoid having any drains, other piping, or openings of any kind where liquids may escape. Seal all joints and cracks and do not include floor drains in the area or use cinder blocks in the construction. Have a regular maintenance schedule to locate and repair any cracks.
- *Security* to prevent vandalism and the entry of unauthorized persons to the area. The containment must allow emergency personnel and equipment to enter. Sumps included in the design should be manually controlled.
- *Protection* from extreme temperatures including ignition sources.
- *Squirt distance control* to contain any liquids spurting from containers if a leak occurred.

- C*apacity* so the containment meets the regulatory minimum holding capacity. Consider the amount of precipitation, such as snow and rainfall that may accumulate in the containment structure. Generally, areas in Michigan receive an average of 3.9 inches in a 24-hour rainfall. A record 24-hour precipitation in Michigan was nearly 10 inches.

Some other things to consider when designing your secondary containment area include:

- Avoid creating confined spaces.
- Provide adequate lighting and ventilation. Consider if explosion proof equipment is needed.
- Adhere to required isolation distances from property lines, public ways, buildings, etc.
- Consider how employees will move materials in and out of the storage and use area and the loading and unloading dock area.
- Consider using alternative materials that are less hazardous and have fewer regulatory requirements.
- Keep valves and piping inside the secondary containment.

Any collected liquids from secondary containment structures must be **characterized** to determine if it is a regulated hazardous waste or liquid industrial by-product. If hauled off site, the applicable waste regulations must be followed (see Chapter 2). If it is discharged on site, it must be in accordance with the rules associated with Part 31 (Water Resources Protection) of Act 451 (i.e., Part 4 - Water Quality Standards, Part 5 - Spillage of Oil and Polluting Materials, and Part 22 - Groundwater Quality). The Part 5 and Part 22 rules allow discharges of captured precipitation from secondary containment to the ground if the discharge does not contain released materials and meets the conditions listed in R 324.2005(2) and the water quality standards overseen by the Water Resource Division. The discharge cannot be, or become, injurious; and cannot cause runoff to, ponding on, or flooding of adjacent property. It also can not cause erosion or nuisance conditions.

When doing a visual inspection before discharging, look for odor, color, turbidity, floatable matter, deposits, or stains. See EGLE's Industrial Storm Water Program page (Michigan.gov/IndustrialStormwater) and discuss discharge requirements with EGLE's District Office, Water Resource Division. If your facility is also subject to the Storm Water Discharge Permit Program (see Chapter 3.2.3), you will need to meet the sampling and monitoring requirements explained in your permit.

4.2 USE AND STORAGE AREA

Facilities must review their permits and determine if they are subject to any regulations that have requirements regarding use and storage areas, including loading and unloading areas. Many of the regulations are written to allow the facility flexibility in meeting requirements to keep materials

out of the environment. In addition, a facility may be subject to MIOSHA housekeeping and other requirements. See **Chapter 2** for the requirements that apply to the storage and transportation of waste.

Manufacturers with polluting materials as defined in the Part 5 Rules have requirements for their use and storage areas beyond the secondary containment requirements for liquid polluting materials discussed in the previous section, if they meet or exceed the listed threshold management quantities and don't meet any of the listed exemptions in R 324.2003.

Salt: Solid form 5 tons

Liquid form 1,000 gallons

Oil: 660-gallon tank storage capacity, or

1,320-gallon total above ground storage capacity

Other polluting materials listed in **R 324.2009** in discrete use or storage areas:

Outdoors 440 pounds

Indoors 2,200 pounds

Polluting materials include mixtures of the materials listed to the left if they contain one percent or more, by weight, of the materials listed to the left.

Facilities subject to the Part 5 Rules are required to have adequate surveillance of the facility to detect releases and implement procedures to prevent the polluting materials from reaching the surface water or groundwater. Each facility needs to determine how to meet this requirement, as it depends on what and how much polluting material is involved, how it is stored and used, how close it is to surface water or drains leading to surface water, what soil characteristics and other conditions could impact groundwater exposure, and the availability of pollution prevention and emergency response equipment, etc. A record of surveillance activities is recommended as a resource to demonstrate this requirement is being met.

All use areas and indoor storage areas are required to be designed, constructed, maintained, and operated to prevent releases of polluting materials into a public sewer system or to surface water or groundwater.

Solid polluting materials, including salt storage and use areas, must:

- Be managed to prevent releases to public sewer systems or to surface water or groundwater.
- Not be stored within 50 feet of a designated wetland or shore or bank of any lake or stream.

- Be designed and constructed to remain effective during a 100-year flood if located within a 100-year floodplain.

Discuss your use and storage area requirements for polluting materials with EGLE's District Office, Water Resources Division.

Some polluting materials may also have requirements in other regulations. For example:

- Highly hazardous chemicals, toxics, and reactives.
- Flammable and combustible liquids-Act 207/MIOSHA or a hazardous substance-**CERCLA** (**Comprehensive Environmental Response, Compensation, and Liability Act**); see Chapter 4.3 "Storage Tanks." Polluting materials exceeding the threshold management quantities in tanks that are exempted from the storage tank regulations, such as process tanks, are subject to the Part 5 Rules.
- Oils under U.S. EPA Spill Prevention Control and Measures regulations; see Chapter 6.2.3.
- Chemicals of interest under the US Department of Homeland Security's Chemical Facility Anti-Terrorism Standards (CFATS); see Chapter 6.2.9.

If a facility is subject to the storm water permit as required in Chapter 3, it is necessary to also include storage procedures and procedures for removing storm water from the containment in the Storm Water Pollution Prevention Plan.

4.3 STORAGE TANKS

Many businesses utilize underground storage tanks (USTs), aboveground storage tanks (ASTs), or both in their day-to-day operations. The storage and handling of products such as gasoline, diesel fuel, fuel oils, and other liquid chemicals can have environmental and safety consequences if the tanks are not properly installed and maintained. Also, the product transfer operations must be properly managed to minimize the possibility of releases and possible fire hazards. Storage tank regulations were designed to promote the safe storage and handling of flammable and combustible liquids such as petroleum products and other hazardous substances. Following the regulations will promote safer storage and handling practices and result in economic benefits to manufacturers and consumers.

4.3.1 UNDERGROUND STORAGE TANKS

Prior to December 22, 1988, USTs containing flammable and combustible liquids-Act 207 were solely regulated under the authority of the Act 207 and the FL/CL Rules. These rules adopted by reference some of the National Fire Protection Association codes and standards and provided a significant number of state additions and amendments. The FL/CL Rules applied not only to USTs but to ASTs as well. The last update of these rules took effect in October 2014.

On December 22, 1988, the federal UST Rules were promulgated by the U.S. EPA. Following promulgation of the federal rules, the MUSTR were promulgated under the authority of Part 211 (Underground Storage Tanks Regulations) of the Natural Resources and Environment Protection Act, Public Act 451 of 1994, as amended. The MUSTR adopted by reference the federal rules with state specific additions and amendments and incorporated by reference the relevant language of the Storage and Handling of FL/CL Rules. The last update of these rules took effect in October 2015 and called for increased emphasis on environmental protection.

The Underground Storage Tank Program implements the regulations under Part 211 (4.3.1 Storage Tank Regulations [MUSTR]).

Background

Michigan has approximately 17,500 USTs installed at 6,700 facilities. An underground storage tank system is defined as a UST or combination of USTs and underground connected piping that have at least 10 percent of their volume underground and are, were, or may have been used to contain a regulated substance. Many of these USTs have released or will release petroleum and other regulated chemicals into the environment through spills, overfills, or failures in the tank and piping system. The extensive contamination of soils and groundwater due to leaking underground storage tanks (LUSTs) is a serious problem nationwide.

UST facility locations that fit one or more of the following conditions must be plan reviewed and certified by the Storage Tank Program:

- A business or commercial facility that stores petroleum-based products, a CAA Section 112(r) substance, or any chemical included on the federal hazardous substance-CERCLA list in amounts greater than 110 gallons (MUSTR-UST).
- A facility that supplies flammable liquid or combustible liquid-Act 207 that has an individual aboveground tank storage capacity of more than 1,100 gallons.
- A farm or residential location that stores motor fuel for non-commercial purposes in amounts greater than 1,100 gallons.
- A facility that supplies gaseous or liquefied hydrogen or a facility that stores gaseous or liquefied hydrogen in a container(s).

- A facility that stores liquefied petroleum gas (LPG) in a tank larger than 2,000 gallons individual or 4,000 gallons aggregate or any size tank used for dispensing into either tanks or vehicles.
- A facility or residence that uses an UST to store heating oil for consumptive use on the premises where the tank is located does not require a plan review or yearly fees plus certification.

Registration

All regulated USTs must be properly registered with the Storage Tank Program. You must complete a "*Registration for Underground Storage Tanks*" (**BFS 3821**). A UST discovered during tank removal and renovation must also be registered with the Storage Tank Program. You must send an amended form to the Storage Tank Program any time the registration information changes. The registration form must be submitted within 30 days from the date of the change.

Financial Responsibility

You must have pollution liability insurance or demonstrate financial responsibility to cover the costs of cleanups, property damage, and third-party compensation for bodily injury resulting from leaking underground storage tanks. You will be required to show proof of financial responsibility when you register the tanks. For further information regarding financial responsibility requirements, visit the ***Financial Responsibility for Underground Storage Tanks*** on the Storage Tank Program web site at **Michigan.gov/StorageTanks** (select "Underground Storage Tanks").

The Michigan Underground Storage Tank Authority (MUSTA) was created by Public Act 416 on December 30, 2014. The Michigan Underground Storage Tank Authority (MUSTA) serves Michigan's petroleum underground storage tank owners and operators, local units of government, and country road commissions by managing the Underground Storage Tank Cleanup Fund, Legacy Release Program, and Public Highway Cleanup Program on a sound fiscal basis. MUSTA assists stakeholders in meeting their financial responsibility requirements and providing financial assistance to remediate contamination caused by releases from petroleum underground storage tanks. For further information visit the Michigan Underground Storage Tank Authority Web site at **Michigan.gov/EGLEMUSTA**.

Existing Installations

The UST system must be protected from potential releases and monitored. Since June 27, 2008; new UST systems are required to have approved secondary containment. Without these safeguards in place, the UST is more likely to leak, damage the environment, and leave you with costly cleanups. USTs that are not in compliance with the December 22, 1988, upgrade requirements of corrosion protection, overfill prevention, release detection, and spill prevention must have been closed by December 22, 1999. Closure may occur by removing the UST or filling the UST with inert material if removal threatens a structure.

For more information on release detection, spill protection, overfill prevention, and corrosion protection, call LARA's Bureau of Fire Services Storage Tank Division at 517-241-8847.

New Installations

The requirements for secondary containment, spill protection, overfill prevention, corrosion protection, and release detection must be met at the time of installation. A "*Notice of Proposed Installation of Underground Storage Tanks*" (**BFS 3820**) must be completed, detailing the materials and part numbers used on the UST installation as appropriate, and submitted with the site diagram.

At least 30 days before you install or use a UST system in Michigan, you must submit installation plans for review to the Storage Tank Program. The plans submitted for installation approval must include: a site diagram detailing the location of USTs, dispensers, other storage tank systems, property lines, buildings, and drinking water wells; and a list of materials used for the UST installation as described in MUSTR. R 29.2109 (**Rule 9**) of MUSTR also has specific requirements concerning secondary containment and the placement of UST systems near drinking water wells and wellhead protection zones. UST systems with pressurized piping, placed after January 2, 1999, must be installed with secondary containment piping.

The plans are reviewed within 45 days, and then an approval or deficiency letter is sent to you. After approval of the plans, you must notify the Storage Tank Program of the installation date of the UST system seven days prior to the installation. The Storage Tank Program field staff will inspect the installation within two working days following this notification. Following inspection of the site and prior to use of the UST system, a registration form must be sent to the Storage Tank Program. A certificate will then be mailed to the owner/operator to be displayed at the facility location.

Any person who installs or removes a regulated UST system in Michigan must obtain $1 million of pollution liability insurance. This insurance should not be confused with the financial responsibility requirements found previously in this chapter.

Tank Removal, Closure, and Changes of Stored Material

There are two types of closures for UST systems that are allowed: temporary and permanent. A temporary closure is allowed for up to a 12-month period, only if it is intended to bring the UST back into service. To temporarily close a UST system, you must submit an "*Intent of Removal, Closure, or Change-in-Service of Underground Storage Tanks*" (**BFS 3824**) form notifying the Storage Tank Program of the temporary closure. You must also continue operating the corrosion protection and release detection systems. Release detection is not required if the UST system is empty. A temporarily closed UST system may not be brought back into service unless it is fully upgraded for corrosion protection, overfill prevention, release detection, and spill protection. The UST system must also pass tank and line tightness testing.

A UST system is considered permanently closed when the UST system is empty for 30 days or more and does not meet the requirements for temporary closure or change-in-service. A permanently closed UST system must be emptied and cleaned by removing all liquids and accumulated sludge and purging all vapors.

When materials are removed from tanks, it is necessary to characterize those materials and sludges to determine if they are subject to waste regulations:

- Material that will be used as is, either by the generator or another company, is not considered a waste. This exclusion does not apply if the material has to be filtered or altered in any way before use. If the material is classified as a USDOT hazardous material, transportation of that material must meet that agency's requirements (see Chapter 4.4).
- Waste gasoline, diesel fuel, or other fuels that are being sent to a fuel blender are not considered hazardous waste because they were originally a fuel and are being recycled into a fuel. These would have to be shipped to the blender as a liquid industrial by-product.
- Contaminated soils, groundwater, or other debris generated as the result of contamination from leaking underground storage tanks are exempted from the hazardous waste regulations only if:
    - They exhibit benzene or other D019 to D043 constituents.
    - The site is being cleaned up under storage tank regulations.
    - The tank is an underground storage tank.

This exemption does not apply to aboveground storage tank cleanups or from contamination associated with a UST due to overfilling or other causes besides leaking.

Removed materials may be characteristic or listed hazardous waste if the above situations do not apply. The tank must also be verified as **empty**. Discuss any waste determination questions with your consultant or EGLE, **District Office**, Hazardous Waste Program.

Refer to **Chapter 2.4** to determine whether you have a solid waste, liquid industrial by-product, or hazardous waste, and view EGLE's recorded waste characterization and generator status webinar available at **Michigan.gov/EGLEwaste or Michigan.gov/EGLEEvents**.

If waste is generated from the tank cleanout, it may affect a facility's hazardous waste generator status because of the increased waste generation in that month. See Chapter 2.4.4 for more information about re-notifying or obtaining a Site Identification Number if the facility has not previously shipped hazardous waste off-site. It will also be necessary to use permitted and registered transporter, complete and submit copies of hazardous waste manifests, and meet other hazardous waste requirements when shipping hazardous waste off-site. There are different requirements for shipping liquid industrial by-products. To ensure properly handling of waste generated from tank closures – see Chapter 2, which discusses the management standards for both hazardous waste and liquid industrial by-product in detail.

Tanks not being reused must be **emptied**, inerted, cleaned, and rendered unusable by cutting holes in the tank heads and shell. Before the tank is cut up for scrap or disposal, the atmosphere in the tank must be tested to ensure its safety. If it is a steel tank, it can be sent to a recycler. Check the yellow pages under the scrap metal heading or go to the **Recycled Material Market Directory** at **Michigan.gov/EGLErmmd**. If it is a fiberglass tank, it can be disposed as a solid waste. Contact the landfill for specific requirements.

As detailed above, materials removed from inside the tank must be characterized. Generally, any materials removed from a tank will be subject to hazardous waste or liquid industrial by-product regulation upon removal. The handling requirements vary based on the character, composition, volume, and ultimate disposition of the waste (recycling or disposal). Only when contaminated fuel is shipped directly to a fuel blender for recycling and reuse as fuel are the materials not subject to waste regulation. In that case, the contaminated fuel may be shipped using a bill of lading in accordance with the USDOT regulations. For questions about the waste regulations that apply to the tank contents, see the resources above and contact your EGLE **District Office**, Hazardous Waste Program staff for assistance.

All permanently closed UST systems must be removed from the ground and the Storage Tank Program must be notified of the pending removal by submitting an "Intent of Removal, Closure, or Change-in-Service of Underground Storage Tanks" (BFS 3824) 30 days prior to the pending removal date. A site assessment must be performed. In cases where a permanent structure is above or near the UST, the UST system may be closed in-place. A closed in-place UST must be filled with an inert solid material such as concrete or pea gravel. A site assessment must be performed. Once the UST is closed, you must submit an amended "Registration for Underground Storage Tanks" (BFS 3821) to the Storage Tank Program within 30 days of the closure. In place of an amended BFS 3821, the "Underground Storage Tank System Site Assessment Report and Closure or Change-In-Service Registration" (BFS 3881) can be submitted within 45 days of permanent closure or change-in-service.

To facilitate UST removal and unrestricted closure of former UST sites, the state and federal hazardous waste regulations exclude petroleum contaminated media and debris that are D018-D043 characteristically toxic and not ignitable from being a hazardous waste if the site is being cleaned up under the storage tank regulations.

When the material stored in a UST is changed from a regulated substance to a non-regulated substance (such as water or heating oil), follow the same procedures as though you permanently closed the UST system.

Record Keeping Requirements

It is important to keep records of your daily operations, purchases of equipment, and other information relating to the operation of your UST system. These records are needed by the inspector and might also help you obtain cheaper insurance rates. Records must be kept on

routine maintenance of the UST system, release detection, inventory control, site assessment results, reporting of releases, and corrective actions. These records should be kept on site and be immediately available upon request. If the records are kept at an alternative site, they must be available for inspection. It is recommended you keep these records indefinitely.

Releases, Reporting, and Investigation

Any time a non-emergency release is suspected or confirmed, you must report the release within 24 hours to the Storage Tank Program. See Chapter 6 for instructions and regulations on how to properly report a non-emergency spill. Once a suspected release has been reported, you have 14 days to investigate the release and either confirm the release or cancel the suspected release report. If a suspected release is upgraded to a confirmed release, or if you initially know that you have a confirmed release, you must begin corrective action.

All emergency spills or releases must be reported immediately to the **Pollution Emergency Alerting System (PEAS) at 800-292-4706** in Michigan or 517-373-7660 if outside Michigan.

Call 517-335-7279 or use the form **BFS 3826** (Michigan.gov/documents/lara/bfs3826_407228_7.pdf) to report a confirmed release from a UST.

Site Assessments

When a UST system is closed or a change-in-service occurs, the UST site must be assessed for past releases where contamination is most likely to be present. A proper site assessment requires sampling of soil and/or water. A laboratory using U.S. EPA or state acceptable methods must analyze these samples. R 29.2155 (Rule 55) of MUSTR lists the proper sampling guidelines for site assessments. The site assessment results must be submitted to the Storage Tank Program on the "*Underground Storage Tank System Site Assessment Report and Closure or Change-in-Service Registration*" (BFS 3881). Also, Storage Tank Program's Informational Memoranda "*Test Methodology for Site Assessments*" (IM-3), succinctly lists the site assessment sampling requirements.

A site assessment is not required if contaminated soils, groundwater, or free product are discovered. If you find one of the following indicators of a release of regulated product, you must report a confirmed release to the Storage Tank Program within 24 hours of discovery: visible or olfactory evidence of contamination at the UST site during excavation, if field screening instrumentation (e.g., a photo ionization meter [PID]) indicates the presence of contamination, or if your site assessment shows contamination. You must then follow the Remediation and Redevelopment Division's (RRD) guidelines for further testing and clean up the contamination.

Corrective Action

You must hire a qualified underground storage tank consultant (QC) to perform corrective action at your site. The QC must have $1 million coverage in pollution liability insurance. Be aware that even though you must hire a QC, you are liable for assuring that corrective actions are performed at your site.

After a release has been reported, you or your QC must immediately begin to perform initial response actions. If the corrective action is not completed after performing the initial response activities, then the QC must determine the extent of the contamination, conduct a risk-based corrective action (RBCA) assessment, and prepare a Corrective Action Plan (CAP) to further address the contamination at the site. You can find more information on CAPs and related reporting requirements in Part 213 (Leaking Underground Storage Tanks [LUST]) of Act 451. In addition to the above requirements, the QC must submit the following reports to the RRD: initial assessment report, final assessment report, and the closure report.

FOLLOW-UP REPORTS FOR LUST

Forms required by regulation, due within:

- 90 days - LUST Initial Assessment Report (BFS 3841)
- 365 days - LUST Final Assessment Report (BFS 3842)
- Submitted within 30 days after the completion of the Corrective Action:
    - LUST Closure Report (BFS 3843)
- Miscellaneous reports that are required (as applicable to the site):
    - Free Product Fax Transmittal (BFS 3800)
    - Notice of Migration of Contamination (BFS 4482)
    - Notice Regarding Discarded or Abandoned
    - Containers (BFS 4476)
    - Notice to Impacted Parties of Corrective Action (BFS 3852)

Each site must be evaluated and cleaned up based on the current cleanup criteria and the level of risk that the site poses to public health and the environment as determined by the QC performing the corrective action. The American Society of Testing and Materials' document entitled "*Standard Guide for Risk Based Corrective Action (RBCA) Applied at Petroleum Release Sites*" (E-1739-95) has been adopted by reference and is effective for all UST releases. This standard allows for a more streamlined approach to cleanups in Michigan. The RRD has the necessary tables and guidance documents to implement RBCA.

Baseline Environmental Assessment (BEA)

Please see Chapter 7 for information on the BEA process and how to avoid liability for existing contamination when purchasing/leasing/operating at a site of contamination.

4.3.2 ABOVEGROUND STORAGE TANKS

Aboveground storage tanks (ASTs) are often used for the same purposes as USTs. An AST system has less than 10 percent of the volume of the storage tank system underground. While AST systems do not pose the same environmental or human health risks as USTs, the impacts may be significant if their contents are accidentally released. One advantage of ASTs is that they are highly visible, so any leaks or defects can be detected early.

The Storage Tank Program regulates ASTs that are used to store flammable and combustible liquids-Act 207 with a flashpoint of less than 200° Fahrenheit. The aboveground storage of flammable and combustible liquids-MIOSHA with a flashpoint greater than 200° Fahrenheit can be regulated under the MIOSHA General Industry Safety Standards-Part 75, Flammable and Combustible Liquids and/or the fire prevention code adopted by the local municipality.

Aboveground storage locations that fit one or more of the following conditions must be plan reviewed and certified by the Storage Tank Program:

- A facility that supplies gaseous or liquefied hydrogen or a facility that stores gaseous or liquefied hydrogen in a container(s).
- Any flammable compressed gas or liquefied petroleum gas container filling location.
- A facility that supplies flammable compressed gas or any liquefied petroleum gas that has a tank with a water capacity of more than 2,000 gallons, two or more tanks with an aggregate water capacity of more than 4,000 gallons, or any tank used to fill other tanks or cylinders.
- A facility that supplies flammable liquid or combustible liquid-Act 207 that has an individual tank storage capacity of more than 1,100 gallons.

Installation

The plan review form, *"Application for Installation of Aboveground Storage Tanks"* (**BFS 3859**), gives you a complete list of what must be submitted with your application, including the plan review fee of $203 for each AST being installed (exemption from fee exists for any tank storing a refined petroleum product). Plans are reviewed within 45 days after receipt. Following review of the plans, you will receive a letter indicating approval or denial of the plan. For a denial, the deficiencies are listed. The deficiencies need to be corrected before approval can be granted. Once the plan review is approved, a Storage Tank Program Hazardous Materials Storage Inspector will inspect your facility after the installation is complete and prior to placing an AST in service.

A certification fee of $61.50 is assessed annually per year/per tank, for any tank storing non-refined petroleum products. The billing period is October 1 through September 30 of the following year. The certification fee for hydrogen and CNG tanks is based on standard cubic feet per minute (SCFM) storage capacity. One CNG tank is considered to be 18,500 SCFM, and one hydrogen tank is considered to be 36,000 SCFM.

To request the applicable plan review form, "*Application for Installation of Aboveground Storage Tanks*" (**BFS 3859**) and get assistance completing it, call the Storage Tank Program at 517-241-8847 or go to **Michigan.gov/StorageTanks** (select "Aboveground Storage Tanks").

ASTs storing flammable and combustible liquids-Act 207 that do not have to be plan reviewed are still subject to the following requirements found in the Storage and Handling of FL/CL Rules.

Secondary Containment

Most ASTs must have secondary containment. Several containment systems are acceptable to the Storage Tank Program: tanks with built in secondary containment, vaulted systems, concrete encasement, and lightweight thermal insulated tanks. For information on secondary containment, call the Storage Tank Program directly at 517-241-8847. There are also alternative methods of secondary containment, which must be approved during the plan review conducted by the Storage Tank Program. For more information about secondary containment, see Chapter 4.1.

Spill and Overfill Protection

Since August 12, 2008; all new or existing ASTs must have spill and overfill protection.

Corrosion Protection

ASTs must have a type of approved corrosion protection. A single- or double-bottom shop manufactured tank that has an external mastic-coated bottom can only be installed on a concrete or asphalt pad that is higher than the surrounding dike floor. Cathodic protection that is properly engineered and maintained must be used for the exterior of single- or double-bottom tanks that are installed on earth and gravel. Also, cathodic protection can be used on single- or double-bottom tanks that are installed on a concrete or asphalt pad at the same level as the rest of the dike floor. Additional requirements and guidelines can be found in the Storage and Handling of FL/CL Rules.

Control of Ignition Sources

ASTs, as regulated by the Storage Tank Program, have fire hazards. Precautions should be taken to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited, to open flames, cutting and welding, thermal heat, spontaneous ignition, stray currents, smoking, etc. All equipment such as tanks, machinery, and piping must be bonded or otherwise connected to the ground to prevent static electricity.

AST System Out-of-Service

An AST system that is going to be out-of-service for more than 12 months must follow the proper procedures. The AST system owner/operator is required to have the tank and related piping completely emptied and cleaned (professionally) to a vapor free condition. The piping must be disconnected from the AST system. The AST system must also be safeguarded against trespass. The owner/operator has the option of removing the tank system from the property. All tanks

removed from the property must be disposed of properly. The facility owner/operator must submit the "*Change of Information Form*" (BFS 3858) for ASTs to notify the Storage Tank Program that the AST system is out-of-service or of the AST removal. See Section 4.3.1 above for details on emptying the tank and manage any wastes requiring removal.

Releases, Reporting, and Investigation

Releases or suspected releases of a regulated substance from flammable and combustible liquid ASTs and heating oil ASTs must be reported to the appropriate EGLE RRD District Office and the local fire department, or by calling PEAS at 800-292- 4706 within Michigan or 517-373-7660 if outside Michigan. Some signs that a release has occurred are visibly stained soils, holes in the AST, and odoriferous soils. For more information about handling media and debris from an AST release, see section *Tank Removal, Closure and Changes of Stored Material* related to USTs. However, there is no exclusion from the state and federal regulations for petroleum contaminated media from an AST.

Emergency Planning and Training

You need to know what to do in case of a fire, spill, or any on-site emergency. An emergency action plan must be available and made known to employees to respond to fire or other emergencies. (Alternate fire safety measures on-site must be in place while any fire safety equipment is shut down.) This emergency plan should be coordinated with your local emergency response agencies, such as fire, police, etc. In most cases, your local agencies will respond to your alarm or call. Additional requirements for release prevention and response planning are found in Chapter 6. Without a proper emergency plan in place, you are likely to lose more products, increase your costs of cleanup, and endanger the environment and human lives.

4.4 HAZARDOUS MATERIAL-USDOT TRANSPORTATION, SHIPPING, AND RECEIVING

The transportation of hazardous material-USDOT is regulated by the U.S. Department of Transportation. The USDOT operates under the authority of the Hazardous Materials Transportation Act and the Federal Hazardous Materials Regulations (FHMR) contained in Title 49, Parts 100-185 of the Code of Federal Regulations, administered by the Pipeline and Hazardous Materials Safety Administrations (PHMSA). Within USDOT, the Federal Motor Carrier Safety Administration (FMCSA) is responsible for enforcing the FHMR as it applies to highway transportation. At the state level, the Michigan State Police (MSP) Commercial Vehicle Enforcement Division is responsible for enforcing the FHMR and the Federal

NOTE:

Hazardous materials –EGLE are defined to include only hazardous waste and liquid industrial waste.

Hazardous materials – USDOT includes products and waste that pose a hazard during transport.

Motor Carrier Safety Regulations, both of which have been adopted into state law under Michigan's Motor Carrier Safety Act, Public Act 181 of 1963, as amended (Act 181).

4.4.1 HAZARDOUS MATERIAL-USDOT TRANSPORTERS

The USDOT defines a hazardous material-USDOT as "a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, which includes hazardous waste." Hazardous material-USDOT may pose varying degrees of risk in transportation, depending on the type of substance. Transporters of hazardous material-USDOT must be aware of how these materials are classified to ensure compliance with packaging, handling, marking, labeling, placarding, shipping paper, and training requirements. Hazardous material-USDOT may be classified as any of the following: explosives, gases, flammable liquids, flammable solids, oxidizers, poisons and infectious substances, radioactive material, corrosives, and miscellaneous goods.

A table of hazardous material-USDOT classes and an index to their class definition are included in Title 49, Part 173.2 of the Code of Federal Regulations. If the commodity you are transporting is included in one of the classifications identified, you are subject to the USDOT's Hazardous Materials Regulations. Another table of hazardous materials-USDOT is contained in Title 49, Part 172.101 of the Code of Federal Regulations. This table is more detailed, lists proper descriptions for the materials, and provides guidance for the packaging and handling of specific hazardous materials-USDOT. This table can be downloaded off the Internet at **www.phmsa.dot.gov/hazmat** (select "Hazardous Materials Regulations" then "Part 172").

4.4.2 LIABILITY OF IMPROPER SHIPMENTS OF HAZARDOUS MATERIAL-USDOT

Compliance with the hazardous materials regulations is the responsibility of both the shipper and carrier. General shipper responsibilities are contained in Title 49, Part 173 of the Code of Federal Regulations. In many cases, shipper and carrier responsibilities overlap. Although both the shipper and the carrier can perform the task, the carrier is ultimately responsible for the shipment during transportation. Title 49, Part 387 of the Code of Federal Regulations sets the insurance requirements for vehicles transporting certain amounts of hazardous materials-USDOT.

Both Michigan and federal law require the carrier to maintain proof of financial responsibility on the federal form, "Endorsement for Motor Carrier Policies of Insurance for Public Liability Under Sections 29 and 30 of the Motor Carrier Act of 1980" (**MCS-90**). Additionally, both carriers and shippers must properly train their employees as required in Title 49, Part 172 of the Code of Federal Regulations. Table 4.2 summarizes shipper and carrier responsibilities.

TABLE 4.2 SHIPPER AND CARRIER RESPONSIBILITIES

Party	Responsibilities
Shipper Responsibilities (**49 CFR 171.1**, Pre-transport functions)	• Determine if the material meets the definition of a hazardous material-USDOT. • Determine class/division. • Prepare shipping papers. • Apply hazard warning labels. • Properly package, mark, and placard materials and vehicle. • Ensure compatibility between materials. • Properly block and brace cargo. • Identify and maintain 24-hour emergency response telephone number and emergency response information. • Ensure all employees handling hazardous materials-USDOT are trained. 
Carrier Responsibilities (**49 CFR 171.1**, Transport functions)	• Meet shipper's requirements when performing shipper's functions. • Ensure vehicle is properly marked and placarded. • Ensure compatibility between materials. • Ensure that the cargo is properly blocked and braced.

4.4.3 HAZARDOUS MATERIAL-USDOT REGISTRATION PROGRAM

The hazardous materials regulations require registration for each person that offers or transports any shipment of hazardous materials that requires placarding (with an exception for farmers offering or transporting hazardous materials in direct support of their farming activities). Each person subject to the requirements of this subpart must pay an annual fee. Registrants must maintain a copy of the application statement and the Certificate of Registration at their principal place of business for a period of three years from the date of issuance.

Each motor carrier subject to the registration must carry a copy of its current Certificate of Registration or another document bearing the registration number identified as the "US DOT Hazmat Reg. No." This document must be on board each truck and truck tractor (not including trailers and semi-trailers) used to transport hazardous materials subject to registration. It must be made available, upon request, to enforcement personnel.

Visit **phmsa.dot.gov/registration/registration-overview** for information about the USDOT's Hazardous Materials Registration Program, including the registration statement (DOT F 5800.2) and instruction booklet, can be found at. You can also call the Hazardous Materials Registration Program at 202-366-4109 or 800-942-6990 to receive instructions on how to register and obtain the "*Hazardous Materials Registration Statement*" (DOT F 5800.2).

4.4.4 HAZARDOUS MATERIAL-USDOT SHIPPING PAPERS

Stipulations for hazardous material-USDOT shipping papers are contained in **49 CFR 172**, Subpart C. According to the Hazardous Materials Regulations, a shipping paper is any shipping document that communicates a hazard and conforms to the requirements contained in the subpart. Essentially, all shipping papers must have four elements referred to as a basic shipping description:

1. Identification number (4-digit number proceeded by "NA" or "UN"))
2. Proper shipping name
3. Hazard class/division
4. Packaging group in Roman numerals as designated for the hazardous material in column (5) of Sec. 172.101 table.

When preparing shipping papers, the basic shipping description must be entered in the order shown above. The requirement for this sequence went into effect on January 1, 2013, and is commonly referred to as "ISHP" given the acronym follows the required order:

1. I for ID #
2. S for Shipping Name
3. H for Hazard Class
4. P for Packing Group, if applicable

In addition to the basic shipping description, shipping papers must also contain the following:

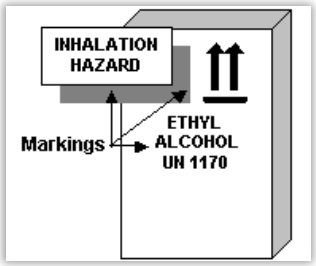
- The total quantity transported,
- The number and type of packages,
- Shipper certification - certifies materials being transported comply with regulations,
- Emergency response telephone number, and

Shippers are required to retain shipping papers for a period of 3 years for hazardous waste and 2 years for all other hazardous material shipments after the material is accepted by the carrier. The carrier is required to retain shipping papers for a period of 3 years for hazardous waste and 1 year for all other hazardous materials. Depending on the material being transported, there may be additional requirements contained in 49 CFR 172.203.

Emergency response information – specific requirements pertaining to this information are outlined in **49 CFR 172**.602,604.

Note: The North American **Emergency Response Guidebook** is a reference guide that identifies the proper response procedures that should be taken in the event of a hazardous materials spill or accident. It also lists specific and generic hazards associated with a particular material. The guidebook can be accessed from the Internet at **phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg**. A free **ERG App** can be downloaded from this site.

4.4.5 HAZARDOUS MATERIAL-USDOT MARKING



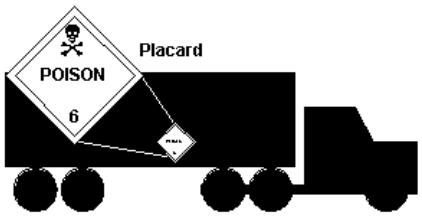
Markings are placed directly on the outer packaging of hazardous material-USDOT to identify the contents inside. The marking will provide a descriptive name, identification number (4-digit number proceeded by "UN" or "NA"), specifications, plus any required instructions and/or cautions. The provisions for marking packages are contained in **49 CFR 172**, Subpart D. The basic marking requirement consists of the proper shipping name (e.g., Ethyl Alcohol) and the identification number (e.g., UN 1170) of the hazardous material-USDOT contained in the package. This information is provided in the Hazardous Materials Table contained in 49 CFR 172.101, which can be found at **phmsa.dot.gov**. Select "Hazardous Materials Regulations, then select Part 172 Subpart C. Depending on the material, there may be additional marking requirements. Empty container exceptions as well as information on authorized abbreviations; bulk packaging; liquid hazardous materials; and marking requirements for explosives, poisonous, and ORM-D materials can all be found in **49 CFR 172**, Subpart D.

4.4.6 HAZARDOUS MATERIAL-USDOT CONTAINER LABELING

A label is a prescribed hazard warning notice that is applied to the outside of shipping containers of hazardous material-USDOT. Labels identify the primary and subsidiary hazards specific to materials and may give information about handling precautions and prohibitions as well.

If you are transporting hazardous material-USDOT, the containers must be labeled accordingly. General labeling requirements are contained in **49 CFR 172**, Subpart E. A table that identifies proper labeling specifications for each hazardous material-USDOT class and division can be found in 49 CFR 172.400. Other sections in Subpart E address authorized label modifications, label placement, and specifications. Title 49, Part 172, Subpart E of the Code of Federal Regulations provides a separate section for each authorized label and gives a description and an example of the label. It is recommended that for specific information on labeling requirements, you refer directly to 49 CFR 172, Subpart E.

4.4.7 HAZARDOUS MATERIAL-USDOT PLACARDING OF CARRIERS



Placards are displayed on each end and each side of a vehicle and are used to communicate the hazard to industry personnel, the public, and first responders. Unless the regulations tell you differently, each person who offers or transports a regulated hazardous material-USDOT must comply with the placarding requirements.

General placarding requirements are contained in **49 CFR 172**, Subpart F. Placard specifications for each hazardous material-USDOT class and division are found in 49 CFR 172.500-560.

When evaluating placarding requirements, you should be familiar with two classification tables, referred to as "Table 1" and "Table 2," located in 49 CFR 172.504. These tables identify when a carrier must be placarded. According to the regulations, the following hazardous material-USDOT classes must be placarded regardless of quantity:

CLASS	DIVISION
Explosives	1.1, 1.2, 1.3
Poisonous Gas	2.3
Dangerous When Wet	4.3
Organic Peroxide	5.2*
Poison/Toxic	6.1**
Radioactive	7

* Type B, liquid or solid, temperature-controlled

** PG1, Inhalation Hazard, Zone A and B

Except for the materials listed above, a placard is not required for materials if the individual package does not exceed 450 liters for liquid, 400 kilograms for solid, and 454 kilograms for gas and the aggregate gross weight of the total load of hazardous materials does not exceed 1,001 pounds. If the cargo exceeds these limits, they require placards. If a single container exceeds these limits, they are a "bulk package" and must also be placarded. Some materials have mandatory subsidiary hazard placard requirement (see 49 CFR 172.505). Subsidiary hazards that require a placard include: (1) Poison Inhalation Hazards (PIH); (2) Dangerous When Wet (4.3); and (3) Radioactive materials with a corrosive subsidiary and poison subsidiary for Uranium Hexafluoride. All other subsidiary hazards may be placarded, but it is not required.

Empty, non-bulk packages containing only the residue of a hazardous material-USDOT do not have to be placarded. Neither do containers that are cleaned and purged or refilled with a non-hazardous material.

4.4.8 MATERIALS OF TRADE EXCLUSION FROM HAZARDOUS MATERIAL-USDOT

Materials of Trade (MOTs) are hazardous materials that are carried on a motor vehicle for at least one of the following purposes:

- To protect the health and safety of the motor vehicle operator or passengers (e.g., insect repellant, self-contained breathing apparatus, and fire extinguishers).
- To support the operation or maintenance of a motor vehicle or auxiliary equipment (e.g., engine starting fluid, spare battery, and gasoline).
- When carried by a private motor carrier to directly support a principal business that is not transportation (e.g., lawn care, pest control, plumbing, welding, painting, and door-to-door sales).

Since MOTs are transported in small quantities, usually as part of a business, they are subject to less regulation. Title 49, Part 173.6 of the Code of Federal Regulations identifies the rules that apply to MOTs, the exceptions, and qualifying factors.

Basically, MOTs do not require shipping papers, emergency response information, placarding, formal training, or record keeping. However, if you operate a vehicle containing MOTs, you must know if the materials are hazardous and you must be aware of the requirements for MOTs. There are some packaging and marking requirements that apply to certain MOTs that are explained in **49 CFR 173.6**.

If you would like more information about MOTs, download a copy of the publication "What are Materials of Trade, and What Regulations Apply?" at **phmsa.dot.gov/hazmat/library.**

> You can also call the USDOT's Hazardous Materials INFO-LINE at 800-467-4922 for more information about Materials of Trade.

4.4.9 LOADING AND UNLOADING, COMPATIBILITY, AND PACKAGING OF HAZARDOUS MATERIAL-USDOT

Regulations pertaining to the loading and unloading of hazardous material-USDOT to and from a motor carrier are contained in Title 49, Part 177, Subpart B of the Code of Federal Regulations. **49 CFR 177**, Subpart B identifies the general unloading and loading regulations that apply to all hazardous material-USDOT transportation and specific regulations that pertain to the unloading and loading of a particular class or division of hazardous material-USDOT. Since there are so many regulations that refer to specific materials, it is best to find them in the regulations cited above. In addition to these federal regulations, specific unloading and loading instructions for flammable and combustible liquids-Act 207 are provided in administrative rules R 29.2201-2234, promulgated under the Michigan Fire Prevention Code, Public Act 207 of 1941, as amended.

Both shippers and carriers are responsible for compatibility. The requirement for shippers to comply with compatibility considerations is contained in 49 CFR 173.22. These provisions are to ensure that incompatible substances are segregated during transport. In order to determine compatibility for shipments by highway, shippers and carriers should refer to 49 CFR 177.848, Segregation of Hazardous Materials.

General requirements for packaging and packages are contained in 49 CFR 173.24. This section addresses topics like applicability, specifications, compatibility, closures, and venting. Empty packages are regulated under 49 CFR 173.29. Except where otherwise stated, empty packaging that contains only the residue of a hazardous material-USDOT shall be offered for transportation and transported in the same manner as when it previously contained a greater quantity of that hazardous material-USDOT.

4.4.10 HAZARDOUS MATERIAL-USDOT EMPLOYEE TRAINING

The hazardous material-USDOT employee training requirements can be found in 49 CFR Part 172, Subpart H (Sections 172.700-704) and applies to intrastate and interstate transportation, and to both shippers and motor carriers. Transportation training modules and other training resources are available at **phmsa.dot.gov/training**.

The training standard requires training in the following five areas for both the shipper and carrier: (1) General Awareness/ Familiarization; (2) Function Specific; (3) Safety; (4) Security Awareness; and in certain circumstances, (5) In-depth Security Training.

The General Awareness/Familiarization Training requires each hazmat employee to be provided general awareness/familiarization training with the FHMR, and to enable the employee to recognize and identify hazardous materials consistent with the hazard communication standards (markings, labels, placards, etc.).

Function-Specific Training specifies that employees must receive training concerning the regulations that are specifically applicable to the functions the employee performs. The specific training provided will vary depending on the individual's involvement in the transportation system. For example, a shipping clerk would need training in the regulations applicable to shipping papers, whereas a dock employee would need loading and unloading, outage standards and package integrity, segregation, and separation training, etc. This also includes hazardous waste manifest training.

Safety Training must cover the emergency response information required in 49 CFR 172, Subpart G, measures to protect the employee from the hazards associated with materials to which they may be exposed to in the workplace, and methods and procedures for avoiding accidents. One exception to this portion of the training requirement are employees who repair, modify, recondition, or test hazardous materials packaging, and who do not perform any other function subject to the regulations, do not have to receive safety training.

Security Awareness Training was added to the safety training requirements and must be done as part of the regular hazmat training. As part of the required training, a hazmat employee must receive training on recognizing and responding to possible security threats and an awareness of security risks associated with hazardous material transportation. All safety training was required to include a security awareness training component provided to shippers and carriers as of March 24, 2006.

In-depth Security Training is required of hazmat employees or persons who are required to have a Security Plan in accordance with 49 CFR Part 172, Subpart I (see Chapter 6.2.7). This training must include company security objectives, specific security procedures, employee responsibilities, actions to take in the event of a security breech and the organizational security structure.

In addition to the above training, carriers are required to meet the mode-specific training requirements for highway transportation found in 49 CFR 177.816. This section requires training on the Federal Motor Carrier Safety Regulations (FMCSR); the safe operation of the vehicle (backing, braking, parking, etc.); pre-trip safety inspections; use of vehicle's controls and equipment, including emergency equipment; effects of braking and curves, speed on vehicle control; hazardous weather or road conditions; operations in tunnels, bridges, and railroad crossings; vehicle attendance, parking, smoking, routing, and incident reporting; segregation of cargo; loading and unloading, load securement; and specialized training for cargo tank and portable tank operations and other specific requirements. The Commercial Driver License (CDL) testing requirements may be used for compliance with this portion of the training for person with a hazardous materials or tank vehicle endorsement.

Other training standards may be substituted for portions of the USDOT training requirements, if they meet the standards outlined in 49 CFR Part 172, Subpart H. For example, OSHA or U.S. EPA training may cover portions of the training required by USDOT and would not have to be repeated. If the training differs in any technical areas, like definitions, then the employee must be trained in those areas. Additionally, training completed by previous employers may also be used, if documented.

"**Hazmat employee**" means a person who is employed by a hazmat employer and who in the course of employment directly affects hazardous materials transportation safety. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce. This term includes an individual, including a self-employed individual, employed by a hazmat employer who, during the course of employment: (1) Loads, unloads, or handles hazardous materials; (2) Manufactures, tests, reconditions, repairs, modifies, marks, or otherwise represents containers, drums, or packagings as qualified for use in the transportation of hazardous materials; (3) Prepares hazardous materials for transportation; (4) Is responsible for safety of transporting hazardous materials; or (5) Operates a vehicle used to transport hazardous materials.

"**Hazmat employer**" means a person who uses one or more of its employees in connection with: transporting hazardous materials in commerce; causing hazardous materials to be transported or shipped in commerce; or representing, marking, certifying, selling, offering, manufacturing, reconditioning, testing, repairing, or modifying containers, drums, or packaging as qualified for use in the transportation of hazardous materials. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce. This term also includes any department, agency, or instrumentality of the United States, a state, a political subdivision of a state, or tribe engaged in an activity described in the first sentence of this definition.

The training for a hazmat employee must be completed within 90 days after employment. Employees who change hazardous materials job functions must complete training in the new job function(s) within 90 days after the change. A hazmat employee may perform new hazardous materials job functions before completing training if he does so under the supervision of a properly trained and knowledgeable hazmat employee.

Training must be done every three years. However, assumed in that requirement is the fact that any time the regulations change affecting a particular job function, the employee(s) responsible for that function must be trained on the changes. The training may be done within the company or through other public or private sources.

A record of current training, inclusive of the preceding three years, must be created and retained by the employer for each hazmat employee for as long as they are employed as a hazmat employee and for 90 days thereafter. The record must include the employee's name; the most recent training completion date; a description, copy, or the location of the training materials used to meet the requirements; the name and address of the instructor(s); and a certification that the hazmat employee has been trained and tested.

There are no exceptions to the training standards for any quantities or classes of hazardous materials unless a particular operation or material is excepted from the entire subchapter. While the regulations provide great flexibility in the details of the training supplied (i.e., no minimum number of hours or test questions), inherent in that flexibility is a large amount of liability should a hazardous materials incident occur, especially if employee error is a causative factor. Employers are cautioned to thoroughly examine the training program their employee receives, particularly if the training is offered through an outside source.

Additionally, Section 49 CFR 172.606(a), requires carriers to instruct drivers to contact the carrier in the event of a hazardous materials incident.

As soon as practical but no later than 12 hours after the occurrence of any reportable incident as defined in CFR 49 Part 171.15 requires each person in physical possession of a hazardous material shall provide notice by telephone to the National Response Center (NRC) on 800-424-8802. A more detailed incident report must be submitted on DOT Form F 5800.1 within 30 days of discovery of the incident to the Information System Manager, at the Pipeline and Hazardous Materials Safety Administration, Department of Transportation, DHSM-63, Washington, DC, 20590-0001.

4.4.11 MICHIGAN TRANSPORTATION REQUIREMENTS

Michigan's **Motor Carrier Safety Act**, Public Act 181 of 1963, as amended, adopted the Federal Hazardous Materials Regulations into state law. Aside from these regulations, there are some additional requirements that have been implemented by the state to further regulate the transportation of materials.

Permits and Registration

Michigan's **Hazardous Materials Transportation Act**, Public Act 138 of 1998, as amended (Act 138), regulates transporters hauling hazardous materials as defined by Act 138 (hazardous materials-EGLE). Act 138 defines hazardous materials-EGLE to include hazardous waste and liquid industrial by-products. Transporters of hazardous materials-EGLE in Michigan must be registered and permitted as part of the **Alliance for Uniform Hazmat Transportation**. Transporters of liquid industrial by-products are also required to be permitted and registered under Act 138. Registrations must be renewed annually, and the permits are effective for three years. In Michigan, this program is administered by EGLE's Hazardous Waste Program, Southeast Michigan District Office.

The registration and permit application and instructions for hazardous waste transportation can be found at **hazmatalliance.org**. Hazardous waste applications must be completed **online** and require the Attachment A fee worksheet (EQP 5122A) if authorization to transport liquid industrial by-products is also desired. For transporting only liquid industrial by-products, applications can be downloaded **Michigan.gov/EGLEwaste** by selecting "Transporters" and "Liquid industrial By-product Permits and Registration Forms & Instructions."

License Requirements

In Michigan, you are required to obtain a commercial driver's license (CDL) to operate a commercial vehicle. In addition to this certification, special endorsements on your CDL are required to transport certain cargo. A Hazardous Materials Endorsement ("H") is necessary for any vehicle, regardless of gross vehicle weight rating (GVWR) that needs to be placarded under the Federal Hazardous Materials Regulations. A Tank Endorsement ("N") is required for anyone operating a tank vehicle, according to the **Michigan Vehicle Code**, Public Act 300 of 1949, as amended.

4.5 STORAGE OF POLYCHLORINATED BIPHENYLS (PCBS)

Polychlorinated Biphenyls (PCBs) are subject to state and federal regulations. However, in December 2012, the state rescinded Part 147 of the Natural Resource and Environmental Protection Act, Act 451 of 1994, as amended, and the corresponding Part 147 Rules. Michigan now defers to the U.S. EPA's implementation of the federal **Toxic Substances Control Act** (TSCA) to oversee the handling and disposal of PCB containing materials in Michigan.

PCBs, and oils and other compounds or products containing 1% or more, by weight, of PCBs, are a polluting material under the state's Part 5 Rules (Spillage of Oil and Polluting Material) promulgated under Part 31 of Act 451 except if it is in active installations of oil containing electrical equipment such as transformers and capacitors. EGLE oversees the state rules, which includes secondary containment, Pollution Incident Prevention Plan (PIPP), and release reporting

requirements if the manufacturer meets the facility definitions and threshold management quantities listed in these rules for all other PCBs and polluting materials on-site. See Chapters 4.2 and 6 for more information about those Part 5 Rule requirements.

The U.S. EPA carries out the requirements of the federal Toxic Substances Control Act (TSCA) and its implementing regulations found at Chapter 40 of the Code of Federal Regulations Part 761 (40 CFR 761), Part 761. The U.S. EPA's regulations apply to the manufacture, processing, distribution in commerce, marking, use, storage, cleanup, and disposal of PCBs. There may be different requirements for different PCB concentration levels, for example:

- < 50 ppm (or ≤10 micrograms/100 cm^2 for certain contaminated surfaces)
- ≥ 50 ppm to < 500 ppm (or > 10 micrograms/100 cm^2 but < 100 micrograms/100 cm^2 for certain contaminated surfaces)
- ≥ 500 ppm (or ≥ 100 micrograms/100 cm^2 for certain contaminated surfaces)

Since the rules are too numerous to include in this publication, the following only summarizes how to identify PCBs and mentions a few requirements. Go to **www.epa.gov/pcbs** for more information on the PCB regulations, approved disposal facilities, and guidance documents. U.S. EPA's PCB Question and Answer Manual is a good place to start when researching U.S. EPA policy and guidance on PCB regulations. It covers the breadth of the PCB regulations, including the use, cleanup, and disposal of PCBs. The PCB Question and Answer Manual can be found on-line at **epa.gov/pcbs/polychlorinated-biphenyl-pcb-question-and-answer-manual-and-response-comment-documents.** To prevent PCB contamination in used oil and be able to identify the source if PCBs are found to be present in used oil, follow the best management practices recommended by the U.S. EPA in their **Preventing and Detecting PCB Contamination in Used Oil** Fact Sheet.

If you have questions about PCBs, call the U.S. EPA Region 5 PCB Coordinator 312-886-7890 or visit **epa.gov/pcbs/epa-region-5-polychlorinated-biphenyls-pcbs.**

4.5.1 IDENTIFYING PCBS

PCBs can be found in liquid, non-liquid, and a combination of liquid and non-liquid or multiphasic forms. Usually, this chemical can be found in electrical equipment such as transformers, circuit breakers, light ballasts, switches, large capacitors, etc.; or other equipment like air compressors; or may be a byproduct of the manufacturing process. See the definitions for "excluded manufacturing process" and "excluded PCB products" in the regulations to determine if any exclusions apply to your material(s) (40 CFR 761.3). PCBs may be found in dielectric fluids, solvents, oils, hydraulic fluids or other heat transfer fluids, paints, caulks, or coatings, sludges, slurries, and other chemical substances.

See epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs for information about identifying PCB wastes. PCBs were marketed under various trade names. These include:

- Abestol
- Inerteen
- Aroclor
- Kennechlor
- Askarel
- No-Flamol
- Chlophen
- Phenoclor
- Chlorextol
- Pyralene
- DK
- Pyranol
- EEC-18
- Saf-T-Kuhl
- Fenclor
- Solvol

You can do any of the following to determine if you have regulated PCB concentrations:

- Look at the equipment label or nameplate for the words "No PCBs" or "PCBs" or any of the PCB trade names. If the nameplate is not readable, you may want to check with the equipment manufacturer for documentation as to the PCB concentration.
- Review service records or other documentation that indicates the PCB concentration of all fluids used since the article was first manufactured. You may need to check with your utility company to see if they have any records regarding the PCB concentration.
- Have the equipment or suspect material tested. At the time of disposal, you must know the equipment's or suspect material's actual PCB concentration. The concentration assumptions do not apply to PCBs that have spilled or been otherwise released from the equipment.
- If you do not have documentation or have not had tests conducted that identify the PCB level, you may use the assumptions regarding PCB concentrations found at 40 CFR 761.2 for use or storage for reuse.
- Transformers and capacitors with less than 3 pounds of fluids, circuit breakers, reclosers, oil-filled cable, and rectifiers can be assumed to contain less than 50 ppm when in use.
- Transformers manufactured before July 2, 1979, that contain 3 pounds or more of fluid other than mineral oil contain ≥ 500 ppm. If the date of manufacture is unknown, assume it is a PCB-transformer.

  If you don't know how much dielectric fluid is present in the capacitor, the TSCA regulations provide the following assumptions:

  - ✓ If the capacitor total volume is less than 100 cubic inches, assume it has less than three (3) pounds of dielectric fluid.
  - ✓ If the capacitor total volume is more than 200 cubic inches, assume it has more than three (3) pounds of dielectric fluid.
  - ✓ If the capacitor volume is between 100 and 200 cubic inches, and if the total weight is less than nine (9) pounds, assume it has less than three (3) pounds of dielectric fluid.

- Mineral oil-filled electrical equipment manufactured before July 2, 1979, contains ≥ 50 ppm to < 500 ppm. If the date of manufacture is unknown, assume it is PCB-contaminated.
- Capacitors manufactured before July 2, 1979, contain ≥ 500 ppm. Assume any capacitors manufactured after that date are non-PCB. If the date of manufacture is unknown, assume it contains ≥ 500 ppm.
- For any electrical equipment manufactured after July 2, 1979, assume it is non-PCB.

You must label specific items with the applicable mark that identifies them as containing PCBs. See 40 CFR Part 761, Subpart C regarding these marking requirements.

4.5.2 GENERAL RECORD KEEPING AND REPORTING REQUIREMENTS

There are general recordkeeping and reporting requirements in 40 CFR, Part 761, Subpart J for different types of operations:

- 761.180(a): PCBs and PCB Items in service or projected for disposal.
- 761.180(b): Disposers and commercial storers of PCB waste.
- 761.180(c): Incineration facilities
- 761.180(d): Chemical waste landfill facilities
- 761.180(e): High efficiency boiler facilities
- 761.180(f): Retention of special records by storage and disposal facilities
- 761.180(g): Reclassification records

4.5.3 NOTIFICATION REQUIREMENTS

All transporters, commercial storage and disposal companies, and companies conducting research and development activities must notify the U.S. EPA when handling regulated PCBs. If you are a user, owner, or processor of PCBs or PCB items and you maintain your own storage facilities subject to 40 CFR 761.65(b) or (c)(7), you must notify as a generator with an onsite storage facility for PCBs. See 40 CFR 761.205. The U.S. EPA has two notification forms on the Internet—a "*Notification of PCB Activity*" (**Form 7710-53**) and a "*PCB Transformer Registration*" (**Form 7720-12**).

To notify, complete and submit the "*Notification of PCB Activity Form*" (**U.S. EPA Form 7710-53**) if one has not already been sent to the U.S. EPA or if your PCB activities have changed since it was last submitted. A facility will then obtain an identification number from the U.S. EPA if they don't already have one. If the facility already has a Site Identification Number also known as a U.S. EPA Identification number assigned under the hazardous waste program (see Chapter 2), the U.S. EPA will confirm the use of this number under the TSCA program. If facilities do not have a Site Identification Number, also known as a U.S. EPA Identification Number, assigned under another

program, the U.S. EPA will issue an EPA-PCB identification number under the TSCA program. Do NOT use the "*Michigan Site Identification Form*" (EQP 5150) to request an EPA-PCB identification number for handling PCBs under the TSCA program.

If a facility has a PCB transformer (i.e., ≥ 500 ppm), it must fill out the "*PCB Transformer Registration*" (**Form 7720-12**). Both of these forms are found at **epa.gov/pcbs/disposal-and-storage-polychlorinated-biphenyl-pcb-waste#notifications**.

4.5.4 STORING PCB ARTICLES

Different regulations apply to storing PCBs for reuse (see 40 CFR § 761.35) and storing PCB waste prior to disposal (see 40 CFR § 761.65). PCB articles such as capacitors, transformers, electric motors, pumps, and other manufactured items can be stored in non- TSCA designed storage area for reuse by the owner or facility operator, under specific conditions. There are also requirements to have markings or signs that state PCBs are in the area. PCB articles can be stored for reuse no more than five years after being removed from use or five years after August 28, 1998, whichever is later. If necessary to store longer, you must request an extension period from the U.S. EPA or place the article in an area that meets specific design requirements or has a RCRA permit. Articles may be stored for use indefinitely if kept in an area that meets specific design requirements under 40 CFR §761.65(b), such as having a roof, walls, and diking, or has a RCRA permit for managing hazardous waste. Discuss the specific storage design requirements with the U.S. EPA. Call EGLE's Hazardous Waste Program, Permit Unit at 517-284-6838 to discuss RCRA permit requirements. Any PCB article stored for reuse must be authorized for use under 40 CFR § 761.30 or it must be disposed of under 40 CFR 761 Subpart D. Storage for reuse must comply with the federal regulations found at 40 CFR § 761.35

PCBs being stored for disposal must comply with the regulations found at 40 CFR § 761.65, including storage area design requirements and the one-year limit on storage for disposal. In addition, commercial storage facilities that store more than 500 gallons at one time of regulated PCBs generated by others must have a PCB storage approval (permit) from U.S. EPA.

Use areas and indoor storage areas for PCB containing materials must be designed, constructed, maintained, and operated to prevent releases of polluting materials through sewers, drains, or to a public sewer system or to surface water or groundwater. If the PCB material is stored outdoors and is in liquid form, there are secondary containment requirements under Part 31 of Act 451 administrative rule R 324.2005 if the facility meets those regulatory threshold planning quantities.

PCB wastes can also be sent to an approved storage facility with a manifest before being disposed. The U.S. EPA has a list of these facilities on the Internet. Be sure to allow enough time to transport the PCB waste from the storage facility to the disposal company, and have the waste disposed of within the allowable one-year time frame.

4.5.5 PCB DISPOSAL

Disposal of PCB waste is regulated by the U.S. EPA under 40 CFR Subpart D. If the PCB waste is liquid, it is also subject to Part 121 of Act 451. Any regulated PCB waste under TSCA must be disposed of within one year from the date it was determined to be a waste unless the U.S. EPA granted an extension. Be aware that there are instances where you must notify the U.S. EPA prior to engaging in remediation or disposal activities, for example, for self-implementing or risk-based cleanup and disposal activities under 40 CFR 761.61.

Identification Numbers

See 4.5.3 for information on notification and obtaining an EPA-PCB identification number. Consider the following for documenting PCB containing wastes for disposal:

- Waste contains PCB concentration of 50 ppm or greater: Generator may use the Site Identification Number, also known as the EPA Identification Number, issued by EGLE. If the facility does not have a Site Identification Number, the generator may use the generic identification number "40 CFR Part 761" on the waste manifest if the generator meets the TSCA exemption in 40 CFR 761.205.
- Solid PCB remediation waste containing PCB concentrations less than 50 ppm or PCB Bulk Product Waste containing ≥ 50 ppm: Check with municipal solid waste landfill if they will accept. Under the federal PCB regulations, the generator must provide written notice, including the quantity to be shipped and highest concentration of PCBs, at least 15 days before the first shipment of bulk PCB remediation waste and/or PCB bulk product waste as defined in 40 CFR 761.3 from each cleanup site by the generator to each off-site facility where the waste is destined (40 CFR 761.61 and 761.62(b)(4))). If they do, it is not necessary to obtain a Site Identification Number or use a Uniform Manifest for hazardous waste disposal. If landfill won't accept the waste, contact a PCB disposal company to determine what they require.

Manifests and Disposal Records

Many regulated PCBs must be **manifested** on a **uniform hazardous waste manifest** form and disposed of at a U.S. EPA approved facility. See 40 CFR, Part 761, Subpart K for manifest requirements. See Chapter 2.4.5 to learn more about uniform manifest requirements for shipping hazardous waste and shipping document requirements for shipping discarded liquids. For manifesting waste containing PCBs, check with the waste disposal company about which waste code(s) to use for manifesting the different types of PCB wastes. For more information on uniform manifests, go to **Michigan.gov/EGLEwaste,** select the "Hazardous Waste" tab on the left, then select "Uniform Manifest Information" under the "Forms" heading.

You should receive a "*Certificate of Disposal*" from the disposal facility within 30 days of the disposal completion date unless a different timeframe is identified in a contractual agreement between the generator and disposal facility.

Refer to the definition of PCB bulk product waste found under 40 CFR § 761.3 and the manifesting and disposal requirements for PCB bulk product waste prescribed under 40 CFR § 761.62). Bulk product waste generally includes waste derived from manufactured products that are in a non-liquid state and have PCB concentrations greater than or equal to 50 ppm and not contaminated by spills from regulated PCBs like debris from building demolition and other manmade structures manufactured, coated, or serviced with PCBs; applied dried paint, caulking, etc.

Refer to the definition of PCB bulk remediation waste found in 40 CFR 761.3 and the clean-up, manifesting and disposal requirements for PCB bulk remediation waste prescribed under 40 CFR 761.61. PCB bulk remediation waste generally includes the following materials: soil, gravel, dredge materials, sewage sludge, and spill clean-up materials like buildings and other man-made structures (such as concrete floors, wood floors, or walls) contaminated from a release of PCB. See the definition for additional materials that may be managed as PCB bulk remediation waste.

For a summary of requirements for small capacitors and ballasts in fluorescent light fixtures, see Chapter 2.7.5. For information about PCB soil cleanup criteria, see Chapter 6.4.3.d.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common air regulations topics

Secondary Containment - Flammable and combustible liquids-Act 207
LARA, Storage Tank Program: 517-241-8847 | Michigan.gov/StorageTanks

Secondary Containment - Flammable and combustible liquids-MIOSHA
MIOSHA, Consultation Education & Training Division: 517-322-1809 | Michigan.gov/miosha

Secondary Containment - Hazardous waste-EGLE
EGLE, District Office, Hazardous Waste Program | Michigan.gov/EGLEwaste
Guide to Understanding Secondary Containment Requirements in Michigan

Secondary Containment - Polluting materials
EGLE, District Office, Part 5 Rules Staff | Michigan.gov/Part5

- Pollution Incident Prevention Plan (PIPP) and Part 5 Rules and Information Packet
- Salt and Brine Storage Guidance
- U.S. EPA Bulk Storage Container Inspection Fact Sheet

ASTs and USTs Regulations
LARA, Storage Tank Program: 517-241-8847 | Michigan.gov/StorageTanks

USTank Cleanup Fund, Legacy Release Program, and Public Highway Cleanup Program
Michigan Underground Storage Tank Authority (MUSTA)
517-284-6537 |Michigan.gov/EGLEMUSTA

Risk Based Corrective Action (RBCA)
American Society for Testing and Materials (ASTM): 610-832-9585 | www.astm.org

National Fire Protection Association (NFPA) Publications
800-344-3555 | www.nfpa.org/codesonline

Polychlorinated Biphenyls (PCBs)
U.S. EPA Region 5: 312-886-7890 or 800-621-8431 | epa.gov/pcbs

Transportation of hazardous material-USDOT
Michigan State Police, Commercial Vehicle Enforcement Division
517-241-0506 | Michigan.gov/MotorCarrier

U.S. Department of Transportation: 800-467-4922 | http://phmsa.dot.gov/hazmat

Transportation of hazardous material-EGLE (hazardous waste and liquid industrial by-products)
586-753-3850 or 586-494-5091 | Michigan.gov/EGLEwaste ("Transporters")

APPENDIX 4-A: SUMMARY OF SECONDARY CONTAINMENT REGULATIONS

The material that you store at your facility may be regulated by more than one agency and, therefore, listed in more than one row of this summary. This summary is not all-inclusive.

Cyanide

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
All surface coating operations	Dikes or other arrangements must be provided to prevent the possibility of intermixing of cyanide and acid in the event of tank rupture.	MIOSHA General Industry Health Standards – **Part 526** R 3320(10), Open Surface Tanks	LEO-MIOSHA **Consultation, Education & Training Division:** 517-322-1809

Flammable and Combustible Liquids-MIOSHA

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
Varies with container type and class of material and whether material is stored indoors or outside. Limits how much material can be kept in storage cabinets.	• Storage room size varies with amount stored and fire protection rating • At least 6" outdoor curb height. • At least 4" sill height or sunken floor for inside storage room.	MIOSHA General Industry Safety Standards – **Part 75, Flammable and Combustible Liquids**	LEO-MIOSHA **Consultation, Education & Training Division:** 517-322-1809

Flammable and Combustible Liquids-MIOSHA (associated with coating, finishing, treating, or similar processes)

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
1. Dip tanks of over 150 gallons in capacity or 10 square feet in liquid surface area 2. Dip tanks over 500 gallons in liquid capacity	• Equipped with trapped overflow pipes that prevent passage of vapors and lead to a safe location outside buildings. Smaller dip tanks shall also be so equipped, where practical. • Have trapped drain discharged to a closed properly vented salvage tank or to a safe location outside that will not endanger property. Note: capacity must be able to handle fire suppression water	MIOSHA General Industry Safety and Health Standards – **Part 76 Spray Finishing and Dip Tanks**	LEO-MIOSHA **Consultation, Education & Training Division:** 517-322-1809

Flammable and Combustible Liquids-Act 207 and Hazardous Materials-Act 207

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
Aboveground Storage • Aboveground Storage Tank 60 gallons or larger capacity. • Any size container holding flammable liquids requires means of preventing flow into adjacent building area. • Any container less than 660 gallons capacity if secondary containment is determined to be necessary by authorities. • Loading/unloading areas	• Volume varies with amount stored and fire protection level; indoor/outdoor restriction; distance requirements between tanks, buildings, and property lines; aisle width between containers; etc. • Tanks must be in an area capable of containing 100% volume of the largest tank, plus the volume occupied by other tanks in the same area measured from the height of the dike wall. • At least 4" sill height or sunken floor for inside storage room or use of open-grated trench. • At least 6" curb height for outside storage area or sloped away from building. • Capacity to hold release and water from fire protection system to prevent release from reaching surface water, ground water, and subsurface soils. • Storage cabinet may be required for containers.	• **Michigan Fire Prevention Code, Public Act 207 of 1941** • FL/CL Rules R 29.5601 – R 29.5917 and adopted **NFPA Standards** (See Chapter 4.3.2)	LARA, Storage Tank Program 517-241-8847 **Michigan.gov/ StorageTanks**

Hazardous Substance-CERCLA - Petroleum products (oil, gasoline, diesel fuel)
A substance listed in Section 112 of part A of title I of the Clean Air Act, Chapter 360, 84 Stat. 1685, 42 U.S.C. 7412

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
Underground Storage Regulated underground storage tank located in an exclusion zone or secondary containment zone.	Requires double-walled tanks or integral secondary containment tanks.	• **Part 211** (Underground Storage Tanks) of Public Act 451 of 1994 • **UST Rules R 29.2101–29.2172** • **FL/CL Rules** R 29.5601 - R 29.5917 • **40 CFR 302.4** • **Clean Air Act Section 112** (see Chapter 4.1)	LARA, Storage Tank Program 517-241-8847 **Michigan.gov/ StorageTanks**

Highly Hazardous Chemicals

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
At or above the threshold quantity specified in the MIOSHA General Industry Safety and Health Standards – Part 91 and 591	Varies with physical and chemical characteristics of the hazardous chemical. Standard requires equipment in a covered process to comply with generally accepted good engineering practices (secondary containment is a good engineering practice).	MIOSHA General Industry Safety and Health Standards – **Part 91 and 591, Process Safety Management of Highly Hazardous Chemicals**	LEO-MIOSHA **Consultation, Education & Training Division** 517-322-1809

Hazardous Waste-EGLE and U.S. EPA

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Regulatory Agency
• Small quantity generators (SQGs) accumulating more than 2,200 lbs. of liquid hazardous waste. • Large Quantity Generators (LQGs) accumulating any amount of hazardous waste. • SQGs or LQGs accumulating any waste with codes F020, F021, F022, F023, F026, F027. • Anyone accumulating more than 2.2 lbs. of acute or severely toxic waste. • Generators with regulated waste tanks. Very small quantity generators are not required to have secondary containment unless they accumulate greater than 2,200 lbs., but they must manage the waste so there is no release into the environment, sewers, or drains. • There are specific requirements for treatment, storage, and disposal facilities and transporters. • If in regulated storage tanks and has flashpoint below 200 degrees Fahrenheit, also meet Flammable and Combustible Liquids-Act 207 requirements	Capacity must be able to contain 100% of the largest container or 10% of the volume of all the containers in the system, whichever is larger, of liquid hazardous waste or those identified "F" code wastes plus any precipitation that gets in the accumulation area. NOTE: Spill pallets do not provide adequate squirt protection and are not acceptable for liquid hazardous waste containment. NOTE: Even if secondary containment is not required, it is recommended for all hazardous waste accumulation areas.	• **Part 111** (Hazardous Waste) of Public Act 451 of 1994. • R 299.9101 - 299.11107 • Federal Resource and Conservation Act (RCRA) • 40 CFR 260-279 NOTE: If you handle hazardous waste, you will also need to meet emergency notification and planning requirements. (See Chapters 2.3 and 5.2)	EGLE, **District Office Michigan.gov/ EGLEwaste** U.S. EPA **epa.gov**

Universal waste

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Agency with Regulatory Responsibility
• Contain if waste or package is leaking, spilled, or damaged	Place damaged package into another container or replace container	• **Hazardous waste rule R 299.9228** • **40 CFR 273**	EGLE, **District Office Michigan.gov/ EGLEwaste**

Oil – U.S. EPA if any discharge can reach navigable water

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Agency with Regulatory Responsibility
• If total storage capacity is more than 1,320 gallons (count containers 55 gal and larger). • If underground storage capacity is more than 42,000 gallons. • See 40 CFR 112 for exemptions.	• 100% of the largest single container plus sufficient freeboard to allow precipitation. • Constructed to prevent release from escaping containment system before cleanup occurs.	• **The Clean Water Act (CWA)** • **40 CFR 112** NOTE: If your storage capacity is regulated under these federal regulations, a Spill Prevention, Control, and Countermeasures (SPCC) plan is required (see Chapter 6.2.3).	U.S. EPA Oil Program 312-353-8200 **epa.gov/oilspill**

Salt and Polluting Materials listed in R324.2009

Regulated Storage Volumes	Required Containment Volumes	Regulations References	Agency with Regulatory Responsibility
Salt • Solid form is more than 5 tons. • Liquid form is more than 1,000 gallons. Listed polluting materials • Outdoor use and storage areas 440 pounds. • Indoor use and storage areas 2,200 pounds. • Includes mixtures of above materials if their concentration is 1% or more by weight based on the MSDS information. Sites where EGLE determines necessary to protect surface water and groundwater.	Capacity for LIQUID polluting materials stored OUTDOORS must be able to contain not less than 10% of total volume of the tanks or containers, or 100% of the largest container within the containment structure, whichever volume is higher. Storage of solid materials must be contained to prevent releases through drains, sewers, etc. into wastewater treatment plants, surface water or groundwater. NOTE: If subject to SPCC, meet federal oil containment requirements.	• **Part 31 (Water Resource Protection) of Public Act 451 of 1994** • **R 324.2001-R324.2009** NOTE: If you have chemicals or salt stored, a Pollution Incident Prevention Plan (PIPP) is required (see Chapter 6.2.2).	EGLE, **District Office** **Michigan.gov/EGLEwater**

Michigan Guide to
Environmental Regulations

Chapter 5

SARA TITLE III

CHAPTER 5: SARA Title III – Emergency Planning and Community Right-to-Know Act

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was enacted by Congress in 1980 to clean up the nation's hazardous waste sites and to provide for emergency response to releases of hazardous substances into the environment. CERCLA is also called Superfund, and the hazardous waste sites are known as Superfund sites. In response to community concern regarding hazardous materials and chemical release tragedies, a reauthorization and expansion of Superfund was signed into law in 1986. It is known as the Superfund Amendments and Reauthorization Act (SARA). Title III of SARA ("SARA Title III") is the Emergency Planning and Community Right-To-Know Act (EPCRA).

SARA Title III establishes requirements for federal, state, and local governments, Indian tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment.

AGENCIES AND THEIR LAWS AND RULES

Federal Agencies: The U.S. Environmental Protection Agency (U.S. EPA) enforces SARA Title III in Michigan. The regulations implementing SARA Title III are codified in Title 40 of the Code of Federal Regulations, Parts 350 through 372.

State Agencies: SARA Title III is a federal act that is implemented in Michigan under an executive order from the Governor. Executive Order 2007-18 created the Michigan Citizen-Community Emergency Response Coordinating Council as an advisory body within the Michigan Department of State Police (MSP). This council is responsible for developing and implementing citizen volunteer emergency response plans and hazard mitigation plans, and it acts as the *State Emergency Response Commission* (SERC) as required by SARA Title III. The MSP Emergency Management and Homeland Security Division (EMHSD) oversees the emergency planning requirements in SARA Title III. The **Michigan SARA Title III Program** in the Department of Environment, Great Lakes, and Energy (EGLE) handles the reporting requirements in SARA Title III and **receives all reports on behalf of the SERC**.

Local Agencies: SARA Title III requires that the SERC establish Local Emergency Planning Committees (LEPCs). There are 87 LEPCs in Michigan – one for each of the 83 counties, as well as LEPCs for the cities of Ann Arbor, Detroit, Romulus, and Wayne. Data collected pursuant to SARA Title III are used by LEPCs and local fire departments.

5.1 WHAT DOES SARA TITLE III COVER?

SARA Title III has four major components:

1. Emergency planning (Sections 302 & 303)
2. Emergency release notification (Section 304)
3. Hazardous chemical inventory (Sections 311 & 312)
4. Toxic chemical release inventory (Section 313)

Information gleaned from these four requirements helps states and communities develop a broad perspective of chemical hazards for the entire community as well as for individual facilities. Regulations implementing SARA Title III are codified in Title 40 of the Code of Federal Regulations (CFR), Parts 350 to 372. The chemicals covered by each of the sections are different, as are the quantities that trigger reporting.

The reporting requirements for each of these sections are outlined in Table 5.1. The chemicals covered by each of the sections are different, as are the quantities that trigger reporting. Summaries of these reporting requirements are covered in the discussion below and in the flow charts at the end of this chapter. For a detailed discussion of the SARA Title III requirements, see the "*Michigan Facilities' Guide to SARA Title III, Emergency Planning, and Release Reporting*" at **Michigan.gov/sara** (select the "SARA Title III" link).

TABLE 5.1 SARA TITLE III REPORTING REQUIREMENTS

SARA TITLE III SECTION	REPORT REQUIREMENT	REPORT FORM	REPORT DUE	AGENCIES TO RECEIVE REPORT
302	Emergency Planning Notification	Emergency Planning Notification online in Tier II Manager™.	Within 60 days after threshold reached	• Michigan SARA Title III Program • LEPC
304	Emergency Chemical Release – Initial Notification		Within 15 minutes after discovery	• Pollution Emergency Alerting System (PEAS) at 800-292-4706 or MDARD Hotline at 800-405-0101 • All LEPCs potentially affected by the release • U.S. Coast Guard National Response Center at 800-424-8802
304	Emergency Chemical Release – written follow-up	Spill or Release Report	Within 30 days after the release	• Michigan SARA Title III Program • All LEPCs affected by the release
311	Initial Hazardous Chemical Inventory	Online in Tier II Manager™	Within 3 months after threshold reached	• Michigan SARA Title III Program • LEPC • Local fire department
312	Tier II – Emergency & Hazardous Chemical Inventory	Tier II online in Tier II Manager™	Annually, by March 1	• Michigan SARA Title III Program • LEPC • Local fire department
313	Toxic Chemical Release Inventory	Form R online in *TRI-MEweb*	Annually, by July 1	• Michigan SARA Title III Program • U.S. EPA TRI Data Processing Center

There are **no fees** associated with reporting under SARA Title III in Michigan.

5.2 EMERGENCY PLANNING (SECTIONS 302 & 303)

Off-site emergency response plans contain information that community officials can use at the time of a chemical accident. These plans are developed under Section 303 by the Local Emergency Planning Committee (LEPC) for the protection of the community. The plans address the off-site response to emergency releases of Extremely Hazardous Substances (EHSs) from certain facilities in the LEPC planning district. The plans must:

- Identify facilities subject to Section 302.
- Identify routes likely to be used for the transportation of EHS'.
- Identify facilities contributing to the risk due to their proximity to facilities subject to Section 302 such as natural gas facilities.
- Identify facilities subjected to additional risk due to their proximity to facilities subject to Section 302, such as hospitals.
- Describe emergency response procedures, on and off site.
- Designate a community coordinator and facility coordinator(s) to implement the plan.
- Outline emergency notification procedures.
- Describe how to determine the occurrence of a release, and the area or population likely to be affected by such release.
- Describe local emergency equipment and facilities and identify the persons responsible for such.
- Outline evacuation plans.
- Include training programs, including schedules for training local emergency response and medical personnel.
- Provide methods and schedules for exercising the emergency plan.

5.3 EMERGENCY RELEASE NOTIFICATION (SECTION 304)

Facilities must immediately notify the LEPC and SERC if there is a release into the environment of a hazardous substance that is equal to or exceeds the minimum reportable quantity set in the regulations. This requirement covers the 355 EHSs as well as over 770 listed hazardous substances subject to the emergency release notification requirements under CERCLA Section 103(a) (40 CFR 302.4). Some chemicals are common to both lists. Emergency release notification requirements involving transportation incidents can be met by dialing 911.

A written follow-up notice must be submitted to the SERC and the LEPC as soon as practicable after the release. The follow-up notice must update information included in the initial notice and provide information on the actual response actions taken and advice regarding medical attention necessary for citizens exposed to the released chemical.

Section 304 is only one of 27 state and federal regulations that have release reporting requirements that apply in Michigan. Visit **Michigan.gov/ChemRelease** for additional release reporting requirements and a release reporting form that can be used to report releases under Section 304.

The emergency release notification should include:

- The chemical name.
- An indication of whether the substance is extremely hazardous.
- An estimate of the quantity released into the environment.
- The time and duration of the release.
- Whether the release occurred into air, water, and/or land.
- Any known or anticipated acute or chronic health risks associated with the emergency and, where necessary, advice regarding medical attention for exposed individuals.
- Proper precautions, such as evacuation or sheltering in place.
- Name and phone number of contact person.

5.4 HAZARDOUS CHEMICAL INVENTORY (SECTIONS 311 & 312)

Under the Occupational Safety and Health Administration (OSHA) regulations, employers must maintain a Safety Data Sheet (SDS) for any hazardous chemicals stored or used in the workplace. Over 650,000 products have SDSs.

Note: *The Hazard Communication Standard requires chemical manufacturers, distributors, or importers to provide SDSs (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, new SDSs must be in a uniform format.*

Section 311 of SARA Title III requires facilities that have SDSs for chemicals held above certain quantities to submit either copies of their SDSs or a list of these hazardous chemicals to the SERC, LEPC, and local fire department within three months after they exceed the threshold. If the facility owner or operator chooses to submit a list of hazardous chemicals, the list must include the chemical or common name of each substance and identify the applicable hazard categories, which are:

Physical Hazards

- Combustible dust
- Corrosive to metal
- Explosive
- Flammable (gases, aerosols, liquids, or solids)
- Gas under pressure
- Hazard not Otherwise Classified (HNOC)
- In contact with water emits flammable gas
- Organic peroxide
- Oxidizer (liquid, solid or gas)
- Pyrophoric (liquid or solid)
- Pyrophoric gas
- Self-heating
- Self-reactive

Health Hazards

- Acute toxicity (any route of exposure)
- Aspiration hazard
- Carcinogenicity
- Germ cell mutagenicity
- Hazard Not Otherwise Classified (HNOC)
- Reproductive toxicity
- Respiratory or skin sensitization
- Serious eye damage or eye irritation
- Simple asphyxiant
- Skin corrosion or irritation
- Specific target organ toxicity (single or repeated exposure)

Facilities covered by Section 311 must, under Section 312, submit annually an emergency and hazardous chemical inventory form to the LEPC, the SERC, and the local fire department. Facilities provide either a Tier I or Tier II form. Tier I forms include aggregate information for each applicable hazard category. The Tier II report contains basically the same information as the Tier I, but it must name the specific chemicals. **Most states, including Michigan, require Tier II information**. Tier II forms provide the following information for each substance:

- The chemical name or common name as indicated on the SDS.
- An estimate of the maximum amount of the chemical present at any time during the preceding calendar year and the average daily amount.
- A brief description of the manner of storage of the chemical.
- The location of the chemical at the facility.
- Whether the owner elects to withhold location information from disclosure to the public.

Because many states have added requirements or incorporated the Federal contents in their own forms, Tier I or Tier II forms should be obtained from the state SERC. Section 312 information must be submitted on or before March 1 each year.

In 1999, the U.S. EPA excluded gasoline held at most retail gas stations from Section 311/312 reporting. The U.S. EPA estimates that about 550,000 facilities, including approximately 6,000 facilities in Michigan, are now covered by SARA Title III Section 311/312 requirements.

Information submitted under Sections 311 and 312 is publicly available from LEPCs and SERCs.

5.5 ONLINE REPORTING (SECTIONS 302, 311, 312)

The online reporting program for sections 302, 311, and 312 is called Tier II Manager™ and can be accessed by going to **Michigan.gov/SARA** and selecting the "SARA Title III Hazardous Chemical Inventory" link. See Chapter 3 in the *"Michigan Facilities' Guide to SARA Title III, Emergency Planning, and Release Reporting"* for instructions.

Reports required by sections 302, 311, and 312 must be submitted online to the Michigan SARA Title III Program. The fire departments and LEPCs in the counties of Ann Arbor, Bay, Calhoun, Crawford, Genesee, Grand Traverse, Ingham, Kent, Monroe, Montcalm, Oakland, Otsego, Ottawa, Saginaw, Washtenaw, Wayne, Wexford can receive your reports online. If your facility is not in one of these seven participating counties, then a paper copy of the report can be printed from the online program to submit to your fire department and LEPC. Reports can also be emailed from the program to LEPCs and fire departments that wish to receive them in this way.

The online reporting program was updated in 2014 and the reports required under sections 302 and 311 are now part of the Tier II report required under section 312. The Tier II report should be updated every time there are significant changes, such as adding or removing chemicals, so that a current inventory is always available to the LEPC and fire department.

5.6 TOXIC CHEMICAL RELEASE INVENTORY (SECTION 313)

Section 313, commonly referred to as the Toxic Chemical Release Inventory or TRI, requires certain facilities to annually report toxic chemical releases and waste management activities to the U.S. EPA and the state by July 1. Facilities also must report information on source reduction, recycling, and treatment under the Pollution Prevention Act of 1990.

The TRI reporting requirement applies to facilities that have 10 or more full-time employees (or the equivalent), that manufacture (including import), process, or otherwise use a listed toxic chemical above threshold quantities, and that are in certain industry sectors. These sectors include manufacturing, metal mining, coal mining, electric utilities, hazardous waste treatment and disposal facilities, chemical distributors, petroleum bulk plants, solvent recovery services, and federal facilities. A complete list of covered facilities is available online at **www.epa.gov/tri**.

One purpose of this reporting requirement is to inform the public and communities surrounding covered facilities about toxic chemicals at individual facilities, their uses, and releases into the environment. The data can also be used to:

- Identify sources of toxic chemical releases.
- Help analyze potential toxic chemical hazards to human health and the environment.
- Encourage pollution prevention at facilities.

The following information is required on the form:

- The name, location, and type of business.
- Whether the chemical is manufactured (including imported), processed or otherwise used and the general categories of use of the chemical.
- An estimate of the maximum amount of the toxic chemical present at the facility at any one time during the preceding year.
- Quantity of the chemical entering the air, land, and water during the preceding year.
- Off-site locations to which the facility transfers toxic chemicals in waste for recycling, energy recovery, treatment or disposal, and the amount transferred.
- Waste treatment methods and efficiency of methods for each waste stream.

The U.S. EPA maintains the TRI information in a national database that is available to the public on the Internet. Michigan maintains historic state-specific TRI data online.

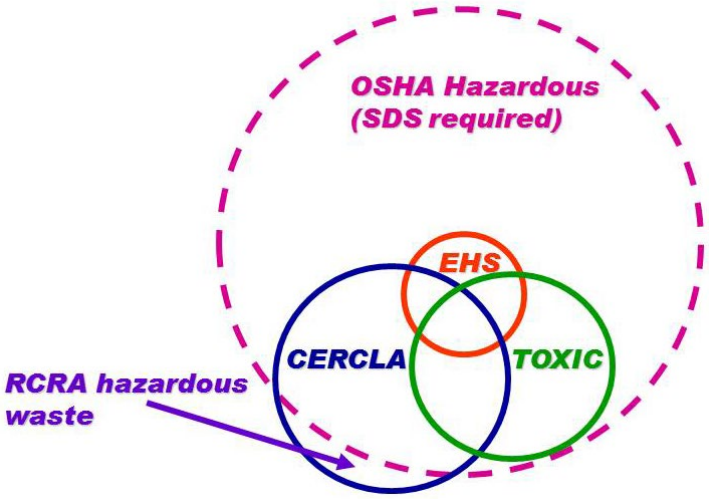
5.6.1 SUMMARY OF CHEMICALS COVERED BY SARA TITLE III REQUIREMENTS

OSHA: Tier II

EHS: Emergency Plan and Release Report

CERCLA: Release Report

Toxic: TRI



On this diagram, the large circle with the dashed line represents the universe of over 650,000 **OSHA Hazardous Chemicals**. These chemicals are potentially subject to Emergency and Hazardous Chemical Inventory reporting under Sections 311 and 312 (Tier II report) of SARA Title III. The line is dashed because there is **no list** of these chemicals.

The **Extremely Hazardous Substances** (EHS on the diagram) are listed, so the circle has a solid line. Each of the 355 EHS's has an associated threshold planning quantity for emergency planning pursuant to SARA Title III Sections 302 and 303, and a reportable quantity for release reporting under SARA Title III Section 304. The EHS's are also subject to Emergency and Hazardous Chemical Inventory reporting unless an exemption applies (see Chapter 3, *What Chemicals Are Excluded*).

The **EHS's** are listed and have associated reportable quantities for release reporting under CERCLA Section 103 and SARA Title III Section 304. There are over 770 CERCLA hazardous substances that include hazardous waste subject to RCRA regulations. Part of the CERCLA group falls outside of the OSHA group. This is because OSHA does not require that an SDS be maintained for hazardous waste. Therefore, RCRA hazardous waste is not reportable on the Tier II report, but a release that is above the listed reportable quantity must be reported.

The U.S. EPA published a list of approximately 650 **toxic chemicals** and chemical categories (Toxic on the diagram). Pursuant to SARA Title III Section 313, "subject facilities" must submit a TRI report for each toxic chemical that exceeds an activity threshold (see Chapter 4, *SARA Title III Section 313*).

The listed substances (EHS, CERCLA Hazardous, and toxic chemicals) are included in the *List of Lists* at epa.gov/epcra/consolidated-list-lists.

5.7 OTHER SARA TITLE III REQUIREMENTS

5.7.1 TRADE SECRETS

SARA Title III Section 322 addresses trade secrets as they apply to SARA Title III Sections 303, 311, 312, and 313 reporting; a facility cannot claim trade secrets under Section 304 of this statute. Only the chemical identity may be claimed as a trade secret, though a generic class for the chemical must be provided. The criteria a facility must meet to claim a chemical identity as a trade secret is in 40 CFR Part 350. In practice, less than one percent of facilities have filed such claims.

Even if chemical identity information can be legally withheld from the public, SARA Title III Section 323 allows the information to be disclosed to health professionals who need the information for diagnostic and treatment purposes or local health officials who need the information for prevention and treatment activities. In non-emergency cases, the health professional must sign a confidentiality agreement with the facility and provide a written statement of need. In medical emergencies, the health professional, if requested by the facility, provides these documents as soon as circumstances permit.

Any person may challenge trade secret claims by petitioning the U.S. EPA. The Agency must review the claim and rule on its validity.

5.7.2 PENALTIES

SARA Title III Section 325 allows criminal penalties as follows:

- Criminal penalties up to $50,000 or five years in prison apply to any person who knowingly and willfully fails to provide emergency release notification.
- Penalties of not more than $20,000 and/or up to one year in prison apply to any person who knowingly and willfully discloses any information entitled to protection as a trade secret.
- SARA Title III does not provide for criminal sanctions for violations of Section 313; however, 18 U.S.C. §1001 makes it a criminal offense to falsify information submitted to the U.S. Government.

SARA Title III Section 325 and the Debt Collection Improvement Act of 1996 and its implementing regulations at 40 CFR 19 allow civil and administrative penalties as follows:

- Any person that fails to comply with emergency release notification requirements in CERCLA Section 103 or SARA Title III Section 304 shall be liable for civil penalties of up to $53,907 per day per violation. The penalty for subsequent or repeat violations is $161,721 per violation per day.
- Any person that violates hazardous chemical inventory reporting requirements in Section 311 of SARA Title III shall be liable for civil and administrative penalties of not more than $21,563 per day per violation.
- Any person that violates hazardous chemical inventory reporting requirements in Section 312 of SARA Title III shall be liable for civil and administrative penalties of not more than $53,907 per day per violation.
- Any person that violates toxic chemical release inventory reporting requirements in Section 313 of SARA Title III shall be liable for civil penalties not to exceed $53,907 for each day that each chemical is not reported or incorrectly reported.

Note: The SARA Title III Civil Penalties prescribes a formula for adjusting statutory civil penalties to reflect inflation, maintain the deterrent effect of statutory civil penalties, and promote compliance with the law. For additional information see the **Civil Monetary Penalty Inflation Adjustment Rule** at **federalregister.gov/articles/ 2016/07/01/2016-15411/civil-monetary-penalty-inflation-adjustment-rule**.

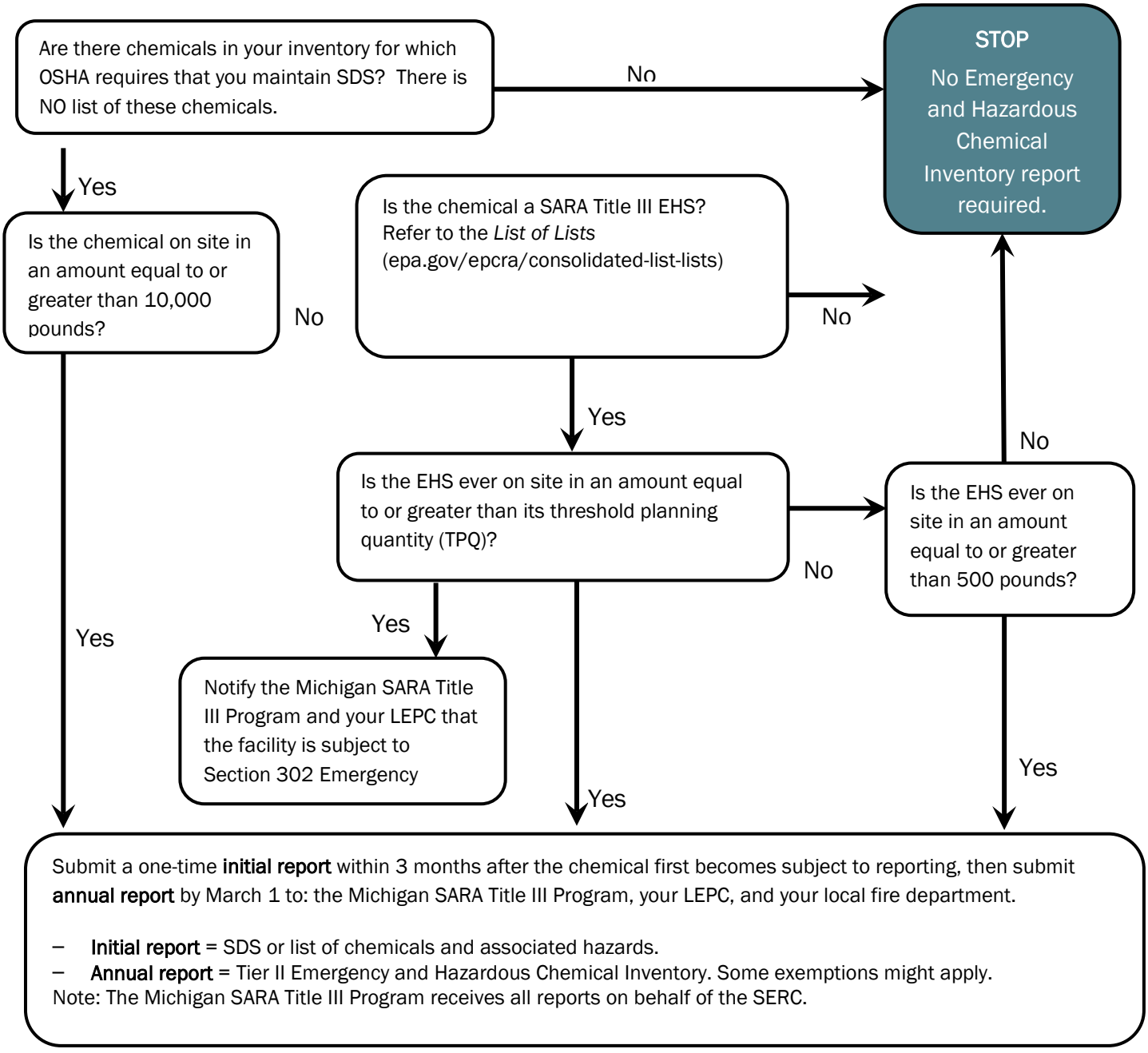
5.7.3 CITIZENS' SUITS

SARA Title III Section 326 allows citizens to initiate civil actions against the U.S. EPA, SERCs, and the owner or operator of a facility for failure to meet the SARA Title III requirements. A SERC, LEPC, and state or local government may institute actions against facility owner/operators for failure to comply with SARA Title III requirements. In addition, states may sue the U.S. EPA for failure to provide trade secret information.

Emergency and Hazardous Chemical Inventory Reporting

SARA Title III – Sections 311 and 312

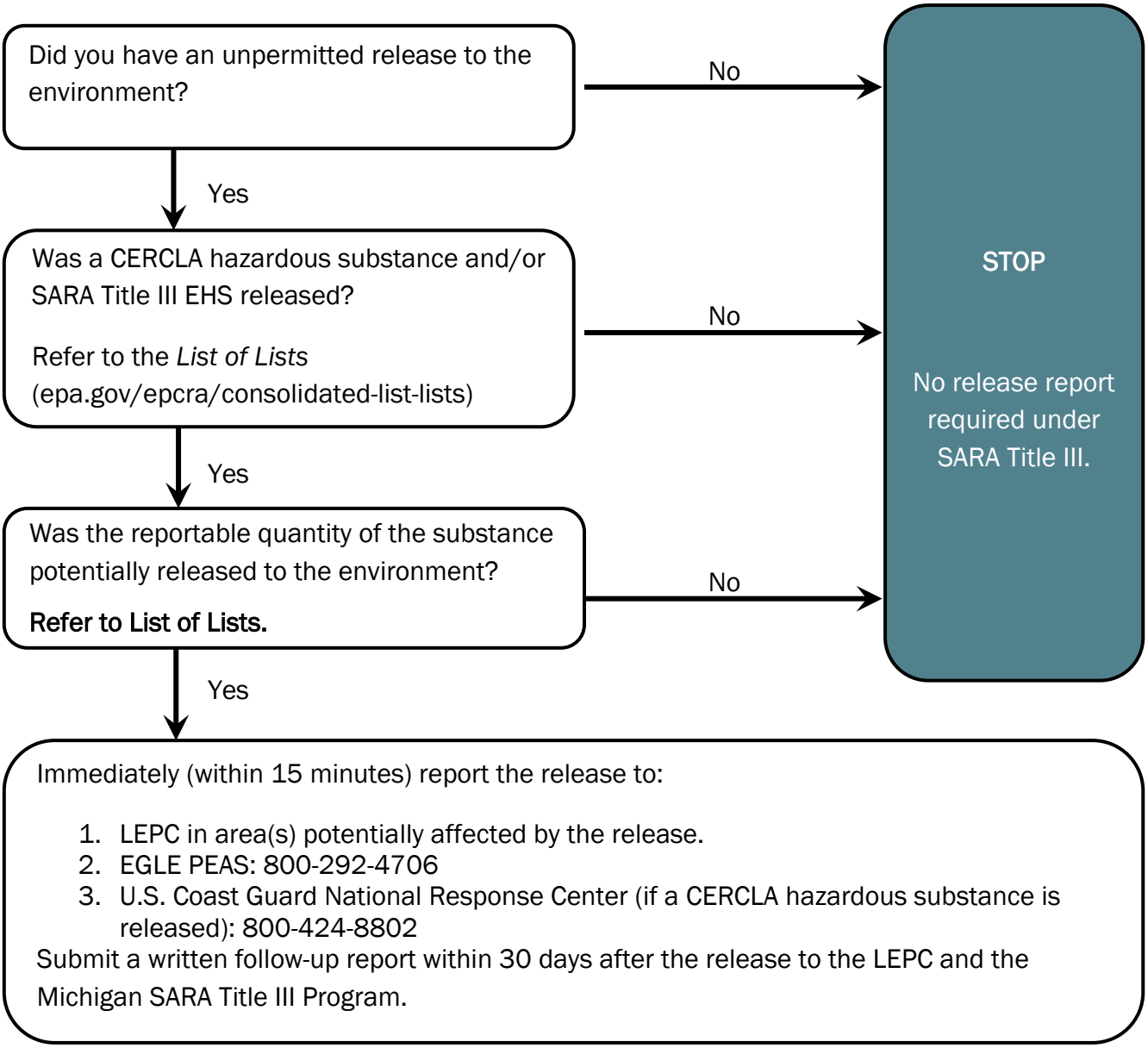
SARA Title III is the EPCRA



Release Reporting

SARA Title III – Section 304

SARA Title III is the EPCRA



Toxic Chemical Release Inventory Reporting

SARA Title III – Section 313

SARA Title III is the EPCRA

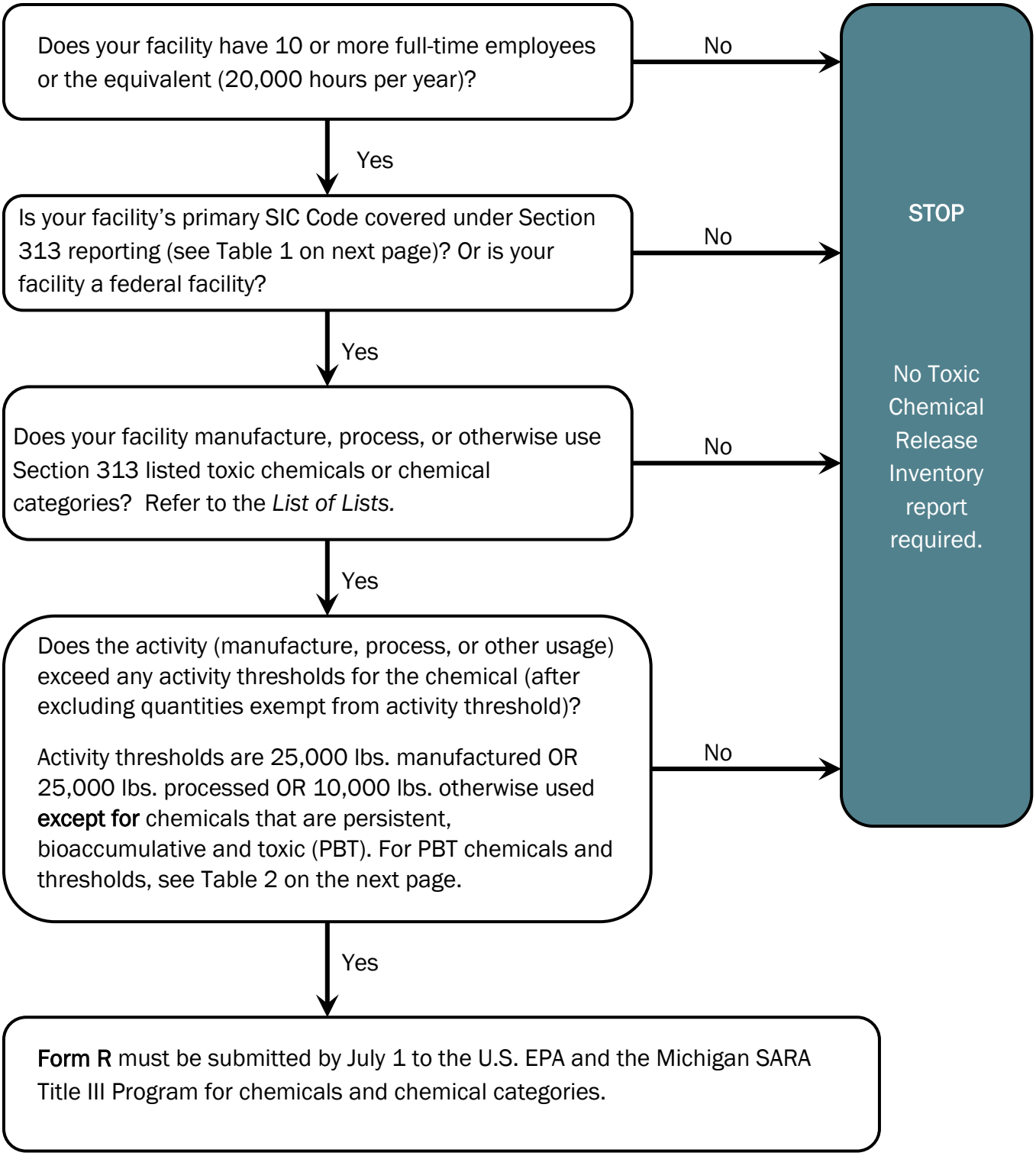


Table 5.2. TRI Covered Industries by Industry Classification

INDUSTRY	SIC CODES	NAICS
Manufacturing	20-39	311-339
Metal Mining	10 (except 1011, 1081, and 1094)	21222 21223 21229
Coal Mining	12 (except 1241)	21211
Electrical utilities	4911, 4931, and 4939 (limited to facilities that combust coal and/or oil for purpose of generating electricity for distribution in commerce)	22111 22112
Treatment, storage and disposal facilities	4953 (limited to RCRA Subtitle C permitted or interim status facilities)	56221
Chemical distributors	5169	42469
Petroleum bulk terminals	5171	42471
Solvent recovery services	7389 (limited to facilities primarily engaged in services on a contract or fee basis)	32599
Federal facilities	Must report by Executive Order 13148.	

Note: Beginning with Report Year 2006, facilities report the six-digit North American Industry Classification System (**NAICS**) code that corresponds to the SIC code in the regulation.

Table 5.3. EPCRA Section 313 Listed PBT Chemicals and Activity Thresholds

Chemical	Threshold (in pounds unless otherwise noted)
ALDRIN	100
BENZO(G,H,I)PERYLENE ♦	10
CHLORDANE	10
DIOXIN AND DIOXIN-LIKE COMPOUNDS ♦	0.1 grams
HEPTACHLOR	10
HEXACHLOROBENZENE	10
ISODRIN	10
LEAD* (not contained in stainless steel, bronze, or brass alloy)	100
LEAD COMPOUNDS *	100
MERCURY	10
MERCURY COMPOUNDS	10
METHOXYCHLOR	100
OCTACHLOROSTYRENE ♦	10
PENDIMETHALIN	100
PENTACHLOROBENZENE ♦	10
POLYCHLORINATED BIPHENYLS	10
POLYCYCLIC AROMATIC COMPOUNDS +	100
TETRABROMOBISPHENOL A (TBBPA) ♦	100
TOXAPHENE	10
TRIFLURALIN	100

Note: PBT chemical reporting effective for 2000 report year, except lead and lead compounds, which were effective for 2001.

- ♦ Chemicals subject to EPCRA Section 313 reporting beginning in 2000.
- \+ 21 chemicals included in PAC category.
- * Thresholds effective for 2001 reporting year.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common air regulations topics

SARA Title III Reporting
Michigan SARA Title III Program: 517-284-7272 | EGLE-SARA@Michigan.gov
Michigan.gov/SARA
Michigan.gov/ChemRelease
Michigan.gov/EGLEEmergencyPlan

- Michigan Facilities' Guide to SARA Title III, Emergency Planning and Release Reporting

LEPCs and Community Emergency Plans
Michigan State Police, Emergency Management & Homeland Security Division
517-582-2846 | **RoosB@michigan.gov** | **Michigan.gov/emhsd**
LEPCs: Organizing for Success

SARA Title III
U.S. EPA's Superfund, TRI, EPCRA, RMP, and Oil Information Center: 800-424-9346
epa.gov/epcra/forms/contact-us-about-emergency-planning-and-community-right-know-act-epcra

SARA Title III Toxic Chemical Release Inventory
U.S. EPA, Toxics Release Inventory (TRI) Program
epa.gov/tri

Michigan Guide to
Environmental Regulations

Chapter 6

ENVIRONMENTAL EMERGENCIES

CHAPTER 6: ENVIROMENTAL EMERGENCIES

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

There are many regulations pertaining to release planning, reporting, employee training, and response. The intent is to protect public health and welfare and the environment from spills or releases of regulated materials. Each regulation targets a specific group of materials that exhibit certain characteristics. Appendix B contains definitions of the various regulated groups of materials referenced in this chapter. These defined terms appear throughout this chapter in bold lettering.

In some instances, multiple agencies use the same term to describe a different regulated group. Such terms will be followed by a dash and the acronym of the defining agency or regulation. For example, the U.S. Department of Transportation (U.S. DOT) and the Michigan Fire Prevention Code, Public Act 207 of 1941, as amended (Act 207) have differing definitions for the term "hazardous material." Therefore, the U.S. DOT and Act 207 definitions of hazardous material will appear as "**hazardous material-U.S. DOT**" and "**hazardous material-Act 207**" respectively.

AGENCIES AND THEIR LAWS AND RULES

Due to the numerous environmental federal and state regulations that apply to this chapter, please refer to the "**Release Notification Requirements in Michigan**" document and the Summary of Common Environmental Release Prevention and Response Plans in Appendix 6-A. This table is a tool to identify the laws and regulations applicable to this chapter and the agencies that implement them.

6.1 RELEASE PREVENTION TIPS

Releases can usually be prevented by using common sense and care when storing, transferring, and transporting regulated materials. Tips include:

- Train all personnel in spill prevention techniques. Some regulations indicate who, at a minimum, must be trained for handling regulated material and waste.
- Practice safe loading and unloading procedures.
- Have inventory control procedures track material from receipt to disposal.
- Post warning and instructional signs in appropriate places.
- Adequately label all containers.

- Use pumps or funnels to transfer liquids.
- Keep lids and covers on containers to control spills and evaporation.
- Use seal-less pumps.
- Install spill basins or dikes in storage areas.
- Install splash guards and drip boards on tanks and faucets.
- Use drip buckets under liquid spigots.
- Prohibit outside draining or replacement of fluids over the ground or on pavement not designed for containment.

You might also reduce the damage caused by spills if you notice them quickly. Routinely check your material handling equipment for deterioration, leaks and spills. This will help to ensure timely repair to prevent a material release and quick response to mitigate damages and clean-up liabilities. Some of the regulations specify how often you must monitor your business. Watch for strange odors and discoloration or corrosion of walls, work surfaces, ceilings, and pipes. Also note if anyone has irritation of the eyes, nose, or throat. All of these can indicate the presence of leaks or poorly maintained equipment.

6.2 RELEASE PREVENTION AND RESPONSE PLANNING

While environmental regulations do not require all businesses to develop release prevention and response plans, having one is recommended to minimize your liability and protect human health and the environment. Depending on your activities, you may be subject to multiple planning regulations and you're encouraged to develop one plan, an Integrated Contingency Plan (ICP) as described in Chapter 6.2.8, that includes each individual plan's specific requirements as identified in the different federal or state laws.

Even if you are not required to have a written plan under the regulations described in this section, you are responsible for any release on or from your property. You may be required to report the release to different agencies (see Chapter 6.3) and will be required to clean up the release (see Chapter 6.4). Release notifications and cleanup procedures would be included in plans developed voluntarily or as required by regulation. In addition, staff must be properly trained for their role in responding to releases. Information about secondary containment and other material storage requirements discussed in Chapters 2 and 4 should also be included in emergency plans.

In addition to plans discussed in this chapter, facilities may have other planning related requirements in:

- ✓ Permits issued to the facility.
- ✓ Community Emergency Response Plan required by Section 302 of SARA Title III (Chapter 5.3).

Firefighter Right-to-Know requires that you provide to your local fire department information about the hazardous materials kept on site. It is recommended that you invite your local fire department to tour your facility, so they can be adequately trained and have the necessary equipment available to respond to an emergency at your facility. Some fire departments encourage the practice of having a lock box or emergency tube available somewhere outside of the facility building(s) that protects the contents of facility emergency contacts, basic facility information, facility maps, and either Safety Data Sheets (SDSs) or a description of potentially harmful materials on site. Talk to your fire department about this practice. They can provide recommendations regarding what they want to have immediately available if called to the site and where they would like to have the information located. However, due to terrorism concerns, be cautious about the placement of information in case of potential sabotage.

The U.S. DOT regulations require each person in physical possession of the **hazardous material-US DOT** at the time of a reportable incident as defined in 49 CFR 171.15 to provide notice by telephone to the National Response Center (NRC) at 800-424-8802. The notice must be provided as soon as practical but no later than 12 hours after the reportable incident occurs, and a more detailed incident report must follow on DOT Form F 5800.1 within 30 days of discovery of the incident. For more details on incident reporting and training related to **hazardous materials-U.S. DOT**, see Chapter 4 and EGLE's "Release Notification Requirements in Michigan" document.

Consider what needs to be done in case of an emergency and prepare a response plan to protect your company, employees, and the environment. Consider the following in case emergency responders are contacted for assistance to the facility:

- The fire department's response is based on the information you give them. Provide as much detail as possible when calling for help. Have your emergency information readily available and let them know what hazardous materials are involved, how much if known, the location of the spill, if people are inside the facility or taking some response actions, wind direction, etc.
- Have a key contact person (who is knowledgeable about the whole facility and the incident) meet the responders.
- Make sure everyone is accounted for, including both employees and visitors at the facility.
- Keep everyone upwind of the situation and, if necessary, have people move to a different location.
- Have a knowledgeable public relations person from the facility available to address media if they arrive at the scene.
- Follow the emergency responders' directions.

The following are common environmental release prevention and response plans that a manufacturer may be required to develop:

- Hazardous Waste Contingency Plan: Part 111 (Hazardous Waste Management) of Act 451 if you have regulated amounts of **hazardous waste** (see Chapter 6.2.1).
- Pollution Incident Prevention Plan (PIPP): Part 31 (Water Resources Protection) of Act 451 if you have regulated amounts of **oil, salt** or **polluting materials** that are listed in R 324.2009, Table 1 in the Part 5 Rules. (see Chapter 6.2.2).
- Spill Prevention, Control, and Countermeasures (SPCC) Plan: federal Clean Water Act if you have regulated storage capacity of **oils** and a release could potentially reach navigable waters, or you have PCB articles regulated under the Toxic Substances Control Act (TSCA) that requires a SPCC Plan. (see Chapter 6.2.3).
- Storm Water Pollution Prevention Plan (SWPPP): Part 31 (Water Resources Protection) of Act 451 if you are subject to a storm water discharge permit. (see Chapter 6.2.4).
- Risk Management Program (RMP): Section 112(r) of the 1990 Clean Air Act Amendments if you have regulated amounts of **CAA Section 112(r) Substances**. (see Chapter 6.2.5).
- Emergency Action Plan: National Fire Protection Association (NFPA) **pamphlet 30** if you have flammable and combustible liquids stored aboveground in containers and drums 60 gallons and larger and tanks 660 gallons and larger. (see Chapter 6.2.6).
- HAZMAT Security Plan if you are shipping **hazardous materials-U.S.DOT**, including shipments of hazardous waste requiring placards in excess of 1000 pounds (Chapter 6.2.7).
- Integrated Contingency Plan (ICP) if you choose to prepare one plan that covers multiple regulatory requirements instead of developing an individual plan under each regulation. (see Chapter 6.2.8).
- Federal Site Security Plan if you have met the threshold amounts for the Chemicals of Interest (see Chapter 6.2.9).

Are you subject to the above planning requirements? First it is necessary to determine if there are regulated materials on site, and then determine if the facility meets other conditions that require planning. Ask yourself the following questions:

1. Are there regulated materials on site? Use your safety data sheets [SDS], hazardous waste manifests, waste survey information gathered as described in Chapter 2.1, and information about polluting materials and PCBs in Chapter 4 to answer the following questions.
    - Is the material on any list of regulated substances?
        - Is the material a product or raw material designated as a **polluting material**?
        - Is the material a **hazardous waste**?

- Is any of it **salt** (sodium chloride, potassium chloride, calcium chloride, and magnesium chloride)?
- Is any material a flammable or combustible liquid (flashpoint below 200 degrees Fahrenheit)?
- Is the material an **oil** (this includes vegetable oils, animal fats, synthetic oils, and petroleum products, and derivatives like mineral spirits, gasoline, diesel fuel, etc.)? Do you have 1,320 or more gallons total storage capacity, or do you have a single container with a capacity of more than 660 gallons?
- Are there regulated PCB articles on site in temporary storage or stationary bulk storage tanks (see Chapter 4.5)?

2. If there are regulated materials or other regulated conditions, do you meet those conditions that would require planning? Information to consider includes:
   - How much is on site?
   - How much is stored outdoors or indoors?
   - How long is it kept on site?
   - Is any material stored in regulated aboveground or underground storage tanks?
   - Can a release reach navigable waters of the state either by direct discharge or via a conveyance system such as drains, ditches, etc.?
   - What is the facility's hazardous waste generator status (see Chapter 2.4.3)?
   - Does the facility have a hazardous waste treatment, storage, and disposal facility permit?
   - Is the facility required to have a storm water discharge permit (see Chapter 3.2.3)?
   - What is the facility's North America Industrial Classification code (NAIC) or Standard Industrial Classification (SIC) code (see Chapter 3.2.3)?
   - If a release occurred, is there a potential for a significant impact on the waters of the state (i.e., rivers, lakes, drains)?
   - Are hazardous materials as defined under U.S. DOT, NFPA, or Act 138 regulations being shipped off-site (see Chapter 4.4)?

Now use your answers while reviewing the planning requirements found in this chapter, reporting requirements found in Appendix 6-A, and the referenced regulations to see which requirements apply to your company. An overview of the various emergency plans and planning resources are discussed in more detail in the sections to follow within this chapter.

Where can you find additional site specific and general emergency planning resources?

- If your facility has any existing emergency plans, determine if it is still subject to the same regulations that require those plans. Then look at current requirements to determine what needs to be updated. Maintain a plan even if it is not specifically required by the regulations to limit your liabilities.
- Go to **EGLE's Emergency Planning Web site** (**michigan.gov/EGLEEmergencyPlan**) for planning information and Web links.
- The Michigan State Police (MSP), Emergency Management and Homeland Security Division, offers HAZMAT training and has publications to help companies and communities prepare for hazardous materials incidents, including the:
  - ✓ "**Emergency Management and Homeland Security Publications Web page**" that details hazard mitigation planning and success stories, and the
  - ✓ "**Critical Incident Protocol — A Public and Private Partnership**" for community and facility joint planning information.
- The Federal Emergency Management Agency has information at **fema.gov** for prevention and preparation.
- The **Center for Disease Control** (**cdc.gov**) (select Emergency Preparedness and Response) has public health emergency preparedness guidance for specific chemical information, including Chemical Safety Cards, information about anthrax or other bioterrorism threats.
- The U.S. Coast Guard National Response Center at **nrc.uscg.mil/default.aspx** provides information about transportation accidents, oil spills, chemical releases, and more.
- The National Oceanic and Atmospheric Administration's Office of Response and Restoration provides numerous links to chemical databases, MSDS databases, and chemical fact sheets developed by ATSDR highlighting toxicity, exposure information, and more at **response.restoration.noaa.gov**.
- The **National Fire Protection Association** (**www.nfpa.org**) has published the *Standard for Site Security Services for Fire Loss Prevention*, (**NFPA – 601**)
- The **Agency for Toxic Substances and Disease Registry** (**atsdr.cdc.gov**) provides a 10-step procedure to analyze, mitigate, and prevent public health hazards resulting from terrorism involving industrial chemicals.
- The **American Society for Industrial Security** (**securitymanagement.com**) develops educational programs and materials that address security concerns.
- The **Center for Chemical Process Safety** (**aiche.org/ccps**) develops engineering and management practices to prevent and mitigate consequences of catastrophic events involving chemical releases.
- The National Safety Council (**nsc.org**) provides general safety information on chemical and environmental issues.

6.2.1 CONTINGENCY PLANS FOR HAZARDOUS WASTE GENERATORS

EGLE oversees the hazardous waste regulations that require Large Quantity and Small Quantity Generators of hazardous waste to be prepared in case of a fire, explosion, or release of ***hazardous waste,*** and to maintain and operate their businesses in a way that minimizes these risks. Very Small Quantity Generators of hazardous waste are highly encouraged to also be prepared and to consider meeting the Small Quantity Generator planning conditions even though it is not required by the hazardous waste regulations. See the Hazardous Waste Generator Category and Summary Accumulation Requirements Guidance for a summary of the generator categories and requirements they must meet.

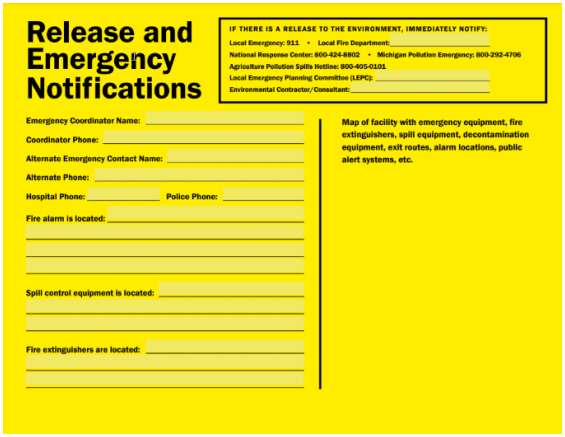
Generators of hazardous waste are required to comply with the following:

1. Have proper emergency equipment available:
    a. Communication devices (e.g., phones, radios, intercom, etc.).
    b. Portable fire extinguishers.
    c. Spill control equipment (e.g., absorbents, containers, kits).
    d. Water for fire control in sufficient volumes.
    e. Decontamination equipment
    f. Test and maintain all emergency response equipment as necessary.
    g. Have immediate access to an internal alarm system. This means personnel can activate an alarm within seconds, not minutes.
    h. Provide and maintain sufficient aisle space in the hazardous waste handling areas to ensure access of emergency equipment and emergency personnel.
2. Meet applicable planning requirements as outlined below.

    Small Quantity Generators Must:

    a. Identify one employee who is on site or on call and has the responsibility and authority to coordinate all emergency response activities. Alternative coordinators are also recommended, so there is always someone who can implement the plan if ever the primary emergency coordinator is on vacation or otherwise not available.
    b. Post the following next to their telephones and/or in the area(s) where hazardous waste is managed:
        - Name and telephone number(s) of the emergency coordinator and alternates.
        - Locations of fire extinguishers, alarms, spill control, and decontamination equipment.
        - Location of fire alarms if direct to fire department, or the telephone number of the local fire department.
        - Location of exits and exit routes.

EGLE has an optional **"Release and Emergency Notifications"** form you can use to post the required information next to the telephones and in areas where the hazardous waste is handled. You are not required to use this particular form; however, failure to have the information posted is a common violation found during **hazardous waste** inspections. There are other requirements outlined on the back of the form. See also EGLE's "**Small Quantity Generator Requirements**" guide.



Release and Emergency Notifications

IF THERE IS A RELEASE TO THE ENVIRONMENT, IMMEDIATELY NOTIFY:
Local Emergency: 911 • Local Fire Department: _____
National Response Center: 800-424-8802 • Michigan Pollution Emergency: 800-292-4706
Agriculture Pollution Spills Hotline: 800-405-0101
Local Emergency Planning Committee (LEPC): _____
Environmental Contractor/ Consultant: _____

Emergency Coordinator Name: _____
Coordinator Phone: _____
Alternate Emergency Contact Name: _____
Alternate Phone: _____
Hospital Phone: _____ Police Phone: _____
Fire alarm is located: _____
Spill control equipment is located: _____
Fire extinguishers are located: _____

Map of facility with emergency equipment, fire extinguishers, spill equipment, decontamination equipment, exit routes, alarm locations, public alert systems, etc.

c. Send a diagram or discuss the layout of their facility, access roads, and evacuation routes with the local response agencies. Have arrangements in place with authorities that respond to the types of emergencies regarding the waste handled at your business. Invite police, fire departments, and emergency response teams to tour your business. If local or state authorities decline your arrangement, you must have written documentation of that refusal. If you use outside contractors to respond to emergencies, you must make arrangements with emergency response contractors and suppliers. Keep documentation of any visits by emergency response people, agreements, etc.

d. Submit to local hospitals a listing of injuries or illnesses that might result from the **hazardous waste** at their businesses.

Large Quantity Generators Must:

a. Have a written contingency plan. This plan describes what staff will do in case of a fire, explosion, or release of **hazardous waste**. The contingency plan must include:

- A Contingency Plan Quick Reference Guide that can be used immediately at the time of an emergency by responders to help them quickly familiarize themselves with the site hazards and respond. The quick reference guide must:

  i) Identify the types/names of hazardous waste handled at the site in layman's terms and the hazards associated with each hazardous waste (e.g., toxic paint wastes, spent ignitable solvent, corrosive acid).

  ii) Identify the maximum amount of each hazardous waste that may be present at any one time.

  iii) Identify any unique threats including any special medical treatment that might be necessary as a result of exposure during an emergency.

  iv) Include a site map showing where hazardous wastes are generated, accumulated, and treated, along with routes to access them.

v) Include a street map for the site, including on-site and public roads, nearby businesses, schools, and residential areas, and the location of any fire hydrants and other water supplies (e.g., identify access type and flow rate) - to help gain access to the site, establish evacuation routes for citizens, and workers, and provide access to water for fire suppression.

vi) Identify on-site notification system capabilities (alarms systems, speakers, etc.) used to notify citizens and workers of an emergency.

vii) Identify the names and phone numbers of emergency coordinators. When identifying the names and telephone numbers of primary and secondary emergency coordinators, keep in mind emergency coordinators must either be on the premises or on call and able to reach the facility within a short amount of time for any emergency, minutes not hours.

- Written procedures to follow in the event of a **hazardous waste** release. . The procedures must be specific to the type of wastes kept on site and the hazards they present. It must include spill and fire response, monitoring actions, and reporting sequence to emergency response organizations.
- A list of emergency equipment at the facility, where it is located, physical description, a brief outline of its capabilities, and provisions to maintain the equipment.
- Include a map of the floor plan that is made available to all staff and shows the location of fire extinguishing equipment (e.g., fire extinguishers, sprinklers, hoses, fire hydrants); communication or alarm systems (e.g., alarm boxes or phones, etc.), spill control equipment (e.g., absorbents, spill kits, shovels); and decontamination equipment using easy-to-understand symbols.
- A written evacuation plan that includes a diagram of the layout of your business, access roads, and primary and alternative evacuation routes. The plan must also describe the signals to be used to begin evacuation. These routes can be shown on the same floor plan as the emergency response equipment. It is recommended that routes include two outside areas where employees should assemble (using the one upwind of the facility) and include exit routes and all facility exit options.

b. Keep multiple copies of the hazardous waste contingency plan at the facility, readily available to those who need it.

Do NOT submit a copy of the Hazardous Waste Contingency Plan to EGLE or to the State Emergency Response Commission (SERC) unless requested.

c. Provide a copy of the contingency plan to *local* police and fire departments, hospitals, emergency response teams, and any emergency response contractors and suppliers you may have hired. Have proof that the plan was distributed (e.g. keep copy of a written cover letter that includes the date of the most recent contingency plan). In the letter, briefly explain why a copy of the plan is being sent, identify a contact who can answers questions, and outline any emergency response you expect from the recipient of the letter. Michigan does not have a state emergency response team that would receive a copy. If local or state authorities decline your arrangement, you must have written documentation of that refusal. If you use outside contractors to respond to emergencies, make arrangements with emergency response contractors and suppliers.

d. Submit to local hospitals a listing of possible injuries or illnesses that might result from the **hazardous waste** at their businesses.

e. Distribute the contingency plan to your employees as part of their hazardous waste training, discuss its provisions, and what is expected of them. Make sure to keep documentation of the initial training and the annual review as they are required records that inspectors will request.

f. Update the plan whenever anything changes, especially if emergency coordinators or equipment changes. If the plan fails during an emergency, it must be updated to address any deficiencies. In addition, updates must be made if the facility makes any changes to its design, construction, operations, materials that change the emergency hazards, and increase the potential for a fire, explosion, or releases of **hazardous waste**, prompting a change in appropriate response actions.

If you are required to prepare another release prevention and response plan or are preparing an integrated contingency plan (Chapter 6.2.8), you only need to add the **hazardous waste** management provisions necessary to make your existing plan comply with these additional requirements. You do not need separate plans to meet the requirements described in the hazardous waste regulations.

Not all of the specific requirements have been outlined above. See EGLE's "Contingency Plan and Emergency Procedures" guide and "Personnel Training Requirements for Fully Regulated Generators of Hazardous Waste," contact your local EGLE District Office Hazardous Waste Program staff, or refer to the regulations for more information.

6.2.2 PART 5 RULES AND POLLUTION INCIDENT PREVENTION PLANS (PIPP)

EGLE's Water Resources Division oversees the Part 5 Rules (Spillage of Oil and Polluting Materials) promulgated under Part 31 (Water Resources Protection) of Act 451. A facility is regulated under the Part 5 Rules if it:

- Meets the definition of an on-land or oil storage facility, AND
- Does not meet any of the listed conditional exemptions, AND

- Has polluting materials that meet or exceed the associated threshold management quantities,

  OR

- EGLE determines a release from the facility could cause substantial harm to the surface or ground waters of the state.

Polluting materials include oil, salt, or any material specified in table 1 (R 324.2009) in the Part 5 Rules. Mixtures that contain one percent or more by weight of a polluting material are included.

Threshold management quantity (TMQ) means any of the following:

- For **salt** used, stored, or otherwise managed on the contiguous property:
  - Solid form - 5 tons
  - Liquid form - 1,000 gallons
- For **polluting materials** listed in table 1 of the Part 5 Rules at a discrete use or storage area:
  - Outdoors - 440 pounds
  - Indoors - 2,200 pounds
- For **oil**:
  - Single container or tank having a capacity of more than 660 gallons; or
  - Total capacity of 1,320 gallons in above ground tanks

The Part 5 Rules have *conditional exemptions* that exempt facilities from regulation under the Part 5 Rules. Many of these exemptions apply if the facility is meeting the requirements in certain other regulations:

- If flammable or combustible liquids (flash point less than 200 degrees Fahrenheit) are **polluting materials** that exceed the TMQ, and if the facility is subject to 1941 PA 207 (Michigan's fire prevention code), then it must be in compliance with the fire prevention code for flammable and combustible liquids. Regulation under Part 5 Rules would only be required if it also had other polluting materials that exceeded the TMQ.
- If the **polluting materials** exceed the TMQ and are contained in underground storage tanks that are subject to Parts 211 and 213 of Act 451 (underground storage tanks and leaking underground storage tanks), then the facility must be in compliance with these regulations. Regulation under the Part 5 Rules is only required if it had polluting materials that exceeded the TMQ that were not contained in underground storage tanks.
- If hazardous wastes are **polluting materials** that exceed the TMQ and if the facility is subject to Part 111 of Act 451 (hazardous waste management), then it must be in compliance with the Part 111 requirements. Regulation under the Part 5 Rules would only be required if it also had other polluting materials that exceeded the TMQ.

- If oil exceeds the TMQ and if the facility is subject to Part 615 of Act 451 (oil and gas production fields) then it must be in compliance with the Part 615 requirements. Regulation under the Part 5 Rules would only be required if the facility also had other polluting materials that exceeded the TMQ.
- A facility is exempt from the Part 5 Rules if all polluting materials in excess of TMQ are stored in containers that do not individually exceed 10 gallons or 100 lbs in capacity and are located indoors at a facility that is designed, constructed, maintained, and operated to prevent any spilled polluting materials from being released directly or indirectly to the surface or ground waters of the state.

EGLE can require that a facility be regulated under the Part 5 Rules even if the polluting materials do not exceed the TMQ. A facility that receives, uses, processes, manufactures, stores, or ships polluting materials in amounts less than the applicable TMQ could be required to comply with the Part 5 Rules if it is determined that a release could be reasonably expected to result in substantial harm to the surface or groundwaters of the state.

Both on-land and oil storage facilities, as defined by the Part 5 Rules, are subject to the following:

- Surveillance to detect releases and procedures implemented to prevent any polluting materials from reaching waters of state.
- Use and indoor storage must be designed, constructed, maintained, and operated to prevent releases from reaching sewers, drains, or reaching waters of the state.
- Release reporting.

On-land facilities, as defined by the Part 5 Rules, also have other requirements that must be met, including outdoor secondary containment and the development of a PIPP. The main components of a PIPP include the following:

- Facility information including emergency contacts.
- Spill control and cleanup procedures.
- Inventory of polluting materials exceeding TMQs.
- Site plan.
- Description of outdoor secondary containment for liquid polluting materials.
- Other spill control measures.
- General facility physical security methods.
- **Emergency notification procedures** that include release reporting. See Chapter 6.3 for a description of the release reporting requirements in the Part 5 Rules.

New, or existing facilities that are changing operations, so they will be meeting threshold management quantities, should have a PIPP completed before beginning those operations. Plans must be reviewed every three years or after any release that required implementation of the plan.

Within 30 days after the completion or modification of a PIPP, the owner or operator must notify the following agencies:

- Local emergency planning committee.
- Local health department.
- EGLE District Office Part 5 Rules Program. A certification stating the facility is in compliance with all the Part 5 Rules must also be submitted to EGLE.

When submitting the certification to EGLE, a specific form is not required. Following is sample certification language that may be used:

> "Under penalty of law, this certifies that (company name) at (site address) is in full compliance with the Part 5 administrative rules pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). A copy of the Pollution Incident Prevention Plan (PIPP) [or Integrated Contingency Plan (ICP) if prepared] may be requested by [include who and how to contact to request a copy]. The facility has met the threshold management quantity for (indicate what polluting materials you have)." Include a signature, title, date, phone number, and mailing address if different than the site address.

Although not required by the rules, facilities are being asked to voluntarily identify the category of polluting material (i.e., salt, Table 1 material, or oil) that is on-site. That information may help the agency decide if they want to request a copy of your PIPP.

Send a letter to the local agencies explaining that you are notifying them that your company has completed a PIPP or ICP and that it is available to them upon request. You must provide a copy the plan within 30 days after receiving a request.

PIPPs may be combined with other plans into an Integrated Contingency Plan (ICP) as long as all of the information required to be in the PIPP is included. More details and a checklist are in the "**PIPP and Part 5 Rules Informational Packet**" (under revision) available under the Part 5 Rules Guidance Documents on EGLE's Part 5 Rules Web site at **Michigan.gov/part5**.

Keep a copy of the PIPP on site.
Do not submit a copy to EGLE or local authorities unless requested.

6.2.3 SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN AND FACILITY RESPONSE PLAN (FRP)

The U.S. EPA, not EGLE, oversees the federal Spill Prevention, Control, and Countermeasure (SPCC) and Facility Response Plan (FRP) requirements for oils contained in Title 40, Part 112 of the Code of Federal Regulations (40 CFR 112).

The Oil Pollution Prevention regulation (40 CFR 112) specifies requirements for prevention of, preparedness for, and response to oil discharges. It includes requirements for Facility Response Plans. The requirements help prevent oil discharges from reaching navigable waters or adjoining shorelines. Certain facilities are required to develop SPCC plans that describe equipment, workforce, procedures, and training to prevent, control, and provide adequate countermeasures to a discharge of oil.

Oils include synthetic oils, petroleum, and refined products such as mineral spirits, gasoline, diesel fuel, kerosene, vegetable oils, animal fats, etc. Other examples of oils are at this U.S. Coast Guard web site: **uscg.mil/vrp/faq/oil.shtml**.

The SPCC rule has undergone numerous amendments and revisions since it was first implemented in 1973. The most recent amendments were effective January 14, 2010, and required compliance by November 10, 2010 (facilities located offshore or with an offshore component or an onshore facility that is required to have a FRP) and November 10, 2011 (onshore facilities not required to have a FRP). Because this rule changes so frequently, it is recommended that you review the current regulations on the U.S. EPA's Web site.

The SPCC regulations and guidance, FRP guidance, sample SPCC plans, and more information can be accessed at **epa.gov/emergencies/content/spcc/index.htm**.

Contact the U.S. EPA Region 5 at 312-886-9497 with questions regarding the SPCC. Call 312-886-0622 if you have questions regarding the FRP.

Owners or operators of non-transportation related facilities subject to this regulation must prepare and implement an SPCC plan and meet other requirements regarding storage and secondary containment. In addition to the federal release reporting requirements, the SPCC plan should also include the Part 5 Rules (Spillage of Oil and Polluting Materials) release reporting requirements as discussed in Chapter 6.2.2.

You might be subject to SPCC regulation if:

1. A release from your facility could potentially reach navigable waters or adjoining shorelines. Most of Michigan meets this condition. Discuss with the U.S. EPA Region 5 if a site might be exempted. The exemption determination is based on geographical aspects of the facility such as proximity to navigable waters, land contour or topography, drainage, and soil conditions. If any **oil-EPA** could reach a sewer line, drainage ditch, intermittent stream bed, or similar

structure that discharges into navigable waters, either directly or indirectly, then the facility would be subject to SPCC regulations if they have threshold amounts.

AND

2. The storage capacity for **oil-EPA** at your facility meets any of the following:
   - Aboveground storage capacity exceeds 1,320 gallons.
   - Underground storage capacity exceeds 42,000 gallons.

   OR

3. The U.S. EPA determines the facility needs an SPCC based on other concerns.

   Note that the applicability of the SPCC regulation is based on the facility's storage capacity for **oil-EPA** and not on the actual amount stored. Containers less than 55 gallons are not included. See the U.S. EPA information about other situations where oil capacity is not required to be counted.

Compliance Dates for all Facilities

A facility starting operation…	Must…
On or before August 16, 2002	• Maintain its existing SPCC plan • Amend and implement the SPCC plan no later than November 10, 2011 (farms have until May 10, 2013)
After August 16, 2002 through November 10, 2010	Prepare and implement the SPCC plan no later than November 10, 2011 (farms have until May 10, 2013)
After November 10, 2010	Prepare and implement a SPCC plan before beginning operations. (Owners or operators of new oil production facilities must prepare and implement and SPCC plan six months after the start of operations.)

You must complete a review and evaluation of the SPCC plan at least once every 5 years from the date the facility became subject to the requirement. See 40 CFR 112.5(b) for more information.

Three areas that must be addressed in the Plan are:

1. Operating procedures the facility implements to prevent oil spills.
2. Control measures installed to prevent oil from entering navigable waters or adjoining shorelines.
3. Countermeasures to contain, cleanup, and mitigate the effects of an oil spill that has an impact on navigable waters or adjoining shorelines.

Some other important elements of an SPCC plan include the following:

- Professional Engineer certification (unless facility meets one of the exemptions)
- Facility diagram
- Oil spill predictions
- Release reporting

- Facility drainage
- Facility inspections
- Site security
- Five-year Plan review
- Management approval
- Appropriate secondary containment or diversionary structures
- Loading/unloading requirements and procedures for tank car and tank trucks
- Personnel training and oil discharge prevention briefings
- Brittle fracture evaluations
- Bulk storage container compliance, inspection, and integrity testing
- Transfer procedures and equipment (including piping)

> Keep a copy of the SPCC plan on site. SPCC plans are not submitted to the local health department, LEPC, EGLE or the U.S. EPA unless requested.

If you are combining a SPCC plan with other plans, be sure to include a detailed cross reference to requirements in 40 CFR 112.7 that clearly indicates where SPCC information is located. See the ICP guidance materials discussed in Chapter 6.2.8.

See the U.S. EPA Web site for **Facility Response Plan (FRP)** requirements for "substantial harm" facilities. A "substantial harm" facility is a facility that, because of its location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on navigable waters or adjoining shorelines. A facility may pose "substantial harm" according to the Facility Response Plan (FRP) rule if it:

1. Has a total oil storage capacity greater than or equal to 42,000 gallons and it transfers oil over water to/from vessels; or
2. Has a total oil storage capacity greater than or equal to one million gallons and meets one of the following conditions:
   - Does not have sufficient secondary containment for each aboveground storage area
   - Is located at a distance such that a discharge from the facility could cause "injury" to fish, wildlife, and sensitive environments
   - Is located at a distance such that a discharge from the facility would shut down a public drinking water intake
   - Has had, within the past five years, a reportable discharge greater than or equal to 10,000 gallons

6.2.4 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

If your facility is required to obtain a permit for the discharge of storm water associated with industrial activity (see Chapter 3.2.3) you will be required to obtain the services of a certified storm water operator and develop a Storm Water Pollution Prevention Plan (SWPPP). EGLE has many materials to help you prepare a SWPPP. Materials include:

- Guidance documents,
- Training videos,
- Certified operator training materials, and
- Sample SWPPP and visual assessment written procedures templates.

These materials can be found at the "Industrial Program" link on **EGLE's stormwater Web site** (**Michigan.gov/EGLEstormwater**) or from an EGLE District Office.

The SWPPP must be:

- Signed by the certified storm water operator and either the permittee or an authorized agent.
- Kept on-site.
- Reviewed annually to assure that it adequately details the current personal and industrial activity.
- An **annual certification** report must be submitted by January 10 of each year.

Written documentation that is required to be maintained for 3 years with the SWPPP includes:

- Routine preventive maintenance inspection reports
- Routine good housekeeping inspection reports
- Comprehensive site inspection reports
- Discharge visual assessment reports
- Employee training records
- Written summaries of the annual SWPPP review, and
- Any other documents relevant to the storm water program at the facility.

After the plan is completed, send notification that the plan was completed to the EGLE District Office. Another requirement is to update the SWPPP whenever there are changes or releases at the facility that have the potential to increase the risk of material contact with storm water.

Do not submit a copy of the SWPPP to EGLE unless requested.

Do submit an annual compliance report by January 10 of each year.

6.2.5 RISK MANAGEMENT PROGRAM

When Congress passed the Clean Air Act Amendments of 1990, Section 112(r) required the USEPA to publish regulations and guidance for chemical accident prevention at facilities using substances that posed the greatest risk of harm from accidental releases. These regulations require companies of all sizes that use certain listed, regulated flammable and toxic substances to develop a Risk Management Program that includes:

- Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases scenarios.
- Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures.
- Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g., the fire department) should an accident occur.

A summary of the facility's risk management program (known as a "Risk Management Plan" or "RMP") was to be submitted to the USEPA by June 21, 1999, *for existing facilities*. The plans must be revised and resubmitted every five years. There are other circumstances described in the RMP regulations that might require a more frequent submission. Facilities after June 21, 1999, must submit a completed RMP as soon as they have a covered chemical above the threshold quantity.

Owners and operators of a facility (stationary source) that manufactures, uses, stores, or otherwise handles more than a threshold quantity of a listed regulated substance in a process, must implement a risk management program and submit a single RMP for all covered processes at the facility. “Process” means any activity involving a listed regulated substance, including any use, storage, manufacturing, handling, or onsite movement of such substances, or combination of these activities. The regulations do not apply to transportation, including storage incident to transportation. However, transportation containers used for storage not incident to transportation and transportation containers connected to equipment at a stationary source are considered part of the stationary source and are potentially covered by the regulations. See the ***General Guidance on Risk Management Program for Chemical Accident Prevention (40 CFR Part 68)*** or one of the industry-specific guidance documents at **epa.gov/rmp/guidance-facilities-risk-management-programs-rmp** for more information on regulatory coverage.

The regulation includes a list of 140 toxic and flammable substances, including threshold quantities (in pounds), to help assess if a process is subject to the Risk Management Program requirements **or the general duty clause**. The U.S. EPA’s “**List of Lists**” identifies the **Clean Air Act (CAA) 112(r)** substances.

RMPs must be submitted to the U.S. EPA using the Web-based software RMP*eSubmit. For software or submittal questions, contact the RMP Reporting Center at 703-227-7650.

The General Duty Clause (GDC), section 112(r)(1), applies to any facility were extremely hazardous substances are present. There is no list of these substances and no minimal threshold. In this case, the term "extremely hazardous substance" means any substance "which may or may not be listed or otherwise identified by any Government agency which may as the result of short-term exposures associated with releases to the air cause death, injury or property damage due to its toxicity, reactivity, flammability, volatility, or corrosivity." The GDC requires that owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances identify hazards associated with an accidental release, design and maintain a safe facility, and minimize consequences of accidental releases that occur.

Access the software and additional information at **Michigan.gov/EGLEEmergencyPlan**.

6.2.6 EMERGENCY ACTION PLAN

Written Emergency Action Plans are required when a facility has flammable and combustible liquids on site in aboveground containers if the following exemptions do not apply:

- Liquids are used solely for onsite consumption as fuels.
- Operations where Class II liquids (flashpoint of 100 degrees and below 140 degrees Fahrenheit) or Class III liquids (flashpoint of 140 degrees Fahrenheit or higher) are stored in atmospheric tanks or transferred at temperatures below their flash points.
- Mercantile occupancies, crude petroleum exploration, drillings and well servicing operations, and normally unoccupied facilities in remote locations. Mercantile occupations include the use of a building or structure for the wholesale or retail display, storage and merchandising of goods or wares.

This planning requirement is included in Chapter 5 of the National Fire Protection Association (NFPA) pamphlet number 30, 2021 edition, which is adopted by the state Flammable and Combustible Liquid Rules. This pamphlet can be ordered from the NFPA at **nfpa.org**. The facility needs to evaluate site specific conditions and risks of fire hazards, including the emergency response capabilities of local emergency services. The plan needs to include the following:

- Procedures to follow in case of fire, such as sounding the alarm, notifying fire department, evacuating people, controlling, and extinguishing the fire.
- Procedures and schedules for having drills of these procedures.
- Identifying and training employees to carry out assigned duties.
- Maintenance of fire protection equipment.
- Procedures for shutting down or isolating equipment to reduce the release of liquid.
- Identifying alternate measures for safety of employees.

See Chapter 4.3 for plan requirements for underground storage tanks and for more information on storage of flammable and combustible liquids. Contact the DLARA, Storage Tank Program at 517-241-8847 for questions or go to **Michigan.gov/StorageTanks**.

Keep a copy of the plan on site. Do not submit to EGLE unless requested.

6.2.7 HAZMAT SECURITY PLAN

The U.S. DOT transportation regulations (Subpart I Part 172 (**49 CFR 172.800**) require shippers of any of the following hazardous materials to develop a hazardous materials security plan:

- Highway route-controlled quantities of Class 7 (radioactive) materials as defined in 49 CFR173.403 in a motor vehicle, rail car, or freight container.
- More than 25 kg (55 lb.) of Division 1.1, 1.2, or 1.3 (explosive) materials in a motor vehicle, rail car, or freight container.
- More than 1 L (1.06 qt) per package of any material that is extremely toxic by inhalation, as defined by 49 CFR 171.8, that meets criteria for Hazard Zone A, as specified in 49 CFR 173.116(a), or 49 CFR 173.133(a).
- Hazardous materials in bulk packaging having a capacity of 13,248 L (3,500 gal) or more for liquids or gases, or 13.24 cubic meters (468 cubic feet) or more for solids.
- Hazardous materials, not in a bulk package, of 2,268 kg (5,000 lb) gross weight or more of a class of hazardous materials for which placarding of the vehicle, rail car, or freight container is required for that class under the provisions of 49 CFR 172 subpart F.
- Any quantity of hazardous material that requires placarding under 49 CFR 172 subpart F, including hazardous waste. Placards are required when the shipment is in excess of 1000 pounds.
- Select agents or toxins regulated by the Centers for Disease Control and Prevention under 42 CFR 73.

A written security plan must contain the following sections:

- Personnel Security
- Unauthorized Access
- En Route Security

Go to **fmcsa.dot.gov/safety-security/safety-security.htm** for resources regarding safety and security for highway transport of hazardous materials. Many of the other emergency planning requirements cover some components required within the security plan.

The plan must be made available to the employees responsible for implementing it. Unlike other contingency plans, the security plan contents should be shared only with those employees whose responsibilities involve the shipment and handling of hazardous materials. Typically, this could include plant security, EHS representatives, maintenance, and shipping/receiving personnel. An appropriate list of personnel who require disclosure of the plan contents should be developed.

Keep the security plan as long as it remains in effect and any updates or changes must be communicated to the affected employees.

Every hazmat facility needs security training (see Chapter 4.4) and must keep training records. Even if you don't ship any of the above hazardous materials requiring a security plan, your employees must receive hazmat security awareness training if you ship any hazardous materials. This training can be combined with other required training sessions.

Call the U.S. DOT Hazardous Materials Information Center 800-467-4922 for more information.

6.2.8 INTEGRATED CONTINGENCY PLAN (ICP)

Many facilities are required to maintain more than one emergency response plan. If you are subject to plan requirements under multiple regulations, you may combine all the required components into one plan called an Integrated Contingency Plan (ICP). The National Response Team's ICP Guidance provides a format for a comprehensive emergency response plan. This one-plan guidance is intended to be used by facilities to prepare emergency response plans for responding to releases of oil and non-radiological hazardous substances. It can be used by *any* facility, whether or not the facility is subject to specific planning requirements under federal and/or state regulations. The guidance was published in 1996 and is available at **Michigan.gov/EGLEEmergencyPlan**.

Use of the ICP format by facilities is supported by federal agencies (U.S. EPA, U.S. DOT, Department of the Interior, and Department of Labor) and state agencies (Michigan Citizen-Community Emergency Response Coordinating Council, State Police, EGLE, Department of Agriculture and Rural Development, and Department of Licensing and Regulatory Affairs). Michigan agencies strongly encourage facilities to use the ICP format.

There are three main sections of an ICP as described below:

Plan Introduction. This section is designed to provide facility response personnel, outside responders, and regulatory officials with basic information about the plan and the entity it covers. It includes:

- Purpose and Scope of Plan Coverage
- Table of Contents
- Current Revision Date
- General Facility Identification Information

Core Plan. This section is intended to reflect the essential steps necessary to initiate, conduct, and terminate an emergency response action. It should be concise, easy to follow, reference annexes that provide more detailed information, and fit into the glove-box of a response vehicle. It includes:

- Discovery
- Initial Response Procedures
- Sustained Actions
- Termination and Follow-Up Actions

Supporting Annexes. The annexes are designed to provide key supporting information for conducting an emergency response under the core plan as well as document compliance with regulatory requirements not addressed elsewhere in the ICP. They should augment, not duplicate, core plan information. Annexes include:

- Facility and Locality Information
- Notification Requirements
- Response Management System
- Incident Documentation
- Training and Exercises/Drills
- Response Critique and Plan Review and Modification Process
- Prevention
- Regulatory Compliance and Cross-Reference Matrices

In addition to the ICP guidance, information on many of the plans that can be integrated into the ICP, such as SPCC, RMP, PIPP, and SWPPP, are available on EGLE's Emergency Planning Web site. This site includes guidance specific to the inclusion of federal and state plan requirements into the ICP, contacts for help regarding requirements of specific plans, emergency planning information and workbooks for facilities that are not subject to specific planning requirements, and plan submittal guidance.

Not all plans are required to be submitted to EGLE. Please read about where you should submit your plan **before** you submit a copy.

6.2.9 FEDERAL SITE SECURITY PLAN (SSP)

A regulated facility under this federal site security planning requirement is any establishment that possesses or plans to possess, at any relevant point in time, a quantity of a chemical substance determined to be potentially dangerous or that meets other risk-related criteria identified by the U.S. Department of Homeland Security (DHS). Review the Appendix A "Chemicals of Interest List" and site security planning information available at **dhs.gov/critical-infrastructure-chemical-security**. Appendix A includes approximately 300 chemicals of interest. Some of these chemicals are also listed as polluting materials under the state's Part 5 Rules as discussed in Chapter 6.2.2.

The DHS oversees the Chemical Facility Anti-Terrorism Standards (CFATS) that require facilities to prepare vulnerability assessments and develop and implement Site Security Plans if they are considered high risk. In some specified circumstances, a facility may be able to submit an alternate security program.

Owners of facilities with chemicals above the threshold quantities should have completed a preliminary online assessment to determine the level of risk associated with their facility **by January 19, 2008**. After this step, the DHS will determine if the facility presents a security risk and is subject to the Chemical Facility and Anti-Terrorism Standards. Submissions will be validated through audits and site inspections. The DHS will provide technical assistance to facility owners and operators as needed. Security standards will be required to achieve specific outcomes, such as securing the perimeter and critical targets, controlling access, deterring theft of potentially dangerous chemicals, and preventing internal sabotage.

If you have questions about CFATS go to **csat-help.dhs.gov** or call the CFATS Help Desk at 866-323-2957.

6.3 RELEASE NOTIFICATION REQUIREMENTS IN MICHIGAN

Chemical releases in Michigan are potentially reportable under one or more of twenty-seven different state and federal regulations. Determining which regulations apply to a specific release can be an overwhelming task. The "Release Notification Requirements in Michigan" document was compiled by the Michigan SARA Title III Program staff in the Department of Environment, Great Lakes and Energy (EGLE) to help owners and operators of facilities in Michigan, including vehicles and farms, determine their potential notification and reporting requirements in the event of a chemical release.

Check your permits, licenses, registrations, pollution prevention plans, and local ordinances for additional release reporting requirements. In particular, all National Pollutant Discharge Elimination System permits, and most air permits, have release reporting requirements in them that are not included in this document.

The "Release Notification Requirements" document should be used as a tool to identify potential reporting requirements before a release occurs, and to identify follow-up reporting requirements based on the release. It outlines what releases must be reported, when they must be reported, and to whom they must be reported.

Links to the referenced release reporting forms and chemical lists are available on the EGLE release reporting website (**Michigan.gov/ChemRelease**). Visit this site for updated EGLE and LEPC contact information.

6.3.1 WHAT IS A CHEMICAL RELEASE?

The term "release" means spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing. "Chemical" includes substances considered to be toxic or hazardous as well as substances as seemingly harmless as salad oil.

6.3.2 CHEMICAL LISTS

The U.S. EPA published a consolidated list of chemicals subject to SARA Title III, CERCLA, and section 112(r) of the Clean Air Act called the "List of Lists." The List of Lists (June 2019) is available at **epa.gov/epcra/consolidated-list-lists-under-epcracerclacaa-ss112r-august-2020-version** and includes:

- **Hazardous substances-CERCLA** including RCRA waste streams and unlisted hazardous wastes, with reportable quantities (RQ) for releases (originally published in 40 CFR 302, Table 302.4).
- SARA Title III section 304 **Extremely Hazardous Substances** (EHS) with RQs for releases (originally published in 40 CFR 355, Appendix A).
- SARA Title III Section 313 **Toxic chemicals** (originally published in 40 CFR 372 Subpart D).

The Part 5 Rules, Spillage of Oil and Polluting Materials, were promulgated pursuant to Part 31 of Act 451. These rules include a list of "**polluting materials**" with threshold reporting quantities for releases.

NOx Exemption in CERCLA and SARA Title III

The U.S. EPA finalized an exemption for certain releases of emissions of NO and NO_2 (collectively NOx) to air from CERCLA and SARA Title III reporting requirements (71 FR 58525). The exemption was effective November 3, 2006, and applies to releases to the air of less than 1,000 pounds of NOx in 24 hours that are the result of combustion. The exemption also applies to emissions from combustion-related activities such as detonation or processes that include both combustion and non-combustion operations, such as nitric acid production.

Petroleum Exclusion in CERCLA

Petroleum, including crude oil or any fraction thereof is excluded from the definitions of "hazardous substance," and "pollutant or contaminant" under CERCLA. Petroleum releases, accordingly, must generally be addressed under the authority of other law such as the underground storage tank (UST) provisions of RCRA, or the Clean Water Act (CWA). This exception, which has become known as the "***petroleum exclusion***," plays a significant role in CERCLA because many sites contain petroleum contamination. Petroleum frequently contains specific listed hazardous substances, the most common of which are benzene, toluene and xylenes. In general, such substances are not treated as CERCLA hazardous substances as long as they are found in refined petroleum fractions and are not present at levels that exceed those normally found in such fractions. Substances present in petroleum as a result of contamination during use or from mixing or combining are not within the petroleum exclusion and in such cases the substances are considered **hazardous substances-CERCLA**.

Part 201 of Act 451, Environmental Remediation, section 20114(1)(b) states that the requirements to report a release under this regulation apply to "reportable quantities of hazardous substances established pursuant to 40 CFR 302.4 and 302.6 (2012)…." This regulation references the listed hazardous substances published in the Code of Federal Regulations. It does not adopt the petroleum exclusion that applies to federal regulation of releases of **hazardous substances-CERCLA**. As a result, petroleum constituents, including component substances such as benzene, toluene, and xylenes, plus any additives (e.g., MTBE, lead) are all reportable under Part 201 based on the reportable quantities in the 2012 version of the CERCLA list of hazardous substances published in 40 CFR 302.4 and 302.6. (See the release calculation example in Chapter 6.3.1.)

Initial Notification: There is NO PENALTY for over-reporting!

When there is a release, determining if, when, and to whom it should be reported can be a daunting task, even if you are familiar with the table. It is therefore recommended that if there is a release, immediately call the three numbers in the box to the right, even if the content or quantity of the released material has not yet been determined:

You can then respond to the release, reassess the situation, and make additional notifications as required (e.g., as specified in the table or in your permits). Your follow-up report will provide details that explain why a release was or was not reportable.

SARA Title III Section 304 requires that the LEPC be notified immediately of a release. Many LEPCs accept the call to 911 as notification. Others require direct notification. Contact your LEPC in advance to find out their requirements.

Post These Numbers by Every Phone!

911 to notify Local authorities

800-292-4706 (PEAS) to notify State authorities

800-424-8802 (NRC) to notify Federal authorities

Written Follow-up Report

Written follow-up report forms that are specified in the table are required by regulation. EGLE has developed a generic written report form called "Spill or Release Report" (EQP 3465) that can be used to report releases of:

Hot Tip!

Use the generic **Spill or Release Report form** to record *initial* notifications.

- Hazardous substances-CERCLA and extremely hazardous substances under SARA Title III.
- **Hazardous waste** under Part 111 of Act 451.
- Liquid industrial by-products under Part 121 of Act 451.
- **Hazardous substances** under Part 201 of Act 451.
- **Polluting materials** under Part 31 of Act 451, Part 5 Rules.

EGLE Release Reporting Web site: Michigan.gov/ChemRelease

6.3.1 RELEASE CALCULATIONS

How to determine the reportable quantity of a product based on the reportable quantity of an ingredient.

Example Calculation: When is a release of gasoline reportable?

Under Part 201 of Act 451, releases of **hazardous substances-CERCLA** published in the 2012 version of 40 CFR 302, Table 302.4 must be reported. Gasoline is not a **hazardous substance-CERCLA**. However, some of the ingredients in gasoline are **hazardous substances-CERCLA** and are reportable under this regulation.

This example shows you how to determine when a release of gasoline *in gallons* is reportable under Part 201 of Act 451 based on reportable quantities *in pounds* of the ingredients.

1. Identify the hazardous ingredients, reportable quantities, and weight percentages.

   Look at a Safety Data Sheet (SDS) for gasoline to find the hazardous ingredients and the weight percentages of those ingredients. This is from Section 3 in an SDS for "Gasoline, Unleaded."

CAS #	Component	Weight %
8006-61-9	Gasoline, natural	10-30
108-88-3	Toluene	10-30
106-97-8	Butane	1-20
1330-20-7	Xylenes (o-, m-, p- isomers)	10-30
64-17-5	Ethanol; Ethyl alcohol	0-8.2
100-41-4	Ethylbenzene	1-5
71-43-2	Benzene	<5
110-54-3	N-Hexane	0.5-0.75

   Look at the "List of Lists" to find the reportable quantity of an ingredient that is a **hazardous substance-CERCLA.**

   Benzene (CAS number 71-43-2) is a **hazardous substance-CERCLA** listed in the "List of Lists." The reportable quantity (RQ) for benzene under CERCLA is 10 pounds. That means that a release of 10 pounds or more of benzene to the environment must be reported to EGLE's Remediation and Redevelopment Division district office (or PEAS after hours). The weight percent of benzene in the example gasoline is 0.4 to 5%. When calculating a reportable release, use the higher, weight percent.

2. Calculate the weight of the gasoline.

   Because the gasoline is a liquid measured in gallons, and the reportable quantity of benzene is in pounds, we must calculate the weight of a gallon of gasoline. The formula is as follows:

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

The specific gravity, also called the relative density, can be found in the "Physical & Chemical Properties" section of the SDS. 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. If it is less than 1, then the substance weighs less than water. If you think about this logically, you know that gasoline floats on water (thus the sheen you see on water at boat launches), so you can conclude that gasoline must weigh less than water. The specific gravity is often reported as a range. In this example, the specific gravity is reported on the SDS as a range of 0.72 to 0.75. If you plug these values into the calculation, this gasoline can weigh anywhere from 6.0 lb./gal to 6.3 lb./gal. When calculating a reportable release, use the higher, more conservative, value. The weight we will use for our example gasoline is 6.3 lb./gal.

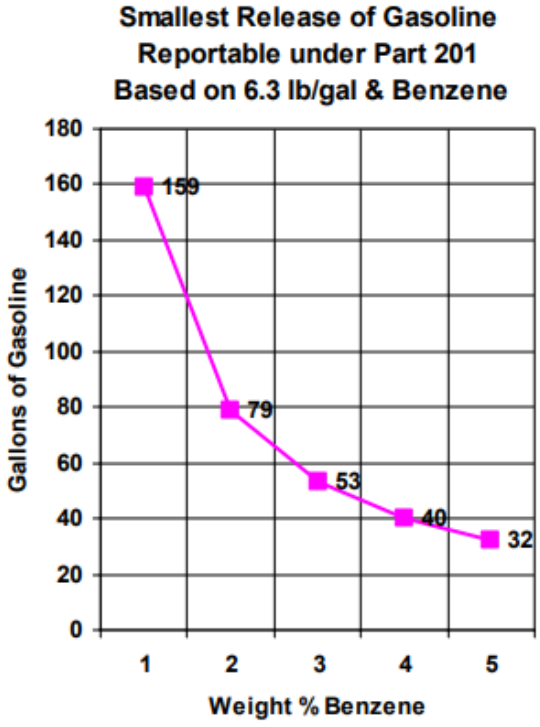
3. Calculate the smallest reportable release of gasoline under Part 201 of Act 451 based on the ingredient benzene. Here is the formula:

RQ of ingredient (lbs) ÷ weight of product (lb./gal) ÷ weight % of ingredient = reportable gallons of product

Using the numbers we determined above, we get:

10 lb (RQ benzene) ÷ **6.3** lb/gal gasoline ÷ **0.05** (wt. % benzene)
= **32 gal of gasoline** (reportable if released to the environment)

This graph below shows how the reportable quantity of gasoline varies with the weight percent of benzene.



There would be a smaller reportable quantity (the line would shift down) for "heavier" gasoline. Look at all hazardous ingredients to determine which one would "control" the reportable quantity. The controlling ingredient is the one that results in the smallest reportable quantity. For gasoline, the controlling ingredient is benzene.

In real life, this is not an exact science. Use this as a way to come up with educated guesstimates for when to report. For gasoline, report any release that looks like it is approaching 30 gallons or more.

Keep in mind that smaller releases of gasoline are potentially reportable under other regulations (e.g., if the release reaches surface or groundwater). Also remember that **all releases must be cleaned up** to the extent specified in the regulations. This includes releases that are not reportable under any regulation.

In summary: When determining reportable releases, it is important to realize that it is sometimes the ingredients in a given product that make the release of the product reportable. There are three main steps in the process for determining when a release of a product is subject to reporting based on the reportable quantities of the ingredients:

1. Identify the hazardous ingredients, corresponding reportable quantities, and weight percents. This depends on the regulation!
2. If the product is a liquid and the reportable quantity of the ingredient is given in pounds, calculate the weight of the product in pounds per gallon. If the product is a solid, skip this step.
3. Calculate the smallest reportable release using the formula above. If the product is a solid, the formula is simply:

   RQ of ingredient (lbs.) ÷ weight % of ingredient in solid product = reportable pounds of solid product.

6.4 RELEASE RESPONSE AND CLEANUP

Response and cleanup of a spill or release of hazardous and/or toxic substance can be very costly and detrimental to the health of your employees and environment. To become more efficient and effective in release response and cleanup, make it a priority to integrate pollution prevention planning activities into all aspects of your operations, including the prevention of spills and reduction or minimization of waste during response and cleanup.

In addition to the release reporting requirements described above in Chapter 6.3, you must be ready to immediately respond whenever a release occurs. Whether you are legally required to prepare an environmental release prevention and response plan (described in Chapter 6.2) or voluntarily decide to prepare one, it needs to be in effect with personnel who are trained to

implement it. This helps to ensure that when a release occurs, appropriate response is taken without delay. At least one person trained in release control and cleanup procedures, equipment use, and disposal methods of recovered materials should be on duty or on call at all times. It is important to remember that you are obligated to respond and clean up all contamination, and failure to do so may result in escalated enforcement, including but not limited to the imposition of civil penalties. If your release involves a regulated underground storage tank, see Chapter 4 for information on how to respond and clean up the release. Some excellent Internet resource links for environmental emergency operations and response are the Computer Aided Management of Emergency Operations (CAMEO) Web site at **response.restoration.noaa.gov** and the National Institute for Occupational Safety and Health (NIOSH) pocket guide Web site at **cdc.gov/niosh/npg**.

Post EGLE's Pollution Emergency Alerting System number and *use* it: **800-292-4706**

All hazardous and/or toxic chemical release responders need to consider the following actions:

- ✓ Immediately **assess** the nature of the release; chemicals and exposure pathways of concern; toxicity; safety; type of personal protection equipment (PPE) needed; and take appropriate response and cleanup actions to protect the health and safety of those in the affected area, when and where possible. See Chapter 6.3 “Release Notification Requirements in Michigan.”
- ✓ If possible, quickly work to **contain** the release to prevent the spread of contamination. For example, cover floor drains to prevent the release from reaching the sewer, and dike the release with absorbents such as spill pillows or cat litter and dirt as necessary to prevent it from spreading. Staff responding to the release must be trained in wearing the appropriate PPE. Most facilities managing hazardous and/or toxic chemicals are required to have an environmental release prevention and response plan in the event of a release. These plans need to be practical, efficient, and provide useful instructions to trained facility personnel that can be easily followed to clean up a release.
- ✓ **Clean up** contamination quickly to prevent impacts to human health and the environment. Release prevention planning (i.e., rapid containment, response, and cleanup) may minimize the environmental impacts as well as decrease the overall cost of cleanup. This can be as simple as quickly positioning an absorbent to contain a release to protect a natural resource, or as complex as purging and treating groundwater for years under an approved state remedial action plan or state/federal enforcement order. Waste generated from a cleanup must be properly characterized, managed, and disposed in accordance with applicable state and federal regulations. Most importantly, communicate with the environmental regulatory agencies in your area during the planning phase or in advance of any release. Your EGLE District Office can provide additional guidance to help assure your response is appropriate and cost-effective.

Some released hazardous or toxic substances and cleanup wastes may pose a serious health threat to personnel. Have appropriate PPE available and personnel trained in its proper use. Depending on the hazardous and/or toxic nature of the release, PPE may include the appropriate chemical resistant suits, gloves, boots, respirators, self-contained breathing apparatus, and eye protection such as goggles or face shields. Safety Data Sheets (SDSs) or the NIOSH Pocket Guide to Chemical Hazards contain valuable information for selecting the appropriate PPE. These resources can be accessed at the **cdc.gov/niosh** web site or in the Emergency Response Guidebook (phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg).

Persons responding to hazardous releases must be *trained* in accordance with the Hazardous Waste Operations and Emergency Response (HAZWOPER) procedures. Another option is to have previously procured professional assistance. Search under the terms, "Environmental and Ecological Services," "Spill Control Service," or "Waste Reduction, Disposal, and Recycling Service" for companies offering environmental cleanup services in your area.

Release planning will help to identify environmental response equipment (e.g., spill cleanup kits, PPE, etc.) specific to a company's needs to quickly contain and cleanup releases. Many products are used to contain and clean up released chemicals and waste. Absorbent pads, booms, or portable dikes are often used to control, contain, and cleanup large liquid releases. Commercially available absorbent powders and granular clay (like cat litter) are examples of items used to absorb and contain free-phase liquids during release response and cleanup.

If a release cannot be cleaned up by trained personnel, hiring an experienced environmental cleanup contractor is recommended. Depending on the severity of a release, a contractor may provide more efficient and cost-effective response and cleanup solutions. Environmental contractors who work on regulated leaking underground storage tank facilities must be knowledgeable in Part 213 (Leaking Underground Storage Tanks) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451). Environmental contractors performing work at leaking or underground storage tank sites must be qualified per Part 215 (Michigan Underground Storage Tank Financial Assurance Act) of Act 451 (Section 324.21542). Your EGLE District Office can verify that your state notification and reporting obligations have been satisfied and that your response and cleanup is being conducted properly. If you need further information or assistance about response and cleanup procedures, please contact your District Office).

6.4.1 ENVIRONMENTAL INVESTIGATION REQUIREMENTS

Under Part 201 (Environmental Remediation) of Act 451, Section 324.20126, the property is considered a "Facility" or site of environmental contamination if environmental data shows hazardous and/or toxic substances are present on the property at levels that exceed the Part 201 generic residential criteria. A person who owns or operates a "Facility" and who is liable under Part 201 of Act 451, shall do all of the following:

a) Immediately stop or prevent the release at the source.
b) Immediately implement source control or removal measures to remove or contain hazardous substances.
c) Immediately identify and eliminate any threat of fire or explosion or any direct contact hazards.
d) Report the release to the department within 24 hours.
e) Immediately initiate removal of a hazardous substance that is in a liquid phase that is not dissolved in water.
f) Determine the nature and extent of the release at the facility.
g) Diligently pursue response activities to achieve the cleanup criteria.

If the owner or operator of an environmentally contaminated property is not liable, then he or she may still have certain **Due Care** obligations to address as specified under R 299.51001, et. seq. Due Care protects persons on the contaminated property from exposure to hazardous and toxic substances.

In cases where the release is large or where there have been documented adverse environmental effects (i.e., fish kills, other resource impacts, etc.), a **Natural Resources Damage Assessment** (NRDA) to evaluate and assess natural resource damage(s) and cost(s) may be required. A NRDA is usually difficult and expensive to do. A request from EGLE for a NRDA may be avoided by either good pollution prevention planning or by responding to releases soon after they occur on a property. If the activity that resulted in a release is regulated under Part 213 (Leaking Underground Storage Tanks), Part 111 (Hazardous Waste Management), or other specific authority, those laws may require other specific requirements for environmental investigations, cleanups, etc. For activities regulated under the regulations, contact EGLE for assistance in determining the correct environmental investigation requirements.

An environmental investigation may need to be conducted to define the horizontal and vertical extent of environmental contamination so that appropriate remedial action or cleanup measures can be planned and implemented. This kind of environmental investigation, often referred to as a "**remedial investigation**" or "RI," may include testing of soil, sediment, groundwater, surface water, and air quality. The key to conducting an effective RI is to gather enough environmental information to make the necessary decisions about further cleanup needs. You will need the services of an experienced environmental professional to carry out an RI.

An RI is a different process than a **Baseline Environmental Assessment** (BEA), which is described in Chapter 7.2.2. A BEA is a state "liability" protection tool and is not designed to identify cleanup needs. Federal environmental investigation guidance documents may be obtained from the U.S. EPA Web site at **clu-in.org** and the American Society for Testing and Materials (ASTM) Web site at **www.astm.org**. The ASTM guidance includes information about Phase I and II Environmental

Assessments (EAs). EAs are commonly performed on parcels of industrial or commercial properties to determine the extent of existing environmental contamination. The ASTM Phase I and II EA processes are often used to determine the environmental condition of a property to be purchased, but much of the ASTM guidance is useful for other site characterization purposes as well.

Information about cleanup requirements, applicable cleanup criteria, establishing "background" concentrations, and other technical issues is available at **Michigan.gov/EGLERemediation** under Resource Materials.

6.4.2 DOCUMENTING PLANS FOR CLEANUP

If you are conducting a cleanup under Part 201 of Act 451, there may be other state/federal regulations to address. A Remedial Action Plan (RAP) is used to document how environmental contamination will be cleaned up. If cleanup actions will be conducted in phases, each phase is generally referred to as an Interim Response (IR). A series of IRs may go together to become a remedial action. A RAP is intended to comprehensively address all contamination problems at a "Facility," while IRs can be used to address individual releases of hazardous and/or toxic substances or aspects of those releases.

A RAP is generally prepared after a site IR is complete and a course of action can be developed to remediate or cleanup the site as a whole. In many instances, it is appropriate to conduct RAP activities in a phased approach. IR activities allow for time-critical actions to be planned and implemented addressing high-risk contamination areas first, with subsequent IRs to tackle more widespread contamination. Examples of IR activities include removing soil contamination "hot spots," or point sources and abandoned containers containing hazardous substances.

6.4.3 CLEANUP CRITERIA

EGLE has adopted a risk-based or generic criteria approach to environmental cleanups. Risk-based cleanup criteria are based on the designated or allowable land-use because land-use determines what type of site-specific activity and exposure will occur at each property. Cleanup criteria are integral in determining the scope and adequacy of remedial activities.

EGLE has calculated "generic" cleanup criteria for soil and water media that apply to the following types of land use categories: residential, commercial, and industrial. Occasionally, the environmental consultant may find that it is more appropriate to use site specific cleanup criteria to address the contamination. The consultant can develop the site-specific variables with oversight from EGLE. If the cleanup is based on site specific variables, then the property deed would have to be restricted. The deed restriction will inform the future property owners about land uses that are prohibited, and about the remaining contamination. EGLE approval is required for a cleanup that depends on land use restrictions. Please contact your EGLE District Office for assistance in determining which cleanup criteria to apply at your site.

The Cleanup Criteria Requirements for Response Activity are available on EGLE's Web site at **Michigan.gov/Remediation** under the "Other Useful Information." Select "Cleanup Criteria Requirements for Response Activity." If you need further information or assistance, please contact your EGLE District Office to determine what cleanup criteria can be used at your site of environmental contamination or call 800-662-9278 for assistance.

6.4.3.a Ground Cleanup

Even if a release is not large enough to require reporting, it still must be cleaned up, regardless of the release volume or whether it occurred on a paved outdoor surface or dirt surface. Quick response to a release is important since contamination from the release can spread further, making the cleanup more difficult and expensive. Use an inert absorbent material, such as clay-based adsorbents (like cat litter), or specially formulated pads or powders, to soak up the liquid. Collect any released solid materials so they do not spread or get blown around. THE RELEASED MATERIAL SHOULD NEVER BE FLUSHED DOWN THE DRAIN OR ONTO THE GROUND. The act of flushing the release will spread the contamination into previously uncontaminated areas, increase the scope of the investigation, the time needed to clean up the contamination and exponentially increase the cost of the cleanup.

During the initial response to the spill and the cleanup, be very careful not to mix incompatible or reactive chemicals or wastes together (see Safety Data Sheets, or NIOSH at **siri.org/msds/index.php** and **phmsa.dot.gov/hazmat** for help). The containers used to store spent cleanup materials must be compatible with the released liquid and correctly capped and labeled. Once contained, the used cleanup materials must be disposed of properly based on the hazardous and/or toxic nature of the waste. If the used materials are going to a sanitary landfill, there can be no free-phase liquid present with the containerized materials. If the materials are characterized as hazardous and/or toxic waste, handle the waste in accordance with Chapter 2. For information about hazardous or solid waste characterization, please contact EGLE's Hazardous Waste Program at 517-284-6562 or go to **Michigan.gov/EGLEwaste**. For information about transporting requirements for hazardous materials including oils, gas, etc., please refer to the Michigan State Police, Commercial Vehicle Enforcement Division Web site at **Michigan.gov/MotorCarrier** and Chapter 4.4.

If a hazardous and/or toxic substance is released to the ground, you must determine if the affected soil is hazardous or solid waste. In either case, it must be properly characterized, removed, transported, treated, stored, or disposed of at the appropriate licensed landfill. If the soil is hazardous waste, you will need to meet the generator requirements discussed in Chapter 2.4. For small volumes of contaminated soil or waste, the easiest cleanup method is to excavate the soil and place it on polyethylene or put it into an acceptable container. The soil, either in the pile or container, must be covered to prevent precipitation from leaching through the soil and spreading contamination into the ground. Once contaminated soils are properly characterized and approved for disposal by the proper waste facility, it can be disposed of off-site. For larger volumes of contaminated soil, it may be cheaper to either treat the soil in place or dig it up for treatment

on-site. There are regulatory restrictions on the movement of contaminated soils on or off property and persons dealing with such materials during cleanup activities at sites of environmental contamination. If you need further information or assistance, please contact your nearest EGLE District Office.

EGLE developed a guidance document entitled, **"Statistics – Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria** (S3TM)**"** to help verify that soils containing hazardous and/or toxic substances are clean, or below the Part 201 of Act 451 generic residential cleanup criteria. The S3TM guidance has been:

- Applied to excavations to determine the number of samples needed to show that the remaining unexcavated soils are clean.
- Applied to waste piles that have undergone remediation technology.
- Used to characterize and verify that the waste soils have been remediated prior to placing the soils back into the excavation area(s) or landfilling.

If you need further information or assistance, please contact the EGLE Project Manager involved with your cleanup to determine whether S3TM can be applied to your environmental cleanup. The S3TM document is available from EGLE's Web site at **Michigan.gov/remediation** (select "Site Investigation and Cleanup" and "Cleanup Program Information").

6.4.3.b Groundwater Cleanup

If the groundwater becomes contaminated by a release, overfill, leaking underground storage tank, etc., you are required to clean up the contamination. You may need to hire a qualified environmental professional to complete a hydro geological investigation to determine the specific groundwater remedy needed to clean up your site. You should discuss all available treatment options and the timeframe for the cleanup with the environmental consultant to ensure that the most appropriate cleanup method is chosen.

Whenever environmental treatment systems are proposed to clean up contamination, the Best Available Technology (BAT) is required for remediation where treated groundwater will be discharged to groundwater or surface water. Best Available Control Technology for Toxics (T-BACT) is required to control the emission of toxic air contaminants. After the application of T-BACT, the emissions of any toxic air contaminants cannot result in maximum ambient concentrations which exceed the applicable health-based screening levels. For more information about T-BACT, see Chapter 1.2.4 "Air Toxics Regulations."

EGLE encourages the use of innovative environmental treatment technologies or remedies that minimize waste; i.e., electrical power consumption, secondary waste material generation, etc. For pollution prevention information, go to **michigan.gov/EGLEp2**.

Permits may be required for air, groundwater, and surface water discharges from a cleanup site. Each permit has requirements for operation, maintenance, monitoring, testing and reporting on the discharge of the treatment system:

- If you use air stripping, you are subject to air quality regulations and may need to obtain a Permit to Install from the Air Quality Division (AQD) to meet T-BACT requirements prior to discharge. For further information or assistance, contact your AQD EGLE District Office.
- If treated groundwater is discharged to surface water, you need to obtain a National Pollutant Discharge Elimination System (NPDES) Permit from EGLE that meets BAT requirements prior to discharge (see Chapter 3.2.3).
- If treated groundwater will be discharged back to the groundwater, you may need to obtain a state groundwater discharge permit, or an exemption prior to discharge (see Chapter 3.2.4) from EGLE. In some areas, the water will not infiltrate or seep back into the ground fast enough to make groundwater discharge a feasible option.

When contaminated groundwater is venting or discharging (i.e., flowing naturally) into surface water, the Part 201 of Act 451 groundwater/surface water interface (GSI) cleanup criteria or screening levels must be met. If the GSI criteria are exceeded, further investigation and possibly remediation of the surface water will likely be required. If groundwater contamination concentrations will exceed the GSI generic cleanup criteria at the point where contaminated groundwater vents to surface water, a more detailed site-specific evaluation will be required to determine if a "mixing zone" can be allowed or whether contaminated groundwater can be allowed to legally discharge into "waters of the state" (i.e., lakes, rivers, creeks, wetlands, drains, etc.) and still ensure protection of human health and the environment. Information about the "mixing zone" **evaluation process** can be found at **Michigan.gov/Remediation** (select **Operational Memoranda, Cleanup Requirements, Forms, and Cleanup Program Information** under "Other Useful Information.") The GSI cleanup criteria apply to groundwater sampled from a GSI monitor well, and not to surface water. To view the Part 201 GSI cleanup criteria, go to the Web site above.

6.4.3.c Surface Water Cleanup

Cleanup procedures for releases to state waters may be difficult and may vary depending on the uses being made of the receiving waters. A discharge to water that causes impairment to any of the following is a violation of Section 3109 of Part 31 (Water Resources Protection) of Act 451:

1. Public health, safety, or welfare.
2. Domestic, commercial, industrial, agricultural, recreational, or other uses being made of the water.
3. The value of the riparian land.
4. Livestock, wild animals, birds, fish aquatic life, or plants and the value of fish and game.

Of these water uses, major public health concerns exist if the discharge could impact downstream recreational beaches or surface water drinking water supply intake systems.

EGLE requires that all appropriate and reasonable steps be taken to clean up and prevent further pollution in consideration of existing conditions of state waters. Remember, in the event of a release to state waters, including releases to public storm sewers and drains, immediately contact:

- Your **EGLE District Office** or the Pollution Emergency Alerting System (PEAS) hotline at 800-292-4706 (in state) or 517-373-7660 (out-of-state).
- Your primary public answering service, or 911.

Release response is chemical-, location-, and action-specific. Some hazardous substances are water-soluble and mix immediately with the surface water. When water-soluble substances are released, a reasonable course of action may require large quantities of contaminated water to be captured, removed, contained, and properly treated and/or disposed. Large releases requiring the use of floating booms, skimmers, storm sewer plugs, etc. will likely require a release response contractor, whereas small releases may travel downstream before any response can contain them. The longer the released substance remains in the water, even if contained by booms, the more contamination diffuses or mixes with the surface water, which may result in increased environmental harm and liability. Therefore, release prevention instead of cleanup can yield tremendous cost savings.

Release prevention includes having a response plan in place, with trained responders and equipment easily available, for immediate containment of any release. Some generic release response equipment to keep on-site may include absorbent booms and pads, thick plastic bags, sandbags, cat litter, portable emergency pumping and containment equipment, protective clothing, and safety gear suitable for on-site materials and hazardous chemical exposure conditions. It is also recommended that you know the route of your storm sewer system and appropriate areas (such as the last storm water catch basin on your site) to catch and contain releases. Consider how to respond if a spill should occur during either dry or wet weather, and how to divert storm water from a spill that occurs during wet weather. Talk with an environmental response consultant or EGLE about which containment and cleanup methods may be best for your business. To research environmental innovative treatment technology options, go to **EPA Clu-In** at **http://clu-in.org/**.

When contaminated groundwater is venting or discharging (i.e., flowing naturally) into surface waters, the Part 201 of Act 451 GSI Cleanup Criteria must be applied (see Chapter 6.4.3.b - Groundwater Cleanup).

6.4.3.d PCB Clean Up

Polychlorinated biphenyls (PCBs) are **hazardous substances- Part 201** that must be addressed under the federal and/or state corrective or remedial action process and, in some cases, in coordination with the U.S. EPA Region 5. Part 201 of Act 451 Cleanup Criteria have been developed for PCBs on the basis of media (i.e., air, soil or water) exposure pathway, land-use-specific, and must be applied for corrective action, pursuant to R 299.9629 of Part 111 (Hazardous Waste Management) of Act 451. However, to address exposures via the soil direct-contact pathway, the applicability of the Toxic Substances Control Act (TSCA), at 40 CFR 761 must be determined and applied appropriately (see Part 201 of Act 451 Cleanup Criteria tables, footnote [T]). The Part 201 of Act 451 Cleanup Criteria can be found at

Michigan.gov/Remediation under the "Other Useful Information" heading, select "Cleanup Criteria Requirements for Response Activity." If TSCA is determined to apply to an area with PCB contamination, all TSCA obligations must be addressed in coordination with the U.S. EPA Region 5. A state Remedial Action Plan cannot be considered complete without a demonstration of compliance with all TSCA obligations. If you need further information or assistance, please contact the Remediation Division in your EGLE District Office. See Chapter 4.5 for specific details on TSCA obligation related to remediation waste.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common air regulations topics

SARA Title III Program
517-284-SARA (284-7272) | **EGLE-sara@michigan.gov**
Michigan.gov/SARA | Michigan.gov/ChemRelease | Michigan.gov/EGLEEmergencyPlan

- Michigan Facilities' Guide to SARA Title III, Emergency Planning and Release Reporting

Emergency response planning and training
Michigan State Police, Emergency Management and Homeland Security Division
517-284-3727 | **Michigan.gov/emhsd-training**

- Critical Incident Protocol — A Public and Private Partnership

Pollution Incident Prevention Plans (PIPP)
EGLE, Part 5 Rules Program, District Staff: **www.michigan.gov/part5**

- PIPP and Part 5 Rules Informational Packet
- PIPP Completion Checklist
- Part 5 Rules Operational Guidance (POG) clarifying oil requirements

Oil Pollution Prevention: Facility Response Plans (FRP) and Spill Prevention, Control, and Countermeasures (SPCC) Plans
U.S. EPA Region 5, Office of Emergency Management
epa.gov/oil-spills-prevention-and-preparedness-regulations

Risk Management Plans
U.S. EPA Region 5, Office of Emergency Management
www.epa.gov/emergencies/content/rmp

Storm water pollution prevention plans (SWPPP) and surface water cleanup
EGLE, Storm Water Program: 517-284-5567 | **Michigan.gov/IndustrialStormwater**

- SWPPP Template (Word), SWPPP Template (PDF)
- SWPPP sample
- SWPPP Checklist (Word), SWPPP Checklist (PDF)

Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements
MIOSHA: 517-322-1608 | **Michigan.gov/miosha**

Hazardous/non-hazardous waste characterization and disposal information
EGLE, Hazardous Waste Program: 800-662-9278 | EGLE District Office
Hazardous and Liquid Industrial By-product Management at **Michigan.gov/EGLEwaste**

- Waste Webinar Series
- Hazardous Waste Emergency Information (EQP 3472) poster for Small Quantity Generators
- Contingency Plan and Emergency Procedures for Large Quantity Generators
- Personnel Training Requirements for Fully Regulated Generators of Hazardous Waste

Release of hazardous materials during transportation
U.S. Department of Transportation (US DOT): 800-467-4922 | **phmsa.dot.gov/hazmat**

- USDOT Hazardous Materials Incident Report
- Incident Report - Gas Distribution System (RSPA F 7100.1)
- Incident Report - Gas Transmission and Gathering Systems (RSPA F 7100.2)
- Accident Report - Hazardous Liquid Pipeline Systems (DOT Form 7000-1)

Releases from oil and gas production fields
EGLE, Oil, Gas, and Minerals Division: 517-284-6823 | **Michigan.gov/EGLEOilGasMinerals**

- Report of Loss or Spill (EQP 7233)

Report of discharge of untreated sewage
EGLE District Office | **Michigan.gov/ChemRelease**

- Report of Discharges of Untreated or Partially Treated Sewage (EQP 5857)

Releases from leaking underground storage tanks
LARA, Storage Tank Program: 517-241-8847 | **Michigan.gov/StorageTanks**

Environmental Investigation, Cleanup, Release Reporting
EGLE, Remediation and Redevelopment Division: 517-284-5099 | District Offices
Michigan.gov/EGLERemediation

- Release Reporting Forms

Federal environmental investigation guidance including information about Phase I and II environmental site assessments (ESAs)
U.S. EPA | **http://clu-in.org**
American Society for Testing and Materials (ASTM) | **www.astm.org**

APPENDIX 6-A: SUMMARY OF COMMON ENVIRONMENTAL RELEASE PREVENTION AND RESPONSE PLANS

DETAIL	Hazardous Waste Contingency Plan (Chapter 6.2.1)	Pollution Incident Prevention Plan (Chapter 6.2.2)	Spill PCC (Chapter 6.2.3)	SWPPP (Chapter 6.2.4)	Emergency Action Plan (Chapter 6.2.6)	Risk Management Plan (Chapter 6.2.5)
Regulated Substance or Activity	Hazardous waste	Salt and Polluting Materials listed in R 324.2009 See SPCC for oils	Oil-EPA (PCBs see 6.2.3)	Companies with a storm water discharge permit	Flammable and combustible liquids	Substances listed in **Section 112(r)** of CAA[5]
Regulation	40 CFR 265.50-.56 Part 111 of Act 451 R 299.9306 (generators)	Part 31 of Act 451 R 324.2001-2009	40 CFR 112	40 CFR 122-124 Part 31 of Act 451 R 323.2161	FL/CL Rules **R 29.5201 - 29.5255** and adopted NFPA pamphlet number 30 2000 edition Chapter 5	Section 112(r) of Clean Air Act 40 CFR 68 (requirements vary depending on the program subject to).
Administering Agency	EGLE, HWP[7]	EGLE, WRD	U.S. EPA, Chemical Emergency Preparedness & Prevention Section	EGLE WRD	EGLE	U.S. EPA
Who Must Prepare	Large quantity generators of hazardous waste must submit a written plan. Small Quantity generators are to post information. Hazardous waste transporters and treatment, storage, & disposal facilities have other planning requirements.	Companies with **salt** or other **polluting materials** that meet or exceed threshold planning quantities & don't meet listed exemptions. When EGLE deems necessary.	If a release could potentially reach navigable waters or shorelines *and* facility has capacity storage of oil that: • exceeds 1,320 gal. for all above ground storage, or • exceeds 42,000 gal. for underground storage tank	Companies required to have a storm water discharge permit	Companies that have flammable and combustible liquids that are not exempted	Facilities with a substance identified in **Section 112(r)** of the CAA at or above a specific threshold quantity. Listed substances are located on the **"List of Lists"**

Michigan Guide to
Environmental Regulations

Chapter 7

SITES OF ENVIRONMENTAL CONTAMINATION

CHAPTER 7: SITES OF ENVIRONMENTAL CONTAMINATION, PROPERTY TRANSFERS, AND LIABILITY ISSUES

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

Michigan has long been a state of substantial industrial activity. While this industry provided the basis for much of Michigan's economic strength, the long-term environmental effects of many historical industrial processes and practices were not understood. Activities that we now know to cause environmental problems were unfortunately commonplace and many historical commercial and manufacturing facilities are sites of environmental contamination. Many of the sites of environmental contamination are abandoned, idle, or under-utilized industrial and commercial properties, often referred to as "brownfields." Revitalization of brownfields to achieve a healthier, cleaner, and more productive environment for Michigan's citizens is critically important. This chapter focuses on the obligations of owners and operators of sites of environmental contamination, including liability protection and obligations to assure the safe use of the property, commonly referred to as "Due Care."

Note: Appendix B of this guidebook contains definitions of the various regulated groups of material found in this chapter. These defined terms appear throughout this chapter in bold lettering. In some instances, multiple agencies use the same term to describe a regulated group of material; however, its definition differs. Such terms will be followed by a dash and the acronym of the defining agency or regulation (e.g., **hazardous substance-CERCLA and hazardous substance-Part 201**).

AGENCIES AND THEIR LAWS AND RULES

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) administers programs that involve the remediation and redevelopment of contaminated properties. The primary legislative authorities for the state cleanup programs are Part 201 (Environmental Remediation) and Part 213 (Leaking Underground Storage Tanks) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). These state programs have a unique, causation-based liability scheme, land use-based requirements, and a strong emphasis on redevelopment and reuse of contaminated property. Part 201 and Part 213 of Act 451 and the Part 201 Administrative Rules are available at **Michigan.gov/EGLERRD**.

EGLE also manages portions of the federal Superfund program, established under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Additional information regarding implementation of the Superfund program is available at **Michigan.gov/EGLERRD.**

If the contamination on your property is regulated under Part 111 (Hazardous Waste Management) of Act 451, contact the Waste and Hazardous Materials Division for guidance on the applicability of Part 201 and/or Part 213 of Act 451 provisions to your property. For more information regarding the regulation of hazardous waste, see Chapter 2.4 "Hazardous Waste."

If your property includes oil, gas, or mineral wells regulated under Part 615 or Part 625 of Act 451, contact EGLE at 517-284-6828 for guidance on the applicability of Part 201 and/or Part 213 of Act 451 provisions to your property.

7.1 BACKGROUND

Earlier decades of industry and manufacturing practices have left some properties in Michigan environmentally degraded, contaminated with heavy metals, organic and inorganic chemicals, and/or petroleum based hazardous substances, and containing dilapidated buildings and debris. Expansion or redevelopment of these properties is hindered or complicated by real or perceived environmental conditions. These properties present challenges to potential developers, whether contamination is discovered or suspected. Parts 201 and 213 of Act 451 encourage solutions to historical contamination while protecting human health with several incentives for redevelopment, including causation-based liability and liability protection for new owners or operators.

Michigan's pre-1995 environmental cleanup and redevelopment efforts were constrained by strict liability laws. Prior to 1995, if a person purchased contaminated property, they acquired liability for the contamination and the obligations to address the contamination. The June 5, 1995, amendments to Part 201 of Act 451 and the March 6, 1996, amendments to Part 213 of Act 451 substantially modified provisions of the law regarding liability for environmental contamination. An owner or operator of a site of environmental contamination is liable for remediation of the environmental contamination if the owner or operator is responsible for an activity causing a release or threat of release. If an owner or operator acquires a site of environmental contamination regulated under Part 201 after June 5, 1995, they may conduct and submit to EGLE a baseline environmental assessment (BEA) to obtain liability protection for the contamination at the property at the time they become the owner or operator. Likewise, if an owner or operator acquires a site of environmental contamination regulated under Part 213 after March 6, 1996, a BEA may be conducted and submitted to EGLE to obtain liability protection. Under both Part 201 and Part 213, owners or operators of sites of environmental contamination, regardless of liability, must exercise due care with respect to the contamination on the property. Owners and operators are defined by Part 201 and Part 213 of Act 451. A party leasing property would generally have control or be responsible for the property and be defined as an operator.

A BEA is an evaluation of environmental conditions that exist at a property at the time of purchase or occupancy, that reasonably defines the existing conditions and circumstances at the property. Compliance with due care obligations includes measures taken to ensure that existing contamination on a property does not cause unacceptable human health risks. BEA and Due Care obligations are described in Chapter 7.2 and 7.3.

Part 201 and Part 213 of Act 451 have disclosure requirements for property transfers. A person who has knowledge or information, or is on notice through a recorded instrument, that a parcel of real property is a Part 201 or Part 213 site of environmental contamination must provide written notice to a purchaser or other persons to which the property is transferred. The notice must advise that the property is a Part 201 or Part 213 site of environmental contamination and disclose the general nature and extent of the contamination.

Information regarding the obligations of an owner or operator of a Part 201 of Act 451 site of environmental contamination is contained in Chapter 6.4 "Release Response and Cleanup." Information regarding the obligations of an owner or operator of a Part 213 of Act 451 site of environmental contamination is contained in Chapter 4.3 "Storage Tanks."

MICHIGAN BROWNFIELD REDEVELOPMENT PROGRAM

Revitalizing and redeveloping contaminated properties protects the environment, reuses existing infrastructure, minimizes urban sprawl, and creates economic opportunities. EGLE's Remediation and Redevelopment Division provides financial and technical assistance including grants, loans, tax increment financing, and free site assessments to facilitate the redevelopment of brownfield properties. For more information, visit **Michigan.gov/EGLEBrownfields**.

7.2 DUE DILIGENCE AND BASELINE ENVIRONMENTAL ASSESSMENTS

7.2.1 DUE DILIGENCE

Due Diligence is the act of making an appropriate inquiry as to whether environmental contamination is present on a piece of property. The prospective owner or operator of commercial or industrial properties should undertake all appropriate inquiry to determine how the property was used and whether/what activities involving the use of hazardous substances occurred. The initial step in demonstrating due diligence is to request disclosure from the seller or owner about any known environmental conditions. The next step is to conduct an environmental assessment of the property.

The federal All Appropriate Inquiry (AAI) standard or the American Society for Testing and Materials (ASTM) Phase I and II Environmental Site Assessment (ESA) (ASTM E1527-13 and E1903) standards or equivalent can be used as guidance (available at **astm.org**). The Phase I ESA involves physically inspecting the property, examining historical records such as deed and property tax records, a review of regulatory agency files (local and state), historical maps, and present/past property uses to evaluate the potential for contamination to exist. The Phase I ESA walk-through of the property can identify potential contamination sources such as abandoned containers, aboveground storage tanks, or underground storage tanks. The AAI or the Phase I ESA report will conclude with a list of Recognized Environmental Conditions (REC). An environmental professional can assist in determining if it is necessary to proceed to a Phase II ESA. The Phase II ESA involves further investigation into the RECs, including collecting soil, groundwater, or vapor samples, and confirming if underground tanks are present.

The information gained in the AAI or Phase I and II ESAs is used to determine whether the property is a facility under Part 201 or a site or a property under Part 213. The concentration of hazardous substances at the property is compared to the residential criteria or risk-based screening levels (RBSLs), the state's most protective cleanup levels, provided in R 299.1-R 299.50. If the contaminant concentrations do not exceed the residential criteria or RBSLs, then the property is not a facility or a property as defined by Act 451. Documentation of this conclusion should be maintained by the new owner or operator to show that they have conducted due diligence in accordance with Section 20126(3)(h) or Section 21323a(3)(g) of Act 451. If the contaminant concentration does exceed one or more residential criteria or RBSLs, then the property is a facility or property as defined by Act 451. Potential owners or operators are strongly urged to discuss conducting and submitting a BEA with their environmental consultants and their attorneys. There may be other options for resolving potential liability in certain circumstances.

7.2.2 BASELINE ENVIRONMENTAL ASSESSMENTS (BEAS)

The purpose of the BEA is to provide the new owner or operator liability protection for known and unknown contamination under specific parts of Act 451:

- Part 201 (Environmental Remediation)
- Part 213 (Leaking Underground Storage Tanks)
- Part 31 (Water Resources Protection)
- Part 17 (Michigan Environmental Protection Act)
- Part 615 (Supervisor of Wells)
- Part 625 (Mineral Wells)

A BEA does not provide protection from liability under other state and federal laws, including:

- Landfills regulated under Part 115 of Act 451.
- Treatment, Storage, and Disposal facilities regulated by the federal Resource Conservation and Recovery Act and Part 111 (Hazardous Waste Management) of Act 451.
- Underground storage tank operational requirements under Part 211 of Act 451.
- Federal CERCLA and Superfund. The United States Environmental Protection Agency (U.S. EPA) and EGLE have entered into an agreement that the U.S. EPA will not take action against a person who has done a BEA unless the facility is on the federal National Priority List, federal funds have been spent to respond to conditions at the facility, or there is an imminent danger to public health, safety, welfare, or the environment.

Part 201 and Part 213 of Act 451 and BEA guidance is available at **Michigan.gov/BEA**.

BEA General Information

The BEA report will consist of summary of an AAI in compliance with 40 CFR 312 (2014) or an ASTM Phase I ESA, sufficient sampling and analysis to confirm the property is a facility as defined by Section 20101(1)(r), or a site as defined by Section 21303(l) or a property as defined by Section 21303(d), and documentation of the property identification. The U.S. EPA has determined that the ASTM Phase I ESA is acceptable and complies with AAI. The AAI compliant report or ASTM Phase I ESA (E1527-13) is acceptable for the BEA process.

The former requirements to identify the future hazardous substance use and to provide a means to differentiate a new release of that hazardous substance from existing contamination have been eliminated from the BEA process. A person may still want to establish a means to distinguish a new release, but that will be a business decision rather than a BEA requirement. The contents of a BEA are included as the third page of the BEA submittal form, form EQP4025, but is not required to be submitted as part of the submittal form. The form is available at **Michigan.gov/BEA.**

BEA Time Frames

A BEA can be conducted and submitted to EGLE any time prior to purchase but must be conducted not later than 45 days after becoming the owner or operator. This means field work and sample analysis must be completed, conclusions drawn, and the BEA report written. The BEA must be submitted to the EGLE District Office for the county in which the property is located. The submission must occur within six months of the date of becoming the owner or operator or of the date of foreclosure. The BEA must also be submitted to subsequent purchasers or transferees, including lessees, prior to transfer of the interest in the property. EGLE encourages early submittal of BEAs whenever possible.

Environmental Consultants

Environmental consultants can be located by an internet search using the terms Environmental, Ecological, or Engineering; or by asking your financial institution for referrals. To increase the odds of hiring a good consulting firm, ask the consultant for prior job references and/or information concerning previous BEAs they have conducted. EGLE does not recommend or endorse the services or products of any particular company; however, we do provide a directory of environmental consultants as a service to Michigan business and residents. This directory, as well as guidance on choosing a consultant is available at Michigan.gov/EnvironmentalAssistance.

7.3 "DUE CARE" OBLIGATIONS

Section 20107a of Part 201 and Section 21304c of Part 213 of Act 451 requires that owners and operators of contaminated property take measures to ensure the existing contamination does not cause unacceptable human health risks. Such measures include evaluating the contamination and taking necessary response or corrective actions to mitigate unacceptable exposures. Due care obligations are not related to the owner or operator's liability for the contaminants; they apply to non-liable parties and liable parties alike. The due care obligations are designed so contaminated properties can be safely used.

An owner or operator of a site of environmental contamination must prevent exacerbation of the existing contamination. Exacerbation occurs when an activity undertaken by the person who owns or operates the property causes the existing contamination to migrate beyond the property boundaries and increase response costs for a liable party.

Owners and operators must exercise due care by undertaking response activities or corrective actions that are necessary to prevent unacceptable exposure to contamination. The existing contamination must be evaluated to determine if the people using, working, or visiting the property would be exposed to contamination at levels above the criteria or RBSLs appropriate to the use of the property. Criteria or RBSLs for differing land uses can be found in the Part 201 Administrative Rules (R 299.1-R 299.50). For example, if groundwater used for drinking at the property is contaminated above the drinking water criteria, then the owner and operator must

provide an alternative water supply. If soils are contaminated above the direct contact criteria or RBSLs for the appropriate land use then people must be prevented from coming into contact with the contaminated soils by restricting access (e.g., installation of a fence), installing a protective barrier, or removing contaminated soil. Protective barriers may be clean soil, concrete, or paving.

In some instances, remediation of the contamination may be the most cost-effective response or corrective action. In addition, if there is a potential unacceptable risk due to the presence of contamination for utility workers or people conducting activities in an easement, then utility and/or easement holders must be notified in writing of the conditions by the owner or operator. If there is a fire and explosion hazard, the local fire department must be notified, and immediate actions taken by the owner or operator to mitigate the situation.

An owner or operator must take reasonable precautions or steps needed to prevent exposure to an unacceptable risk to a third party. This might include notifying contractors of contamination, so they can take proper precautions; preventing trespass that would result in an unacceptable exposure (e.g., children playing in a vacant lot that has direct contact hazards); or taking actions to secure abandoned containers so they do not get damaged by traffic.

Owners and operators must maintain documentation that they have conducted an adequate evaluation to determine the need for response or corrective actions and that they have taken or conducted all necessary actions to mitigate unacceptable exposures and assure the property is safe. If applicable, maintenance, repair, and monitoring of existing exposure barriers, vapor mitigation systems, etc. must be conducted and documentation maintained. The documentation does not need to be submitted to EGLE but must be available for EGLE to review upon request no later than within eight months of becoming the owner or operator or of having knowledge that the property is contaminated. Documentation requirements are described in the Administrative Rules: Property Owner or Operator Obligations Under Section 20107a of the Act (R 299.51007-R 299.51021). Both Part 201 and Part 213 allow an owner or operator to submit and request an EGLE review of a Documentation of Due Care Compliance (DDCC). A DDCC is a report document (not a plan) that contains sufficient information to demonstrate that an adequate evaluation of the risks was conducted, that any response or corrective actions to mitigate unacceptable exposures have been undertaken, that the response or corrective actions are effectively preventing unacceptable exposures, and all required notices were provided and received. The evaluation is based on the current property conditions, current use of the property, and current applicable criteria or RBSLs or site-specific criteria or site-specific target levels.

The rules require notification to EGLE and others in the following circumstances:

1. Notify EGLE and adjacent property owners using the "*Notice of Migration of Contamination Form*" (EQP 4482) if contaminants are migrating off the property [Rule 1017].
2. Notify EGLE using the "*Notice Regarding Discarded or Abandoned Containers Form*" (EQP 4476) if there are discarded or abandoned containers that contain hazardous substances-Part 201 on the property [Rule 1015]. Underground storage tanks regulated pursuant to

Part 211, Underground Storage Tanks of Act 451 and aboveground storage tanks regulated pursuant to NREPA; and the Michigan Fire Prevention Code, 1941 PA 207, as amended, are not considered to be abandoned.

3. Notify the local fire department if there are fire or explosion hazards [Rule 1019].
4. Notify utility and easement holders if contaminants could cause unacceptable exposures and/or fire and explosion hazards [Rule 1013(6)].

In order to maintain compliance with Part 201, Section 20107a, the Notice of Migration of Contamination must be submitted by a current owner or operator no later than 45 days of becoming owner or operator, or of having knowledge of the conditions. Notice Regarding Discarded or Abandoned Containers must be made within 45 days of becoming the owner or operator, or of having knowledge of the conditions. Notice to the local fire department if there are fire or explosion hazards is required to be made immediately to the local fire department; if the condition is not permanently abated, then, within 7 days after notice to the local fire department, the owner or operator shall provide written notice to EGLE. Notice to utility and easement holders if contaminants could cause unacceptable exposures and/or fire and explosion hazards is required to be provided as soon as the situation is known to exist. Persons required to provide notice under Section 21309a(3) of Act 451, but who have not yet made that notice in compliance with Part 213 should do so as soon as possible. Part 201 and the Administrative Rules: Property Owner or Operator Obligations Under Section 20107a of the Act (R 299.51007-R 299.51021), Part 213 of Act 451, the notification forms, and additional guidance are available at **Michigan.gov/EGLEDueCare**.

Part 201 and Part 213 provide limited exemptions to some of the due care obligations. For example, an owner or operator of contaminated property is exempt from complying with Section 20107a(1)(a-c) or Section 21304c(1)(a-c), when the sole source of the contamination on the property is from contamination migrating onto the property. This exemption does not include new releases caused by the owner or operator on their property. While the exemption may be applicable, it may be in the owner or operator's best interest to ensure the property is safe for the intended use.

7.4 SUMMARY

This document provides a summary of the BEA process and due care obligations. A thorough review of the statutes, administrative rules, and EGLE guidance should be completed before making site-specific decisions. The field staff located at EGLE District Offices statewide (see Appendix C) are the first line of contact for Part 201 and Part 213 of Act 451 programs.

Further information, including publications and forms, are available from Michigan.gov/BEA or Michigan.gov/EGLEDueCare, by contacting an EGLE District Office, or by calling 800-662-9278.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common remediation topics

Protecting public water supply systems that use groundwater from potential sources of contamination

EGLE, Wellhead Protection Program: 517-284-6519 | **Michigan.gov/EGLEwhp**

Property transfers, due care, and liability protection measures

EGLE District Office
Michigan.gov/EGLERemediation | Michigan.gov/BEA | Michigan.gov/EGLEDueCare

- Environmental Cleanup Part 201 Citizen's Guide: What You Need to Know if you Own or Purchase Property with Environmental Contamination
- EGLE-RRD BEA Guide
- BEA Submittal Form (EQP4025)
- EGLE-RRD Due Care Guide
- Documentation of Due Care Compliance Submittal Form (EQP4402)
- Documentation of Due Care Compliance Content
- Response Activity Plan to Comply with 7a(1)(b) or 7a(2)(b) (EQ4382)
- Response Activity Plan to Undertake Response Actions to Mitigate Unacceptable Exposures and Achieve Compliance with Section 20107a(1)(b) Content
- Notice of Migration Guidance
- Notice of Migration Form (EQP4482)
- Instructions for Notice Regarding Abandoned or Discarded Containers Notice Regarding Discarded or Abandoned Containers (EQP4476)
- Q & A: BEAs, Foreclosures and Receiverships
- Administrative Rules – Property Owner or Operator Obligations Under Section 20107a of the Act Addresses for Submittals

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Superfund Program

EGLE, **Superfund Program Staff: Michigan.gov/EGLESuperfund**

Michigan Guide to
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Chapter 8

LAND/WATER INTERFACE ACTIVITIES

CHAPTER 8: LAND/WATER INTERFACE ACTIVITIES

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

Manufacturers often conduct activities at or near locations where the land meets the water, often referred to as the land/water interface. Many construction activities conducted in or near wetlands, ponds, inland lakes, streams, floodplains, Great Lakes, sand dunes, or other such environmental features are regulated by the state and require authorization by the Michigan Department of Environment, Great Lakes and Energy (EGLE) prior to completion. Review of this chapter may be beneficial to ensure that you are complying with state and federal laws regarding land/water interface resources, even if there are no site improvements currently under consideration

AGENCIES AND THEIR LAWS AND RULES

EGLE's Water Resources Division (WRD) administers several parts of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451), that regulate activities that are on, within, or involve any of the following land/water features:

- A 100-year floodplain or floodway (Part 31)
- A stream, river, ditch, drain, channel, or canal (Part 301)
- An inland lake (Part 301)
- Land change activities that result in the creation or alteration of a canal, ditch, lagoon, pond, or lake within 500 feet of an existing inland lake or stream (Part 301)
- A wetland (Part 303)
- A dam (Part 315)
- A Great Lake (Part 325)
- High-risk erosion areas, critical dune areas, and environmental areas in coastal counties (parts 323 and 353)

The U.S. Army Corps of Engineers (USACE) also regulates some of the above activities at the federal level if they are located within a navigable water identified in Section 10 of the federal Rivers and Harbors Act and wetlands directly adjacent to these waters. To simplify the permit process for Michigan's residents, the WRD has developed an "**EGLE/USACE - Joint Permit Application**" (**Michigan.gov/JointPermit**) process with the USACE to jointly regulate activities at or near the land/water interface (Chapter 8.9).

The WRD administers several other Parts of Act 451 that require a separate permitting process:

- **Aquatic Nuisance Control** (Part 33 of Act 451) regulates herbicide or pesticide application to lakes or ponds. This includes water treatment ponds for cooling or settling or ponds equipped with fountains for aesthetic purposes. Information can be found at **Michigan.gov/ANC**.
- Soil Erosion and Sedimentation Control (Part 91 of Act 451) provides for the control of soil erosion and protects adjacent properties and the waters of the state from sedimentation. A permit is generally required for any earth change activity which disturbs one or more acres of land, or which is within 500 feet of a lake or stream. This statute authorizes county and local enforcing agencies to issue the permits. The authorized permitting agencies for each county are available at **Michigan.gov/SoilErosion**. Authorized agencies have inspectors certified by EGLE. Information on training to obtain Comprehensive Soil Erosion & Sedimentation Control (SESC) Certification is also available at **Michigan.gov/SoilErosion**.
- Construction activities that disturb one or more acres of land and have a point source discharge of storm water to the waters of the state require federal NPDES permit coverage as described in Chapter 3.2.3.b.
- **Large Quantity Water Withdrawal** (Part 327 of Act 451): defines a large quantity water withdrawal as 70 gallons or more of total pump capacity and offers a tool to determine if your project requires a permit from the WRD. Visit **Michigan.gov/WaterUse** for more information on Large Quantity Water Withdrawal. This is also addressed more fully in Chapter 9.3.

8.1 INTRODUCTION

The "**EGLE/USACE - Joint Permit Application**" covers permit requirements derived from state and federal rules and regulations for construction activities where the land meets the water. This Joint Permit prevents duplication of state and federal permitting and provides simultaneous review for activities regulated by the parts of Act 451 summarized in this chapter. The Joint Permit Application is submitted through WRD's permitting site, MiWaters.

For more information on MiWaters, refer to Chapter 3.1.1 or visit **Michigan.gov/MiWaters**.

Pre-application meetings for proposed impacts to inland lakes, streams, wetlands, and critical dune areas are available upon request. This pre-application meeting with district permit staff ensures that a complete and accurate application is submitted that avoids and/or minimizes potential impacts and proposes mitigation when resource impacts are unavoidable. There is a fee for the pre-application meeting, with the exception of in-office meetings regarding single-family residential lots less than one (1) acre in size. See the online pre-application meeting form for a fee schedule.

The WRD district offices review permit applications, conduct site inspections, and issue permits for regulated activities covered on the Joint Permit Application. Technical assistance and permit review negotiations conducted by field staff minimize negative impacts to natural resources from new development. District staff may make a site inspection, collect comments, or ask for modifications to the proposal. It may take ninety days or more to receive a decision on a permit application. District offices also respond to complaints and conduct compliance activities. District staff can answer questions regarding the application, MiWaters, and regulations.

Find out more about applying for a Joint Permit at **Michigan.gov/JointPermit.**

8.2 PART 31 OF ACT 451: WATER RESOURCES PROTECTION, FLOODPLAIN REGULATORY AUTHORITY

A Part 31 permit is required for any occupation, construction, filling, or grade change below the 100-year floodplain elevation of a river, stream, or drain with a drainage area of two square miles or more, regardless of whether the floodplain is mapped by FEMA. Part 31 requires that the channel and floodway are kept clear of obstructions and uninhabited and that structures placed in the floodplain are properly protected from flood damage. The floodway includes the stream channel and that portion of the floodplain that is required to convey the flow of floodwater. Projects within the floodway will typically require hydraulic modeling to demonstrate the project will not cause increased flooding at other properties. Structures that are placed within the 100-year floodplain must have their lowest floor, including basement, elevated 1-foot above the 100-year floodplain elevation. The state Building Code also contains additional floodplain development standards. Visit **Michigan.gov/FloodplainManagement** for more information.

Flood Insurance Requirements

Many cities and townships within Michigan participate in the National Flood Insurance Program (NFIP). Those communities usually have a Flood Insurance Rate Map. If your site is located in the floodplain area (frequently designated as an "A Zone"), the requirements are that any new or substantially improved structure must have its first floor, including the basement, elevated above the 100-year floodplain elevation or floodproofed to the elevation of the floodplain. Floodproofing must be done in a manner that the building is watertight and able to withstand hydrostatic pressures up to the 100-year floodplain elevation. Flood insurance is required for any federally backed mortgage within the FEMA mapped floodplain regardless of whether a community participates in the National Flood Insurance Program (NFIP) or not. FEMA flood insurance is only available to property owners and renters within communities that participate in the NFIP. If the community participates, anyone within that community can purchase flood insurance regardless of whether they are located within the mapped floodplain or not. NFIP communities regulate all man-made changes within the FEMA mapped floodplain. More information on flood insurance is available at **floodsmart.gov**.

8.3 PART 301 OF ACT 451: INLAND LAKES AND STREAMS

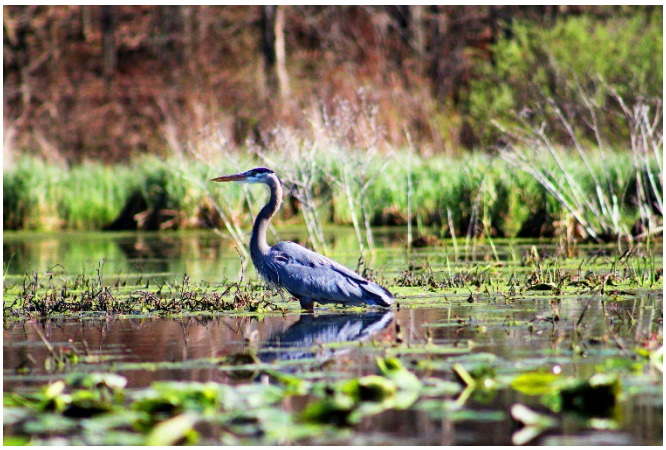
The intent of the Inland Lakes and Streams Protection Program is to protect the public trust in the inland waters of the state as well as the correlative rights of riparian owners. Activities that disturb land below the ordinary high-water mark require a Part 301 permit. Examples of common projects that require a Part 301 permit are road and pedestrian crossings, utility crossings, stormwater outfalls -- with or without streambank or streambed protection (riprap) --, stream relocations, and enclosures.

A Part 301 permit is required for the following activities below the ordinary high-water mark of all inland lakes and streams:

- Dredge or fill bottomlands.
- Construct, enlarge, extend, remove, or place a structure on bottomland.
- Construct, enlarge or expand a marina.
- Create, enlarge, or diminish an inland lake or stream.
- Structurally interfere with the natural flow of an inland lake or stream.
- Construct, dredge, commence, extend, or enlarge an artificial canal, ditch, lagoon, pond, lake, or similar waterway through which the purpose is ultimate connection with an existing inland lake or stream, or where any part of the artificial waterway is located within 500 feet of the ordinary high-water mark of an existing inland lake or stream.
- Connect any natural or artificially constructed waterway, canal, channel, ditch, lagoon, pond, lake, or wetland with an existing inland lake or stream for navigation or any other purpose.

Under Part 301, a stream is defined as a waterbody that has definite banks, a bed, and visible evidence of a continued occurrence of water. This Part does not include the Great Lakes, Lake St. Clair, or a lake or pond that has a surface area of less than five (5) acres. An inland lake or stream can also be a natural or artificial feature, including drains or impoundments.

8.4 PART 303 OF ACT 451: WETLANDS PROTECTION



Part 303 is intended to protect the functions and values wetlands provide such as flood and storm control, wildlife habitat, clean subsurface water resources, pollution treatment, erosion control, nutrient cycling, and economic and educational services. The following activities are prohibited in wetlands unless a Part 303 permit has been obtained from EGLE:

- Deposit or permit the placing of fill material in a wetland.
- Dredge, remove, or permit the removal of soil or minerals from a wetland.
- Construct, operate, or maintain any use or development in a wetland.
- Drain surface water from a wetland.

Regulated wetlands are defined in Part 303 and associated administrative rules. Part 303 defines a wetland as *"land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh."* The definition applies to public and private lands regardless of zoning or ownership. In addition, wetlands regulated by the state are one of the following:

- Connected to, or located within 1,000 feet of, one of the Great Lakes or Lake St. Clair.
- Connected to, or located within 500 feet of, an inland lake, pond, river, or stream.
- Not connected to one of the Great Lakes or Lake St. Clair, or an inland lake, pond, stream, or river, but are more than 5 acres in size.
- Has the documented presence of an endangered or threatened species under Part 365 or the Endangered Species Action of 1973, Public Law 93-205.
- Is a rare and imperiled wetland

Wetlands Identification

While wetland inventory maps and other online tools are helpful in determining the potential for wetlands, an on-site investigation is required to identify wetlands on a property. EGLE's Wetland Identification Program (WIP), is a fee-based program that offers two levels of service to identify wetland and upland areas on a property. For a Level 2 Identification, a Wetlands Specialist conducts an on-site review to determine the presence or absence of wetlands, and physically marks the wetland

boundaries in the field. A Wetlands Specialist can also provide a Level 3 Identification, which is an on-site review to confirm specific wetland boundaries marked by a wetland consultant. Both levels of service include a letter and map from EGLE summarizing the findings, which is guaranteed for a period of three years. Individuals interested in WIP services must submit a WIP application to the WRD, Wetlands, Lakes and Streams Unit. The WIP application and a fee calculator can be downloaded at **Michigan.gov/Wetlands** or you may call 517-284-5543.

8.5 PART 315 OF ACT 451: DAM SAFETY

Permits are required for dams with a "height" of six feet or more and have an impounded surface area of five acres or more at the Design Flood Elevation (DFE, also know as the Flood Protection Elevation). A permit is required to construct a new dam, enlarge an existing dam or impoundment, repair or alter a dam, remove a dam, abandon a dam, or reconstruct a failed dam. A licensed professional engineer must prepare, sign, and seal the construction plans, except for minor projects as defined in Part 315 or for projects by non-profit organizations under certain circumstances as specified in Part 315.

8.6 PART 323 OF ACT 451: SHORELANDS PROTECTION AND MANAGEMENT

This program provides for the designation and proper management of environmental areas, high-risk erosion areas, and flood risk areas along the Great Lakes shoreline. These areas include coastal wetlands and the adjacent uplands that provide habitat and nursery for fish and wildlife. Information about this program may be found online at **Michigan.gov/shorelands**.

A Part 323 permit is required for any of the following activities in a designated Environmental Area:

- Dredging, filling, grading, or other alterations of the soil.
- Alteration of natural drainage, but not including the reasonable care and maintenance of established drainage.
- Alteration of vegetation utilized for the preservation and maintenance of fish or wildlife, including identified colonial bird nesting areas.
- Placement of permanent structures.

The following counties have designated Environmental Areas:

Alcona	**Bay**	**Emmet**	**Monroe**
Alger	**Charlevoix**	**Houghton**	**Tuscola**
Alpena	**Cheboygan**	**Huron**	**Wayne**
Arenac	**Chippewa**	**Mackinac**	
Baraga	**Delta**	**Marquette**	

A Part 323 permit is required for the construction, installation, or moving of a permanent structure

on a parcel of land where any portion is a designated High-Risk Erosion Area. Examples include homes, porches, septic systems, additions, substantial improvements of existing structures, and outbuildings. The **current counties** with designated High-Risk Erosion Areas include:

Alger	**Berrien**	**Houghton**	**Mackinac**	**Ottawa**
Allegan	**Chippewa**	**Huron**	**Manistee**	**St. Clair**
Antrim	**Delta**	**Iosco**	**Mason**	**Sanilac**
Baraga	**Emmet**	**Keweenaw**	**Menominee**	**Van Buren**
Bay	**Gogebic**	**Leelanau**	**Muskegon**	
Benzie	**Grand Traverse**	**Luce**	**Oceana**	

New construction in the 100-year floodplain of the Great Lakes must be elevated to prevent property damage. Forty-one coastal communities have designated flood risk areas mapped and participate in the National Flood Insurance Program, the federal program providing the sole source of flood insurance. These designated communities have approved zoning ordinances and regulate construction in flood risk shorelands locally. Permits are issued by the local unit of government. The WRD oversees performance and provides technical assistance.

8.7 PART 325 OF ACT 451: GREAT LAKES SUBMERGED LANDS

A permit is required for all filling, dredging, and placement of structures (e.g., docks, piers, pilings, etc.) below the ordinary high-water mark and on all upland channels extending landward of the ordinary high-water mark of the Great Lakes, according to the 1985 International Great Lakes Datum. Part 325 also provides for the lease, or deed of state-owned bottomlands of the Great Lakes through the bottomlands conveyance program. Information about the program may be found at **Michigan.gov/EGLEGreatLakes**, then select Submerged Lands.

8.8 PART 353 OF ACT 451: SAND DUNES PROTECTION AND MANAGEMENT

The most unique and fragile sand dunes along the Great Lakes shoreline in Michigan are defined in the **"Atlas of Critical Dune Areas"** prepared by the Michigan Department of Natural Resources. A permit is required for activities that significantly alter the physical characteristics of a Critical Dune Area or for a contour change in a Critical Dune Area. Activities include the construction of a house or garage, building a road or driveway, installing a septic system, installing retaining walls, and sand removal, to name a few. Find more information at **Michigan.gov/CriticalDunes**.

The following counties have designated Critical Dune Areas:

Alger	**Charlevoix**	**Luce**	**Oceana**
Allegan	**Chippewa**	**Mackinac**	**Ottawa**
Antrim	**Emmet**	**Manistee**	**Schoolcraft**
Benzie	**Keweenaw**	**Mason**	**Van Buren**
Berrien	**Leelanau**	**Muskegon**	

Islands that have designated Critical Dune Areas include:

Beaver Island	**North Fox Island**	**North Manitou Island**
High Island	**South Fox Island**	**South Manitou Island**

8.9 SECTION 404 OF THE FEDERAL CLEAN WATER ACT OF 1977 AND SECTION 10 OF THE RIVERS AND HARBORS ACT OF 1899

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged or fill material into waters of the United States, including inland lakes and streams, the Great Lakes, and wetlands, without a permit. Michigan was the first of only two states currently authorized to administer the permit program for the federal government through state law. In most areas of the state, issuance of a permit by EGLE's WRD in accordance with the CWA requirements also authorizes a project under Section 404, and no separate federal permit is required. However, since Section 10 does not provide for similar transfer to states, the U.S. Army Corps of Engineers (USACE) retains Section 404 jurisdiction within those waters that are navigable waters of the U.S. and their adjacent wetlands. Therefore, authorization is also required from the USACE for projects in traditionally navigable waters including the Great Lakes, connecting channels, other waters connected to the Great Lakes where navigational conditions are maintained, and wetlands directly adjacent to these waters. Submittal of a single, completed EGLE/USACE - Joint Permit Application to the WRD ensures that Section 404 permit applications will be processed by all appropriate agencies, including projects that require both EGLE and USACE authorization. For a project that requires authorization under a USACE permit, federal permit issuance is contingent upon EGLE granting Clean Water Act Section 401 Water Quality Certification and, in most cases, Coastal Zone Management Act Section 307 Consistency Certification.

8.10 FEES

The fees for permit applications vary significantly between the various parts of Act 451 and will vary within a Part depending on the scope of the project. General permit and minor project categories are described on the WRD's Web site: **Michigan.gov/JointPermit**. A **current Joint Permit Application fee schedule** is available at the same web site or by calling the appropriate EGLE District Office for the county in which the project will be located. Fees for the soil erosion and sedimentation control permits are established by the county or local agency issuing the permit.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common land/water interface regulation topics

Aquatic plant or algae growth nuisance control - Permit application for chemical treatment
EGLE, WRD, Lakes Michigan and Superior Permits Unit: 517-284-5593 | **Michigan.gov/ANC**

Floodplain Management
Michigan.gov/FloodplainManagement | Floodplain Staff Contacts

Joint Permit application and instructions
Michigan.gov/JointPermit | **EGLE District Office**, Water Resources Division

MiWaters
MiWaters Contacts at **miwaters.deq.state.mi.us**

- MiWaters Training Material
- MiWaters Frequently Asked Questions

Wetlands Identification
Michigan.gov/Wetlands | 517-284-5543.

Michigan Guide to
Environmental Regulations

Chapter 9

DRINKING WATER

CHAPTER 9: DRINKING WATER REGULATIONS

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

Manufacturers are required to supply a safe source of drinking water to their employees that is free from microbial and chemical contamination. Also, many manufacturing activities (such as in the food industry) require safe, potable water for their processes. Most manufacturers in Michigan are customers of a public water system through connection to a municipal or community water supply. However, those plants that supply their own water from a well or surface water source are public water systems (called noncommunity water supplies) and must meet certain drinking water standards. Additionally, these water supplies must meet construction, operational, and sampling requirements. They must also meet both state and local ordinances regarding cross-connection control measures.

Generally, customers who buy water from a community water supply (e.g. the City of Detroit or Grand Rapids) do not have sampling requirements; however, manufacturing complexes that inject chemicals into purchased water or use the water for certain purposes, such as food manufacturing, may have additional requirements. Those requirements are the responsibility of the water supplier. The cross-connection section of this chapter is useful for the protection of your employees (Chapter 9.6).

AGENCIES AND THEIR LAWS AND RULES

In 1974, the U.S. Congress passed the Safe Drinking Water Act. This act gave the U.S. Environmental Protection Agency (U.S. EPA) responsibility for establishing and enforcing drinking water standards nationwide. The Michigan Safe Drinking Water Act, Public Act 399, as amended, (Act 399) was enacted in 1976 and enables the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to maintain direct control over the public drinking water program in the state.

Community, or Type I, public water supplies serve 25 or more residents or 15 or more living units year-round. These water systems are regulated directly by EGLE staff. Noncommunity, or Type II, public water supplies serve 25 persons or more at least 60 days per year, at facilities such as factories, schools, restaurants, campgrounds, churches, etc. (A service connection is defined as "a direct connection from a distribution water main to a living unit or other site to provide water for drinking or household purposes.") EGLE contracts with local health departments to provide technical assistance and administer the noncommunity water supply regulations. Local health departments also provide services for public water supplies that serve less than 25 persons (Type III supplies).

In addition to requirements specific to public water supplies outlined in Act 399, water well construction standards are regulated by Part 127 (Water Supply and Sewer Systems) of the Public Health Code, Public Act 368 of 1978, as amended (Act 368), and Administrative Rules, as amended. Also, when a well is constructed to obtain water to be used solely in a manufacturing process and not for any drinking or sanitary purposes, it is regulated under Part 127. Some examples of this include non-contact cooling water, paper and pulp manufacturing, and certain fabrication operations.

9.1 TYPES OF DRINKING WATER SUPPLIES

There are three types of public water supplies defined in the state of Michigan:

1. Community (Type I) Water Supplies
2. Noncommunity (Type II) Water Supplies
3. Type III Water Supplies

Type 1	Type 2	Type 2	Type 3
Community Water Supply	*Non-Transient* Noncommunity Water Supply	*Transient* Noncommunity Water Supply	Public Water Supply

9.2 COMMUNITY (TYPE I) WATER SUPPLIES

Community (Type I) water supplies provide year-round service to 15 or more LIVING units or 25 or more RESIDENTS. Examples include municipal water systems, apartment complexes, manufactured housing communities and subdivisions on their own water source. Source water for community supplies may be obtained from treating surface water or from groundwater wells. Generally, manufacturers are customers of Type I community water supplies and as such, do not have jurisdiction over the supply itself, just their own distribution systems. A water quality report (Consumer Confidence Report) is prepared by community water supplies annually; contact your local water utility for a copy. A manufacturer that is a customer of a municipal or community water system may have obligations regarding cross-connection control. The supplier of water has local jurisdiction regarding this issue. More information on **community water supply** is available at **Michigan.gov/EGLEWater** (select "Drinking Water" from the menu). If your facility is a customer of a community water supply system, review Chapter 9.6 related to cross-connections.

9.3 NONCOMMUNITY (TYPE II) WATER SUPPLIES

Noncommunity (Type II) water supplies provide service to 15 or more SERVICE CONNECTIONS or 25 or more INDIVIDUALS on an average daily basis of at least 60 DAYS OUT OF THE YEAR. Examples are schools, restaurants, industries, campgrounds, etc., which are on their own water supply, such as a well. Treated surface water meeting safe drinking water standards may also be a source of water for a noncommunity supply. Manufacturers may be Type II water supplies on their own supply or may be connected to a well serving more than one customer, such as a well that serves an industrial complex with more than one business in it.The local health department performs sanitary surveys of Type II water supplies at least once every five years. Noncommunity supplies are required to sample routinely, meet drinking water standards, and maintain their water systems in a sanitary condition in accordance with Act 399. If your facility has a Type II water supply, also see Chapter 9.6 related to cross-connections.

Type II noncommunity supplies fall under two categories:

- A **transient noncommunity** water supply is one that serves at least 15 service connections or at least 25 people on an average daily basis for at least 60 days out of the year. Examples include campgrounds, highway rest areas, and churches.
- A **nontransient noncommunity** water supply is one that routinely serves the **same** 25 or more people daily at least six months out of the year. Examples include factories, schools, or other businesses that employ 25 persons or more.

Visit **Michigan.gov/NoncommunityWaterSupply** for more information about noncommunity water supplies and how to locate your health department.

9.3.1 PERMITS & PERMIT FEES

Construction permits for Type II water supplies must be issued by the local health department for the county. Construction details and a site plan must be included with the application. Permit fees for Type II noncommunity water supplies are set by the local health department issuing the permit. These fees vary. Certain industrial processes may require water that has been treated to remove hardness, iron, or for other reasons. The installation of premise plumbing treatment can lead to additional monitoring and reporting requirements and could have additional impacts that should be assessed ahead of installation. A permit maybe required for the installation of the treament equipment. For more informaiton on when a permit is required, contact your local health department.

9.3.2 ANNUAL FEES & LABORATORY FEES

Noncommunity supplies are required to pay an annual fee assessed by October 1 each year based upon their status as a transient or nontransient noncommunity public water supply. The fee is due by November 30 each year. The owner of the water supply is also responsible for payment of any laboratory fees for testing of required water samples.

9.3.3 CERTIFIED OPERATOR REQUIREMENTS

An operator must be certified in the classification designated by Act 399 if they are in charge of a treatment system necessary for public health reasons at any Type II noncommunity water supply, or a distribution system at a Type II nontransient noncommunity water supply. “Treatment” is defined as a technology that is employed by a public water supply for the control of the chemical, physical, biological, or radiological characteristics of the water supply. A “distribution system” is composed of components where water is distributed and used for drinking/household purposes. The components may include piping, fixtures, transmission mains, pumps, storage tanks, etc.

As of December 8, 2002, all nontransient noncommunity water systems are required to have a certified operator. The certification by EGLE is based on the operator's qualifications, experience, a written examination, and a laboratory examination in some cases. Noncommunity water supply operators are certified based on a written or oral examination and may have to demonstrate knowledge of the operation of the treatment and monitoring equipment.

For more information about the Operator Training and Certification Program, visit **Michigan.gov/EGLEOperatorTraining**.

9.3.4 SAMPLING REQUIREMENTS

Type II noncommunity water supplies must all sample for coliform bacteria and nitrates/nitrites; however, the nontransient supplies must also sample for metals, cyanide, arsenic, volatile organic compounds, synthetic organic compounds, lead, and copper. Other sampling requirements may apply if certain treatment technologies are used, such as corrosion control systems. Sampling requirements are based upon which category the water supply falls under, and the sampling frequency is determined by the local health department based on inspection results, water quality, population served, and sampling history. The laboratories used by the supply must be certified by the state for the components being tested.

9.4 TYPE III WATER SUPPLIES

Type III public water supplies are regulated by local health departments under both Act 399 and Part 127 of Act 368. A Type III supplier must comply with all applicable state and local plumbing codes, as well as any local codes regarding water supplies. The supply must meet minimum construction standards outlined in Part 127 but may be required to meet more stringent construction and/or sampling requirements based upon site specific conditions, such as groundwater contamination, geologic conditions, etc.

Permits for Type III water supplies and those wells providing only process water for manufacturing are obtained from the local health department. Permit fees for Type III public water supplies, or wells providing processing water only, are set by the local health department or other agency having jurisdiction over issue of well permits in that county. The owner of the water supply is responsible for any sampling fees.

Unless otherwise specified by the local health department or other agency having jurisdiction, Type III water supplies and process water wells are not required to routinely submit water samples. Type III water supplies are not required to have a certified operator.

9.5 WATER USE PROGRAM – GREAT LAKES PROTECTION

Part 327 of Michigan's Act 451 provides a regulatory structure for the principles of the Great Lakes-St. Lawrence River Basin Water Resources Compact. This Compact requires all Great Lakes states to implement a program to protect, conserve, and manage all water dependent on the natural resources of the Great Lakes Basin. Part 327 provides an environmental baseline for managing water resources in a more integrated manner, and strengthens the legal basis for opposing unwarranted diversions of Great Lakes water. Preservation of local streamflow is the environmental standard by which Michigan manages its waters of the Great Lakes Basin. Each stream segment in the state has statutory limits of allowable streamflow reduction resulting from water withdrawals.

The Water Use Program is responsible for registering Large Quantity Withdrawals (LQW), collecting annual water use data, making determinations on the potential impacts to the water resources as a result of a proposed withdrawal, and issuing water withdrawal permits.

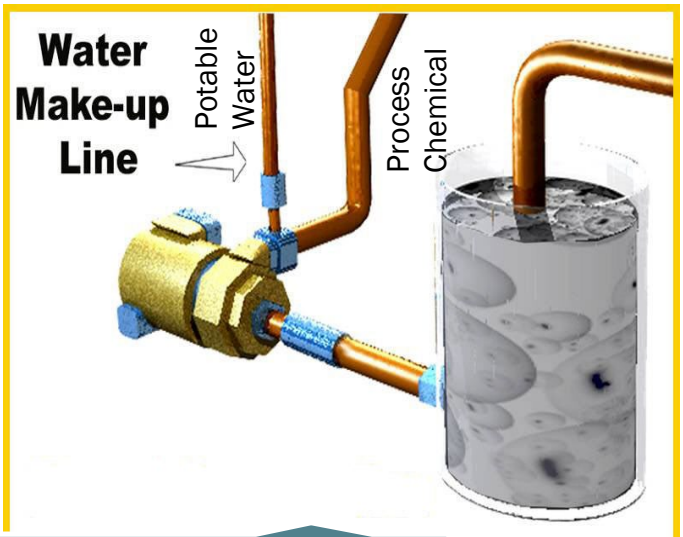
A facility with 70 gallons per minute or more in total pump capacity is a LQW and is subject to water use reporting requirements. Annual water use reports must be provided to EGLE by April 1 of each year on a form provided by EGLE. A $200 annual fee must accompany the report. New or increased withdrawals at a capacity of 70 gallons per minute or more must be registered and approved by EGLE prior to beginning the withdrawal.

The Water Withdrawal Assessment Tool (www.deq.state.mi.us/wwat) is provided by the Water Use Program for property owners to apply for authorization of a new LQW. It is the first step in assessing the impact of a proposed withdrawal on nearby streams and rivers, and can either provide instant authorization, or if necessary, begin a site-specific review process by which the Water Use Program determines if the proposed withdrawal can comply with the law.

9.6 CROSS-CONNECTION REQUIREMENTS

A cross-connection is a connection or arrangement of piping or appurtenances (fixtures, fittings, or equipment) through which a backflow into the potable water supply may occur. It is the responsibility of water utility customers or public water supply owners to comply with all cross-connection control regulations in their area or municipality. No cross-connections are allowed between a public water supply and a secondary water source, such as a well. Examples of cross-connections include submerged inlets, such as unapproved ball cock assemblies in toilet tanks; unprotected connections between the water supply and a boiler containing additives; or piping submerged in a tank or vessel which may contain a contaminant, such as a mixing or electroplating tank.

Typical Cross-Connection - Submerged Inlet



Typical Cross-Connection - Potable Line Into Process

Act 399 states that "a connection with a public water supply system shall comply with existing laws, ordinances, and rules including: (a) The state plumbing act, 2002 PA 733, MCL 338-3511 to 338-3569, [and] (b) Local ordinances or rules providing acceptable protection against cross connections." Public water supplies are required to develop a comprehensive control program for the elimination and prevention of all cross-connections.

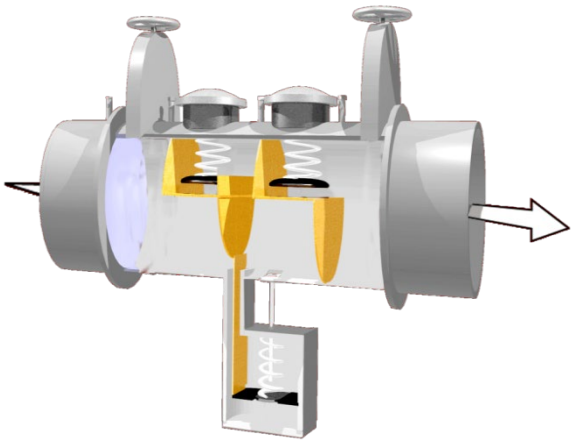
The program should include a time scheduled for inspection and reinspection of all water utility customers' premises for possible connections, including manufacturing sites. This periodic inspection is to "ascertain if safe air gaps or required backflow preventers are in place." The inspection may include testing of certain backflow prevention assemblies, such as a reduced pressure principle backflow assembly, etc. A manufacturer or commercial establishment may be responsible for having such devices in its facility tested on a periodic basis. A user of a public water supply must also have written approval from the water utility or the agency having jurisdiction over the water supply of any proposed corrective action or protective device before using or installing it. During an inspection of the water supply, if cross-connections are identified, a compliance schedule may be established depending upon the degree of hazard and the time required to obtain and install equipment.

If a cross-connection has not been corrected within a reasonable period, the distribution system of the customer may be disconnected from the public water supply in such a way that it cannot be connected by any unauthorized person. When a secondary water source is used in addition to a public water supply, any exposed public water supply and secondary water piping shall be identified by distinguishing colors or tags and maintained so that each pipe may be traced easily in its entirety. There can be no connections between the two distribution systems.

TYPE OF BACKFLOW PREVENTION

The reduced pressure principle backflow preventer is an arrangement of spring loaded check valves designed to prevent the backflow of water. If the pressure within the public water supply system becomes less than the in-plant system (that going in becomes less that the pressure going out), the normal direction of flow through the backflow preventer would tend to reverse, causing a series of two check valves to restrict the flow of any water back into the public water supply system

Reduced Pressure Principle Assembly (RP)



Learn more about cross-connections, along with the methods and equipment used to eliminate them, by taking EGLE's annual Cross-Connection Seminar offered through the **Drinking Water Operator Training and Certification programs**. Visit **Michigan.gov/EGLEOperatorTraining**.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common drinking water topics

State and federal drinking water regulations or fees
EGLE, Public Water Supply Programs - Michigan.gov/DrinkingWater
EGLE YouTube Videos: YouTube.com/c/MichiganEGLE/playlists (Drinking Water)

- Community: 517-614-1528
- Noncommunity: 517-614-8644

Federal drinking water program
U.S. EPA Office of Groundwater and Drinking Water
(epa.gov/ground-water-and-drinking-water)

Noncommunity Water Supply Information
Michigan.gov/NoncommunityWaterSupply

Permitting, change in ownership, and sampling requirements associated with Type II and III public water supplies
Local Health Department - MALPH.org

Safe Drinking Water Act, Act 399 of 1976
http://legislature.mi.gov/doc.aspx?mcl-act-399-of-1976
EGLE Public Water Supply Program: 517-614-1528

Training and certification of water supply operators
EGLE Water Operator Training Program: 517-284-5424 | Michigan.gov/EGLEOperatorTraining

Water use reporting and permitting
EGLE Water Use Program: 517-284-5563 | Michigan.gov/WaterUse

Michigan Guide to
Environmental Regulations

Chapter 10

RADIOACTIVE MATERIALS

CHAPTER 10: RADIOACTIVE MATERIALS

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

Many facilities use radioactive material (RAM) in diverse ways or have radioactive wastes. Exit signs may contain tritium and smoke detectors may contain americium. Other examples of industrial uses of RAM include devices to measure the density of concrete or blacktop, determine the thickness of paper and rolled steel as it is made, find cracks in pipes or airplane surfaces, test the amount of lead in paint, or monitor the flow of sludge through pipes at a sewage treatment plant. Research facilities and academic institutions use RAM during the development of new pharmaceuticals to “tag” certain molecules to follow their progress through chemical or biological processes and in other research activities. Medical facilities inject patients with RAM to diagnose medical conditions and for therapeutic treatments. Medical facilities also use large radiation sources for cancer treatment. Radium paint was once used on aircraft instruments, naval compasses, military vehicle instruments, and on clocks and watches to make the numbers and lines glow in the dark.

Naturally occurring radioactive material is found as uranium in clay and bricks, granite, shale, or other rocks. It is found as radium in soils, or as radium sulfate scales on some pipes and fittings from the oil and gas industry and as the naturally radioactive constituent of potassium, potassium-40. Natural gas and products derived from natural gas, such as propane, contain radon-222. When radon-222 decays, lead-210 can plate out on the interior of pipes and process equipment.

AGENCIES AND THEIR LAWS AND RULES

Several state and federal agencies regulate the possession, use, transport, transfer, and disposal of radioactive material. The purpose of these requirements is to ensure the safe use and disposal of radioactive material. Some of these requirements, and the applicable regulatory agencies, are:

- The **U.S. Nuclear Regulatory Commission** (NRC) regulates the use of source, byproduct, and special nuclear material under the authority of the U.S. Atomic Energy Act. These regulations are published under Title 10, Parts 1 through 171 of the Code of Federal Regulations (**10 CFR Parts 1 - 171**).
- The Michigan Department of Environment, Great Lakes, and Energy (EGLE), **Radiological Protection Program** registers the possession and use of certain diffuse forms of naturally occurring radioactive material under the authority of Public Health Code, Public Act 368 of 1978, as amended (Act 368).
- The **U.S. Department of Transportation** and **Michigan State Police, Commercial Vehicle Enforcement Division** oversee transportation of radioactive material under Title 49 of the Code of Federal Regulations (49 CFR). See Chapter 4.4 for more information about the transportation of radioactive materials.
- The **Michigan Department of Labor and Economic Opportunity, Radiation Safety Program** is responsible for registration and inspection of medical (x-ray and mammography machines) and non-medical radiation machines and facilities. Call 517-284-7820 for more information.

10.1 ENVIRONMENTAL MONITORING AND RADON GAS

The **Environmental Monitoring Program** operates an environmental monitoring network around each of Michigan's nuclear power plant sites. The program collects and analyzes several types of samples, including direct radiation, air, surface water, and milk from the environs of the nuclear plants. Unit laboratory analyses also include samples collected by other program staff during investigations of potentially contaminated sites, during emergency response activities, and from routine staff compliance investigations.

EGLE's **Indoor Radon Program** (**Michigan.gov/radon**) conducts activities under the U.S. Environmental Protection Agency's (U.S. EPA's) State Indoor Radon Grant Program. This program provides education on the risks associated with exposure to radon gas and works closely with local health departments throughout the state to implement outreach efforts at the local level. The radon hotline serves as a technical resource for the public.

10.2 NUCLEAR FACILITIES

EGLE's **Radiological Emergency Preparedness** (**REP**) **Program** provides scientific expertise and advice to state and local decision makers in the event of an emergency at a nuclear power plant. The state-wide REP Program, which is coordinated by the Michigan State Police, Emergency Management and Homeland Security Division, is a partnership between industry and all levels of government. EGLE's program staff develop and implement the Nuclear Facilities Emergency Management Plan, train emergency response personnel, and are responsible for executing certain emergency response actions. Visit **Michigan.gov/Waste** and select "**Radiological Protection**" for more information.

10.3 RADIOACTIVE MATERIALS IN THE ENVIRONMENT

Radioactive materials occur naturally in our environment. Certain industrial processes, like drilling for the production of oil, gas, and brine, can concentrate these materials. Municipal drinking and wastewater treatment systems can also have radium on their production equipment, in sludges, and in solid residuals. The Radiological Protection Program works with other EGLE staff to monitor and evaluate the public health and environmental consequences of these naturally occurring radioactive materials. Radiological Protection Program staff identifies and coordinates remediation of radioactively contaminated sites and works with other state and federal agencies to assure proper site cleanup and disposition of contaminated materials.

10.3.1 NRC Licensing

The U.S. Nuclear Regulatory Commission regulates source, byproduct, and special nuclear material. It also regulates nuclear power plants and high-level radioactive waste storage and disposal. The Region III office near Chicago, Illinois, can be contacted at 800-522-3025.

10.4 EMERGENCY ASSISTANCE

Program staff responds to radiation alarm trips at scrap metal facilities and landfills and to citizen concerns and complaints regarding radioactive materials. During normal business hours, contact the **Radiological Protection Program** at 517-284-5185 regarding any radiation emergency or for questions about radioactive material. Off-hour radiation emergencies can be reported through EGLE's Pollution Emergency Alerting System (PEAS) hotline at 800-292-4706 or by contacting the Michigan State Police Operations Center at 517-241-8000. A facility must also meet the emergency reporting requirements of other federal or state agencies for hazardous or radioactive material. Radiological Protection Program staff are trained and equipped with radiation detection instrumentation to act as first responders to radiation emergencies 24 hours a day, 7 days a week.

10.5 RADIOACTIVE WASTE DISPOSAL

Discuss disposal options for radioactive wastes with the Radiological Protection Program staff by calling 517-284-5185 or emailing RadioactiveMaterial@michigan.gov.

10.5.1 Tritium Exit Signs

Do NOT landfill exit signs that contain tritium. These should be returned to the manufacturer, if possible, or properly disposed by a licensed radioactive waste disposal contractor. A label should be on the signs giving proper disposal directions. These exit signs, disposal contractors, and disposal sites are regulated under **10 CFR by the NRC**.

The shipping requirements for these exit signs are regulated under the **US. Department of Transportation regulations in 49 CFR**. Contact the shipping companies for their specific policies and contact the Michigan State Police, Commercial Vehicle Enforcement Division with shipping questions.

For information on **disposal of exit signs**, visit **Michigan.gov/Waste**, and select "**Radiological Protection**."

10.5.2 Waste Industrial Smoke Detectors

Remove any batteries from the detector and handle the battery as a universal waste or under the applicable hazardous waste regulations for that company's hazardous waste generator status (see Chapter 2).

The requirement a company must follow depends on whether the smoke detector contains radioactive material or if it could be considered a hazardous waste. There are two types of materials commonly found in smoke detectors.

- The older models may contain a non-exempt radium-226 source that is regulated by the U.S. Nuclear Regulatory Commission. These detectors should be returned to the manufacturer or disposed as radioactive waste.
- Newer models may contain a small americium-241 source. The combined smoke detector and americium source are specifically exempted in the federal regulations allowing homeowners to dispose individual detectors in a sanitary landfill. Large quantities, such as those collected during a major construction renovation or hazardous waste collection project, should not be disposed without first checking with officials of the NRC or **Radiological Protection Program** staff.

Some smoke detectors could be subject to the hazardous waste regulations because the amount of metal in the detectors may fail the Toxicity Characteristic Leaching Procedure. Small quantity generators and large quantity generators cannot put hazardous waste smoke detectors in the trash. Conditionally exempt small quantity generators may dispose smoke detectors in licensed solid waste landfills if they do not contain radioactive materials above exempt quantities. However, if smoke detectors are not classified as a hazardous waste and do not contain radioactive

materials above exempt quantities, then they may be sent to a licensed landfill. Companies should contact the landfill if disposing of large numbers (roughly around 25 or so) because the waste load may set off the landfill's radiation detectors. Smoke detectors should not be recycled for metal or incinerated.

Contact EGLE's **Radiological Protection Program** regarding potential safety concerns when numerous smoke detectors are disposed of at the same time or regarding nuclear regulations.

10.5.3 TENORM

Under the NREPA, a material is classified as Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) if it has undergone a human process that increases its concentrations of its naturally occurring radioactive isotopes. Material is not considered TENORM if:

- It has not undergone a human process that would increase its concentration.
- The Ra-226, Ra-228, and Pb-210 concentrations are all individually below 5 picocuries per gram (pCi/g).
- It is classified as source material by the U.S. Nuclear Regulatory Commission (NRC).

Common materials classified as source material by the NRC and specifically exempted include coal ash, refractory/furnace brick, circuit breakers, rockwool insulation, ceramics, uranium ore, photographic film/negatives/prints, lantern mantles, vacuum tubes, and welding rods.

To dispose of TENORM, the following table provides an upper bound acceptable concentration that the 3 different types of landfills in Michigan might accept. A landfill listed as enhanced has implemented additional environmental monitoring and other radiological control measures.

Acceptable Upper Bound Concentrations (pCi/g) by Landfill Type

Nuclide	Type III	Type II	Type II - Enhanced	Type I	Type I - Enhanced
Ra-226	< 5*	<25	<50	<50	<500
Ra-228	< 5*	<25	<50	<50	<500
Pb-210	< 5*	<25	<260	<260	<500

*Type III landfills may not accept TENORM. Concentrations less than 5 pCi/g are excluded from the definition of TENORM for disposal purposes.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common radioactive material regulations topics

State and Federal Radioactive Material Regulations
EGLE, **Radioactive Materials Program**
517-284-5185 | **RadioactiveMaterial@Michigan.gov**

- Ionizing Radiation Rules for Radioactive Material

Radon Gas in Indoor Air (Naturally Occurring)
EGLE, Indoor Radon Program
800-723-6642 | **Radon@michigan.gov** | **Michigan.gov/Radon**

Registration and Inspection of Radiation Machines
MIOSHA-Radiation Safety Program
517-284-7820 | **RSSInfo@michigan.gov** | **Michigan.gov/MIOSHA** ("**Radiation Safety**")

U.S. DOT Hazardous Materials Transportation
U.S. Department of Transportation
800-467-4922 or 517-853-5990 | **phmsa.dot.gov**

Michigan State Police, Commercial Vehicle Enforcement Division
517-241-0506 | **Michigan.gov/msp**

Michigan Center for Truck Safety
800-682-4682 | **TruckingSafety.org**

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Chapter 11

OIL, GAS, AND MINERAL RESOURCES

CHAPTER 11: OIL, GAS, AND MINERAL RESOURCES

IN THIS CHAPTER

PURPOSE AND APPLICABILITY OF REGULATIONS

The Oil, Gas, and Minerals Division (OGMD) of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) fosters the conservation and orderly development of hydrocarbon and mineral resources, while preventing damage to the environment and protecting public health and safety. The OGMD also maintains a variety of geological and regulatory records, maps, publications, and computerized information for public use. Although most manufacturers in the state do not participate in activities that are regulated by the OGMD, it is important to have a general understanding of the various OGMD programs in case you interact with industries, such as mining, that are regulated.

AGENCIES AND THEIR LAWS AND RULES

The OGMD regulates oil, gas, and mineral resources by administering parts of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451): Part 615 (Supervisor of Wells), Part 616 (Orphan Well Fund), Part 617 (Unitization), Part 625 (Mineral Wells), Part 631 (Ferrous Mineral Mining), Part 632 (Nonferrous Metallic Mineral Mining), Part 635 (Surface and Underground Coal Mine Reclamation), and Part 637 (Sand Dune Mining). Some of the OGMD's programs and areas of involvement include oil and gas and mineral well permitting, ferrous and non-ferrous metallic mining and reclamation activities, and sand dune mining. The OGMD also serves as a collector and distributor of a variety of geological information and records. The following is a brief description of each of these programs.

11.1 GEOLOGICAL INFORMATION AND RECORDS

The OGMD maintains regulatory records on oil, gas, and mineral programs, maps, and publications on the geology of Michigan. This information includes records for over 70,000 oil, gas, and mineral wells; maps and documents on surficial and bedrock geology, fuel and mineral resources; and geological topics of general interest.

11.2 OIL AND GAS

The OGMD regulates the locating, spacing, drilling, operating, and plugging of oil and gas wells, and the operation of associated storage and disposal facilities. The OGMD also regulates oil and gas production rates and allocates production among the owners of a common reservoir. The OGMD reviews applications and issues permits to drill and operate wells for the production of oil and gas and for the disposal of associated brine. The OGMD staff conduct inspections of oil and gas sites for compliance with regulatory requirements.

The OGMD manages cleanups at oil, gas, and mineral sites utilizing Part 201 (Environmental Remediation) as a guide. See Chapter 7 for more information about environmental remediation.

The OGMD utilizes the Orphan Well Fund to plug oil and gas wells and conducts associated cleanup activities where no owner or operator is known, for which owners or operators are insolvent, or where an environmental emergency is declared.

11.3 MINERAL WELLS

The OGMD oversees the location, construction, operation, and closure of mineral wells, which includes wells for waste disposal, brine production, solution mining, underground storage, and mineral exploration. The OGMD reviews applications and issues permits for mineral wells, compiles records, and conducts inspections to ensure compliance.

11.3.1 Waste Disposal

Some manufacturers in the state dispose of liquid wastes by underground injection. The OGMD regulates the wells used for this disposal. In addition, these wells are regulated by the U.S. Environmental Protection Agency (U.S. EPA), Underground Injection Control Branch. In those instances where the waste is considered hazardous and the manufacturer is storing and/or treating the waste prior to discharge, the treatment and storage facilities are subject to regulations administered by EGLE's Hazardous Waste Program (see Chapter 2 for more information).

Contact EGLE's Hazardous Waste Program for questions concerning the permitting of **Treatment, Storage, and Disposal Facilities** at 800-662-9278 or visit **Michigan.gov/EGLEwaste** (select "Hazardous and Liquid Industrial Waste").

Contact the U.S. EPA, Region 5, Underground Injection Control Branch for questions concerning federal Underground Injection Control Regulations and permitting. Call 312-886-2446 or visit **epa.gov/uic.**

11.4 MINING

The OGMD regulates several mining industries in Michigan including metallic mining, native copper mining, sand dune mining, and coal mining. The OGMD enforces regulations which address issues such as transportation, storage, treatment, and disposal of ore and waste rock, and plans for mining and reclamation. The mining industries are also regulated by other environmental statutes and divisions within EGLE such as the Air Quality Division and the Water Resources Division.

11.4.1 Ferrous Mineral (Iron) Mining

Regulated by Part 631: Ferrous Mining, ferrous- or iron-containing minerals are used in common manufactured products. Michigan's iron-bearing formations have long been sources of these important minerals. The OGMD administers Part 631: Ferrous Mining, and oversees mine operation, environmental issues, and reclamation. Like nonferrous metallic mining, other divisions of the Department of Environment, Great Lakes, and Energy are involved in permitting and regulation of Michigan's iron mining industry.

11.4.2 Non-Ferrous Metallic Mining

Regulated by Part 632: Nonferrous Metallic Mining, nonferrous minerals are important economic minerals such as copper, nickel, zinc, gold, and silver. Some of these metals are very important globally for manufacturing, including production of green technologies such as electric vehicles and emission control catalysts. Part 632: Nonferrous Metallic Mining provides a sound regulatory framework for construction, operation, and reclamation of mining operations required for the safe and environmentally sustainable extraction of these metallic minerals. The Department of Environment, Great Lakes, and Energy (EGLE) Oil, Gas, and Minerals Division (OGMD) implements Part 632. The nonferrous metallic mining industry is also regulated by other environmental statutes and divisions within EGLE, such as the Air Quality Division and the Water Resources Division.

11.4.3 Sand Dune Mining

The OGMD regulates sand mining in designated coastal sand dune areas pursuant to Part 637 (Sand Dune Areas). The OGMD reviews sand dune mining applications and issues permits, evaluates mining and reclamation plans, determines financial responsibility requirements, conducts regular inspections, and pursues enforcement action as necessary.

11.4.4 Coal Mining

Part 635: Coal Mining, regulates the coal mining industry. A Coal Mine Reclamation Permit, pursuant to Part 635 and administered by the OGMD, is required for mining coal in Michigan. Coal mining began in Michigan in the 1800s, but the last active mines closed in the 1950s. There has been no economic interest in Michigan coal for many decades; however, the OGMD provides available information related to old coal mines when legacy issues arise, typically construction projects near old mine shafts.

Related Coal Mining Maps and Information: Coal Mine Statewide Map and Michigan's Coal Report.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common air regulations topics

EGLE Oil, Gas, and Minerals Division
Conservation, regulation, and protection of oil, gas, sand dunes, brines, and metallic and non-metallic minerals
Michigan.gov/OGS | 517-284-6823

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Chapter 12

SUSTAINABILITY

CHAPTER 12: SUSTAINABILITY

IN THIS CHAPTER

PURPOSE AND APPLICABILITY

Sustainability helps us to evaluate the choices we make and suggests a more effective means of doing business as usual. A strong financial case for sustainability exists as institutions, businesses, and individuals use sustainability to modify current practices to make them more effective, saving both capital and time. These environmental, social, and economic considerations are known as the triple bottom line and can be thought of as another way to define sustainability.

This chapter briefly discusses the benefits, tools, and opportunities common to the sustainable approach. It also summarizes pollution prevention assistance and incentive programs offered by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

12.1 POLLUTION PREVENTION (P2)

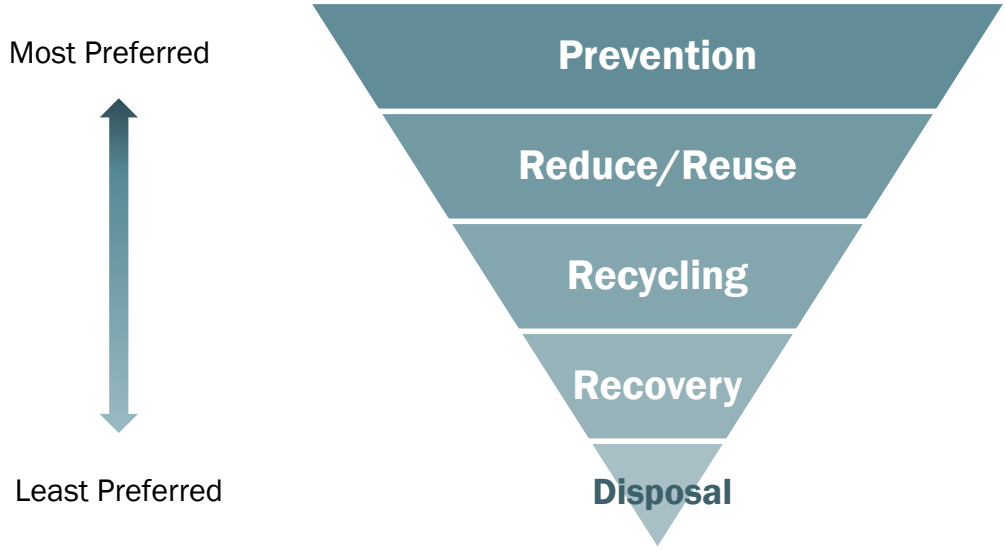
Pollution prevention is a scientific, continuous improvement approach that often results in cost reduction, risk avoidance, and enhanced competitive advantage. Perhaps more importantly, protecting Michigan's environment through pollution prevention (P2) is a key element in preserving Michigan's natural resources for future generations. Businesses have been instrumental in protecting the environment for decades.

The state of Michigan's P2 programs are administered by EGLE, in accordance with the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. This legislation entrusts EGLE with the responsibility of:

- Educating and serving as a catalyst for change within the business community to bring about reductions in the generation of environmental wastes.
- Providing technical and financial assistance to small businesses and institutions to facilitate P2.

EGLE's P2 programs are a conduit for non-regulatory assistance to businesses, institutions, and local communities to improve the environment and protect workers and citizens from exposure to harmful substances. This is accomplished through advancing voluntary, multi-media, environmental, social, and economic improvement using scientific, collaborative solutions to achieve a healthy and sustainable environment.

WASTE MATERIALS MANAGEMENT HIERARCHY



Common examples of P2 include:

- Replacing hazardous organic solvents with non-toxic aqueous cleaners.
- Replacing old process equipment with new equipment that uses fewer raw materials.
- Modifying manufacturing and industrial processes to eliminate the need for hazardous substances.
- Choosing alternative fuel sources that lower nitrogen oxide (NOx) emissions.
- Conserving and reusing process water.
- Installing green infrastructure.
- Purchasing mercury-free switches, relays, lamps, or other equipment.
- Using modified packaging that creates less waste.
- Deconstructing a building and reusing certain materials rather than demolition and landfilling.
- Recycling metals, solvents, oils, cardboard, wood pallets, office paper, organics, and other recyclable materials.
- Purchasing products manufactured of post-consumer recycled materials.
- Purchasing products containing less toxic, bio-based substances that result in less hazardous waste being generated.
- Purchasing products that are built for disassembly and material recovery.
- Conducting energy audits and practicing conservation.
- Using certified green products such as cleaners, glues, paints, etc. that contain fewer toxic materials and reduce employee exposure, asthma reactions, and odor complaints.
- Replacing standard motors, pumps, and lighting with high efficiency units.
- Stopping leaks, drips, and spills; and instituting preventive maintenance practices.
- Developing emergency response plans and procedures.

12.1.1 WHY PRACTICE POLLUTION PREVENTION?

Pollution prevention is a scientific, continuous improvement approach that often results in cost reduction, risk avoidance, and enhanced competitive advantage. P2 not only helps to meet environmental goals, but also reduces waste, improves efficiencies, saves money, reduces potential liabilities, and mitigates hazardous exposures. Unlike costly pollution control measures, pollution prevention offers important economic, regulatory, environmental, and social benefits that may often result in a more competitive business.

A facility with an effective P2 program will often:

- Reduce waste treatment, transport, and disposal costs.
- Reduce costs for energy, water, and raw materials.
- Eliminate or minimize compliance issues and associated costs.
- Reduce future liabilities through improved quality of work, environment, and employee health and safety.
- Avoid costs of accidents and spills.
- Improve production times.
- Enhance its public image and community relations.

In addition, instituting green practices and showcasing a strong environmental ethic provides a competitive edge and may open up new markets for your products to others that are concerned about environmental and health impacts.

12.1.2 GETTING STARTED

An excellent way to get started with any P2 effort is to draw upon the many resources available through EGLE's P2 assistance programs, projects, and initiatives. To help you develop an action plan or start a P2 program, the following is a brief description of EGLE assistance activities and incentive programs, including industry partnerships and collaborations.

I. **Financial Assistance:** A number of EGLE financial assistance programs are available to encourage the adoption of pollution prevention within the state.

   a. **Small Business Pollution Prevention Loan Program:** Low-interest loans of up to $400,000 are available to small businesses of 500 employees or fewer to finance projects that eliminate or minimize the generation of waste, result in environmentally sound reuse and recycling of wastes, or conserve energy or water within their organizations.

   b. **Non-Point Source/Stormwater Grants:** Nonpoint source pollution is pollution caused when rain, snowmelt, or wind carries pollutants off the land and into lakes, streams, wetlands, and other water bodies. EGLE's Nonpoint Source Program provides grants to local units of government and non-profit entities to reduce nonpoint source pollution statewide.

   c. **Fuel Transformation Program:** EGLE's Fuel Transformation Program goals are to:
      - reduce nitrogen oxide (NOx) emissions and maximize air quality benefits statewide with an emphasis on priority areas (areas designated as non-attainment and maintenance areas for the National Ambient Air Quality Standards).
      - increase adoption of zero emission vehicles, alternate fuel vehicles and equipment.
      - reduce diesel emissions from school buses statewide.

   Under the Fuel Transformation Program, P2 projects are solicited through a competitive

application process and funded on a reimbursement basis after all required documentation has been successfully submitted and approved by EGLE. Examples of projects funded or expected to be funded under this program include those which involve upgrades from old diesel equipment to clean diesel equipment or propane for equipment like school busses, Class 4-8 local freight vehicles (eligible medium and large trucks and port drayage trucks), Class 4-8 shuttle and transit buses, freight switchers, Great Lakes ferries and tug boats, shore power, port cargo handling equipment and forklifts, and airport ground support.

d. **Integrated Assessment Program:** EGLE provides free, confidential integrated assessments to help companies evaluate P2 and compliance opportunities. Recommendations from the assessment are currently eligible for grant funding through the USEPA State and Tribal Assistance Grant Program.

e. **Electric Vehicle (EV) Funding Opportunities**: EGLE's EV Program aims to build infrastructure for direct current fast charging stations across Michigan to ensure the feasibility of long-distance trips for EV users in Michigan. To achieve this, EGLE provides funding for qualified EV charging equipment, site preparation, equipment installation, networking fees and signage. Any public or private organization located in Michigan, or those outside of Michigan that have demonstrated significant experience installing and maintaining electric vehicle charging stations and have a significant presence in Michigan, and are enrolled in a Utility EV program, are eligible to apply for this grant. The grant amount is the lesser of 33.3 percent of the total cost or a direct match of the amount paid for eligible EV charging equipment, up to $70,000.

f. **Clean Diesel Program**: EGLE provides matching grants to local units of government, schools, non-profits, port authorities, metropolitan planning organizations, private business and industry for endeavors that will:

- reduce diesel engine particuate matter and nitrogen oxide emissions in Michigan
- provide increased health benefits for populations in areas of the state where the air quality is affected by diesel engine emissions from nearby stationary or mobile emission sources

Visit **Michigan.gov/EGLEGrantsAndLoans** for more information on financial assistance opportunities available through EGLE.

II. **Training and Outreach:** The easiest way to stay informed of EGLE's training and outreach is to subscribe for notifications on topics of interest through **Michigan.gov/EGLEConnect**. EGLE hosts numerous events that share information on pollution prevention, new technologies, current regulatory requirements, and compliance assistance resources. For the latest events and access to past event resources and recorded webinars, visit **Michigan.gov/EGLEEvents**. EGLE also produces many guidance documents, fact sheets, and other publications to help advance P2 activities and assist with maintaining compliance. These publications can be found at **Michigan.gov/EGLEPublications**.

III. **Technical Assistance:** These programs focus on providing P2 information and technical

assistance to companies, institutions, and communities.

a. **Integrated Assessment Program:** EGLE provides free, confidential Integrated Assessments to help companies evaluate pollution prevention opportunities.

b. **Recycling Assistance**: Resources are available to assist companies in their recycling efforts at **Michigan.gov/EGLERecycling** and **www.RecyclingRacoons.org**.

IV. **P2 Programs:** By participating in any of the following P2 programs, a business can receive well-deserved public recognition, customized assistance, and other benefits for P2 and compliance efforts.

a. **Clean Corporate Citizen (C3) Program**: Regulated companies, municipalities, and institutions meeting certain environmental performance criteria can be designated as Clean Corporate Citizens. In return they receive positive public recognition and are entitled to certain regulatory benefits, such as streamlined air quality permit processing.

CLEAN CORPORATE CITIZEN PROGRAM

b. **Green Communities Challenge**: This peer-to-peer network shares home-grown best practices to help Michigan communities overcome barriers on the path toward sustainability. Members can earn recognition for sustainability accomplishments and track progress by participating in the Challenge. Visit migreencommunities.com.

c. **Michigan Business Pollution Prevention Partnership (MBP3)**: Open to all businesses, associations, organizations, and agencies, MBP3 is a voluntary P2 program designed to encourage businesses to initiate or expand their P2 practices. Participants receive public recognition for their efforts and involvement in a community of practice.

Michigan Business Pollution Prevention Partnership MBP3

d. **Neighborhood Environmental Partners**: A recognition program intended to increase interaction between businesses and their neighbors, with the goal of enhancing the environment and the quality of life in the community.

12.1.3 THE POLLUTION PREVENTION PLAN

It has been shown that a systematic approach to planning, with measurable goals, results in effective pollution prevention. An effective P2 plan can reduce waste and costs. A good plan includes gaining full support of management, committing resources, and establishing policies that support reductions of waste, resources, water, and energy use within the company. Input from all levels of your business should be called upon to contribute P2 ideas, technical assistance, and decision-making. By following the steps outlined below, you can set the stage for a successful P2 program, which can help you achieve goals set for compliance, environmental management plans, and sustainability efforts.

13 STEPS TO AN EFFECTIVE POLLUTION PREVENTION PLAN

STEP 1 Start with a commitment.

STEP 2 Establish a P2 team and P2 coordinator.

STEP 3 Establish reduction goals for wastes, toxics, climate change, water, and energy.

STEP 4 Establish priorities and procedures for conducting detailed assessments.

STEP 5 Designate an assessment team.

STEP 6 Conduct a facility-wide assessment.

STEP 7 Identify potential P2 opportunities.

STEP 8 Perform technical and economic analyses on the potential P2 opportunities.

STEP 9 Develop an implementation plan.

STEP 10 Implement the selected projects.

STEP 11 Evaluate project effectiveness annually and document results.

STEP 12 Celebrate positive results and learn from negative results.

STEP 13 Modify the plan as needed and select the next steps to be taken.

STEP 1

Start with a commitment.

P2 programs are only as strong and effective as the company's internal commitment. Make the philosophy of pollution prevention a company priority. Put the company's commitment in writing to legitimize the program with employees and set the tone for P2 efficiencies as an everyday part of doing business. P2 should be incorporated into every aspect of the business, including mission and policy statements, budgeting, purchasing, design, and production. A senior staff member should lead the program and solicit employees' input in identifying areas where waste, toxics, water, and energy usage can be reduced. Engage employees from all parts of the organization in the program.

STEP 2

Establish a pollution prevention team and coordinator.

Once your facility establishes a clear commitment to P2, gather interested, appointed, and affected individuals for a brainstorming session. This group of individuals should include a cross-section from all levels of staff, including management to front-line workers in the purchasing, financial, clerical, production, maintenance, and warehousing areas. Heading this team should be a Pollution Prevention Coordinator. This P2 champion is the one who coordinates the assessments, carries forward your team recommendations, and provides oversight to the implementation of projects. This person also acts as a point person for any questions, comments, or recommendations from other employees. Putting someone in charge helps ensure the program will move forward in a timely and effective manner.

STEP 3 **Establish overall reduction goals for wastes, toxics, climate change, water, and energy.**

The first goals need to be target goals such as achieving specific energy, toxics, water, or waste reductions by a set date. Then determine what steps the company needs to take to achieve this goal. Purchasing changes are probably the easiest and most powerful means of reducing toxics that result in hazardous waste and employee exposures as well as reducing energy usage.

STEP 4 **Establish priorities and procedures for conducting more detailed assessments.**

Before conducting an assessment, you must determine what will be measured, how costs will be assessed, who should be involved, and how the assessment will proceed. Identify potential obstacles and define the means for overcoming them. These obstacles will be less likely to impede the process if there is a mechanism for addressing them as they arise.

STEP 5 **Designate a detailed assessment team(s).**

Designate a team to perform detailed assessments (or an individual if staffing is tight).

STEP 6 **Conduct the assessment.**

An in-depth, comprehensive assessment is critical to a successful P2 plan. Experience has shown that only after a company realizes the true costs of its wastes will it have the motivation needed for an ambitious P2 effort. Also, by assigning waste costs to specific department budgets, greater efforts to eliminate costs associated with waste are likely to occur. An in-depth waste assessment helps a business to identify:

- Sources, compositions, and the true costs of wastes.
- Potential P2 opportunities and the benefits of acting on these opportunities.
- Obstacles to implementing P2 opportunities.

For a very small business, an in-house waste assessment might consist of a visual inspection of what goes into the trash dumpster, followed by research into local opportunities for recycling cardboard, office paper, plastic packaging, and other easy-to-recycle materials. Businesses with more complex operations should perform a walking tour of the facility, observing the various points of waste generation and the conditions with the potential for causing accidents, health hazards, or environmental emissions. Discussions with operational staff can reveal additional useful information. Other sources of important information include records of waste disposal costs, environmental compliance documents, and raw materials purchase invoices. Identify the wastes that cost the most due to volume, disposal, or toxicity to help identify good P2 options.

Additionally, a business can request an Integrated Assessment that identifies P2 and compliance assistance opportunities within their facility.

For a free, confidential, integrated assessment, complete the Pre-Assessment Survey at **Michigan.gov/P2IntegratedAssessment**.

Businesses may also wish to have an assessment conducted by a professional technical consultant to characterize wastes and perform a cost-benefit analysis of each P2 option. If the facility can research the topic, there may even be a 'self-audit' checklist available to identify your own areas of focus. Contact your trade associations, business forums, or others for self-checklists or guidance.

STEP 7 **Identify potential pollution prevention opportunities.**

Once the information is collected and summarized, team members should discuss possible alternatives to reduce or eliminate waste and toxic materials, energy or resource intense processes, and/or ways to recycle waste streams. An initial list of P2 opportunities can typically be developed with simple brainstorming.

STEP 8 **Perform technical and economic analyses on potential P2 opportunities.**

Based on a set of selection criteria, an examination of the technical workability of P2 opportunities should occur, followed by an evaluation of cost and environmental impacts of each opportunity. This requires consideration of all costs and benefits involved, such as decreases in operating costs; changes in regulatory burden; future liabilities; and improvements in productivity, worker safety, environmental protection, and quality management practices.

Projects can vary from easy to hard; inexpensive to costly. When considering costs, think in terms of return on investment and long-term impacts. A stock investment with a 10 percent return per year is considered good. Note that this would require 10 years for the stock to fully pay back that initial investment. If an investment in waste, resources, or energy reduction saves enough money to pay for itself in 5-7 years, that's better payback than the stock market! In addition, it is likely that costs for waste disposal, energy, water, and other resources will only increase over time, making the payback timeline even shorter.

The P2 team should investigate possible funding sources for those projects that require capital investment. A financial analysis of any project is helpful in requesting funding. Members of the financial departments should be included in this process. Options with the highest rate of return should be presented to management as final recommendations. For energy related projects, see the funding discussion under Section 12.3.3.

STEP 9 **Develop an implementation plan.**

With management's decision to act upon given P2 opportunities, steps to create waste, toxics, resource, water, and energy reduction actions must be designed. Financial and personnel resources must also be designated. An excellent financial resource is available from the Small Business Pollution Prevention Loan Program. Low-interest loans of up to $400,000 are available to small businesses of 500 employees or less, for financing P2 projects.

Visit **Michigan.gov/P2Loan** for more information about the P2 Loan Program. 

It is important that each step of the implementation plan be approved by the P2 team. For each step or action to be taken, clearly indicate the following:

- Action to be implemented.
- Person or persons responsible for implementation.
- Possible barriers and ways to overcome them.
- Timeline for action to be completed.

STEP 10 **Implement the selected projects.**

Inform all employees about the selected P2 projects and begin the implementation phase. All involved employees should have a clear understanding of the purpose of the P2 project and their role in implementing it. The pollution prevention team members should lead other employees and provide guidance in the implementation process.

STEP 11 **Evaluate project effectiveness and document results.**

By reviewing the program's successes and failures, managers can assess the degree to which P2 goals are being met and what the economic results have been. The comparison identifies P2 techniques that work well and those that do not. This information helps guide future P2 assessment and implementation cycles. In order to evaluate project effectiveness, a set of baseline data (gathered during the waste assessment phase/Step 6) should be used to measure progress. Periodically conduct tests to determine if and where waste and hazards have been reduced. Results should be documented. This is a good way to determine if alternative production methods are working as expected. It is also an opportunity to re-evaluate methods and make any corrections.

STEP 12 **Celebrate positive results and learn from negative results.**

Once the results are known, celebrate the positive steps forward. Are you purchasing fewer toxic materials and reducing hazardous wastes? If so, this means you're reducing the exposure to your employees as well as the disposal costs. Post the information where employees and the public can see what you're doing to save money and protect the environment as well as the health of your employees and customers. As we all know, not all new projects are successful. If you find a P2 project isn't working as expected, determine if it can be improved or if something different is needed, or if it should be shelved until new resources are available. Learn from the experience but keep working on improvements.

STEP 13 **Modify the plan as needed and select the next steps to be taken.**

The P2 plan should evolve as the P2 program proceeds. Goals once achieved can be expanded or new goals can be set, and policies can be revised. Maintaining a viable P2 program requires continued support and involvement from management and everyone involved in planning and implementation. With support and enthusiasm from respected persons within the company, employees at all levels can and will want to participate. Pollution prevention can become a part of quality management practices, contributing to the company bottom line.

12.1.4 COMMON POLLUTION PREVENTION OPPORTUNITIES AND TECHNIQUES

There are several ways to increase efficiency and prevent waste in all aspects of a business. The following is a brief review of some of the most common P2 opportunities and techniques a business can use to achieve its P2 goals.

12.1.4.a Cost Accounting

Experience has shown that the most successful P2 programs are those that account for the true cost of wastes, including expenses for lost raw materials; staffing; needed paperwork and insurance; sample analyses; and storage, treatment, and disposal costs. Successful billing strategies to account for the true costs of wastes include the following approaches:

- Charge direct and indirect costs of all air, land, and water discharges to specific processes, products, or departments.
- Allocate treatment/disposal costs to operations/departments that generate the waste.
- Allocate utility costs to specific processes, products, operations, or departments.

Once all the true costs of the various processes or products are known, you may determine if the waste, toxic substances use, resource use, and energy costs for a particular product are much larger than expected or identify the source of most of the hazardous waste. These are good areas to focus P2 efforts to reduce costs and liabilities.

12.1.4.b Purchasing and Inventory Management

A purchasing policy on non-toxic and energy-efficient alternatives can result in significant improvements, but purchasing staff need guidance on what those alternatives are. Purchasing changes are probably the easiest and most powerful means of reducing toxics that result in hazardous waste and employee exposures as well as reducing energy usage. This can also impact the companies you select to purchase from. Select suppliers or manufacturers who also exhibit your same environmental commitment. This also opens up a market for your products.

- Order products according to need. The cost associated with the disposal of surplus hazardous materials or the resulting hazardous wastes often exceeds the purchase price of the item or raw material. A non-toxic alternative that does not generate hazardous waste may reduce those costs, risks, and regulatory oversight.
- A coordinated material purchasing program can monitor all requests for products throughout the company or plant and implement efficient purchasing policies.
- An inventory control program can promote sharing of materials between common users, provide data on who is using extremely hazardous products, identify large volume users, locate unused materials, and identify where waste reduction/material substitution options are viable. Inventory control should rotate stock on a first-in, first-out basis.

12.1.4.c Packaging, Shipping, and Containers

A second look at the transportation and product packaging that companies send and receive often leads to waste reduction without sacrificing product safety or quality.

- Request that deliveries be shipped in returnable/recyclable/reusable containers.
- Work with suppliers and customers to eliminate excess packaging.
- Increase your use of reusable shipping containers and recycled or recyclable packaging.
- Purchase products in bulk, in concentrated form, or in quantities matching process demand.
- Incorporate language into contracts specifying P2 requirements or preferences.

12.1.4.d Solvent Substitution, Green Cleaners, and Safer Chemicals

Regulatory and cost pressures, along with worker safety and liability issues, have led to the development of alternative cleaning technologies, safer solvents, and improved cleaning and recovery equipment. In recent years, new programs have developed to certify what are 'green' cleaning materials and processes. Green Seal is one certification program and provides a list of certified green cleaners at **GreenSeal.org**. Implementing safer, green cleaning technologies has become easier and often only requires purchasing materials off the shelf or from a good supplier that also provides training. Facilities that want to do their own research will need:

- A better understanding of the chemistry, mechanics, and other fundamentals of cleaning.
- A clear determination on how clean equipment or process materials truly need to be.
- A review of upstream processes/practices and how they influence the cleaning process.
- An awareness and understanding of the pros and cons of potential alternatives.
- Some degree of modification of both up- and down-stream processes and practices.
- A significant experimentation and learning period for identifying appropriate and effective alternative cleaners, optimizing cleaner concentrations and cleaning times, adjusting equipment and process operations, and modifying employee practices.

In general, pollution prevention opportunities for solvent cleaning processes include:

- Using alternative cleaning technologies such as:
    - Aqueous and semi-aqueous cleaning processes.
    - Thermal and steam cleaning processes.
    - Abrasive blasting using dry ice, baking soda, starch, plastic, and other media.
    - Supercritical carbon dioxide solvent cleaning.

- Using alternative/less hazardous solvents with low vapor pressure, low toxicity, or non-ozone-depleting characteristics such as lactic acid, dimethyl esters, DMSO, n-methyl pyrrolidone, glycol ethers, terpenes, soybean, and other bio-based solvents. Web sites that may be useful to identify alternative solvents include:
    - CleanGredients list of solvents: CleanGredients.org
    - Clean Production Action's 'Green Screen for Safer Chemicals' program is a guide for decision making towards the use of the least hazardous materials: CleanpPoduction.org/programs/Greenscreen
    - USEPA Safer Choice: epa.gov/saferchoice
- Extending solution life by pre-cleaning, using in-line filtration, countercurrent flows, reducing drag-out and evaporative losses, and removing sludge and surface oils/scum.
- Reclaiming/recycling spent solvents using distillation, filtration and vapor recovery equipment, and off-site recycling services.
- Evaluating and modifying upstream processes and practices, solvent handling/storage practices, and employee practices for reducing solvent waste generation.

12.1.4.e Water

Water usage and wastewater discharge treatment entail substantial costs for many businesses and manufacturers. By metering water usage and regularly taking inventory of all water users, companies can reduce a major operating expense and reduce the demands on wastewater treatment facilities. Additionally, reducing water usage generally saves energy with less water needing to be pumped. Funding for some water efficiency steps may be provided by your local utility. Reducing water usage reduces water bills as well as the amount of wastewater that requires costly treatment.

- Cleaning Systems: Replace high-volume hoses with high-pressure, low-volume cleaning systems.
- Cooling Towers: Install or replace conductivity controllers on cooling towers to reduce the amount of blowdown water wasted. A medical supplier replaced a controller on an existing tower and reduced their annual water usage by 34 percent or over 437,000 gallons. Reuse treated wastewater for cooling water. Reuse cooling tower blowdown waters for other purposes like cleaning air scrubbers.
- Equipment: Purchase water efficient equipment and appliances including cafeteria dish washers, laundry washing machines, dual flush toilets, waterless urinals, etc. See the USEPA's WaterSense Web site at: epa.gov/WaterSense.

- Graywater: Separate out graywater from treatment waters and sanitary wastes so they can be reused in other non-potable applications such as landscape irrigation or toilet flushing during expansions, renovations or new construction.
- Landscaping: Use native plantings to reduce or eliminate potable water use for irrigation or reuse on-site accumulated storm water.
- Irrigation Systems: Conduct routine irrigation system audits and inspections to maintain the system and prevent undetected, inefficient water loss.
- Non-contact Cooling Water: Once through non-contact cooling water should be replaced by a closed-loop cooling water system.
- Rinsing: Use countercurrent rinsing and equip all hoses with shut-off nozzles.
- Storm water reuse: Capture storm water and use it for irrigation, toilets or non-critical process usage.
- Valves: Install automatic shut-off valves on equipment to stop water flow when not in use.
- Wastewater Reuse: Investigate the reuse of treated wastewater for separately supplied, non-potable uses. This could include cleaning air scrubbers; floor washing; fire response supply (confirm this is acceptable with related regulatory staff); landscaping; toilets; etc.
- Water Demand: Determine if the need for water is critical or could be reduced or eliminated.
- Water Treatment Costs: Determine if the pollutants that require expensive treatment could be eliminated from the wastewater sources rather than do expensive treatment.

12.2 ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS)

An EMS is based on the International Organization for Standardization's environmental framework - ISO 14001. The EMS creates an overall site-specific management system that addresses environmental concerns through the allocation of resources, assignment of responsibilities, and ongoing evaluation of practices, procedures, and processes to achieve sound environmental performance. Each EMS is created by a site-specific team of employees and takes into account the geographic location, stakeholder and employee concerns, past uses of the site, corporate goals, and other factors when designing goals and objectives to achieve positive environmental/financial results.

Once your facility has an EMS in place, consider applying for the Michigan Clean Corporate Citizen (C3) designation for positive recognition and collaborative opportunities. For C3, EMS, or ISO 14001 assistance, call EGLE's Environmental Assistance Center at 800-662-9278.

ISO 14001 Environmental Standard

Environmental Policy and Scope

Environmental Planning

- Identifying Aspects and Impacts
- Significance Ranking
- Setting Objectives and Targets
- Environmental Management Programs (EMPs)

Implementation and Operation

- Roles, Responsibilities, Time Frames
- Training and Competence, Communication
- Controls and Documentation
- Emergency Preparedness

Monitoring and Measurement

- Evaluation of Compliance
- Dealing with Non-conformances
- Corrective and Preventative Actions
- Records
- EMS Audit Program and Procedures

Implementation of an EMS does not substitute for compliance with regulations but can improve your compliance record and help you address issues that are not covered by regulation. In short, environmental management is an ongoing improvement process propelled by the desire to comply with regulations and operate cost effectively. Fully developing and integrating an EMS into your day-to-day management processes and operations is a more effective way of doing business.

12.2.1 BENEFITS OF AN ENVIRONMENTAL MANAGEMENT SYSTEM

Developing and implementing an EMS for your Michigan business can help improve your triple bottom line, thus improving the economic, environmental, and social benefits derived from your business operations. It can also help you qualify for Clean Corporate Citizen (C3) designation. By bringing environmental factors into daily business decisions, implementation of an EMS helps accomplish the following:

- **Reduce costs** – Facilities that have implemented an EMS show improved operating efficiency by focusing on important issues, developing standard procedures, and increasing employee training. Most companies have reported reduced costs through the systematic process of identifying potential risks and impacts. Some facilities have earned favorable status on financial indexes based on their reduced legal liability, reduced likelihood of catastrophic occurrences, and improved environmental and social responsibility.
- **Assume a competitive advantage** –Consumers and manufacturers give preference to products from environmentally responsible suppliers. An EMS can help obtain that "green" image. Several larger companies in the U.S., especially in the automotive and electronic sectors, have mature systems and are now requiring (or strongly encouraging) that their suppliers implement an EMS.
- **Improved image with stakeholders** – An EMS can improve your image and give credibility to your environmental programs. Your local politicians, environmental regulators, and community groups see development of an EMS as an indication of a good corporate citizen and the willingness to go beyond compliance. Accordingly, they recognize and reward these efforts.
- **Enhance regulatory compliance** – An EMS can help improve regulatory compliance and reduce liabilities associated with noncompliance. The adoption of procedures, work instructions, and additional training programs typically adds consistency and stability to business operations. It enables improved control over potential impacts and helps anticipate and control upsets.
- **Improve environmental performance** – The systematic identification of potential environmental impacts and continual improvement goals lead to more efficient business operations. Achieving these goals will lead to improved performance, a cleaner environment, and a sustainable community.

12.2.2 STAGES OF ENVIRONMENTAL MANAGEMENT SYSTEM DEVELOPMENT

Typically, an EMS undergoes three states of maturity:

1) In the years 0 – 2, the EMS is developed and implemented (internal value systems).
    a. Large changes are typically avoided in these years.
    b. Tends to be reactive, often focusing on "end-of-pipe" controls.
    c. Staff strive to fully understand ISO 14001 (or other) requirements.
    d. The system focuses on learning how to communicate to stakeholders.
    e. It establishes what and how to disclose information to the public.
    f. Tends to be driven by one person (typically the Environmental, Health and Safety leader).

g. There is limited involvement and/or buy-in.
h. Determination of significant aspects and hazards is often complex and time consuming.
i. Management provides resources, but their involvement is minimal.
j. Very simple metrics are used to report results toward goals.

2) The years 2 – 5 can be described as deployment.
   a. Linkages within the system are strengthened.
   b. EMSs are in conformance with standard requirements.
   c. Benefits (social, environmental, financial) are demonstrated.
   d. Alignment with other requirements and systems becomes integrated (quality, health, safety, security, environmental, purchasing, etc.).
   e. Consistent metric systems are established for measuring and reporting results and trends.
   f. It moves away from a one-person driven system to include a cross-functional team.
   g. Objective and targets tend to be modest.
   h. Corrective and preventative action processes tend to be weak.
   i. Communication and reporting systems are being refined.
   j. Cultural change is starting.

3) Five+ years the EMS is mature or an external value system.
   a. Stakeholders are involved with EMS review.
   b. The organization achieves and maintains high levels of performance.
   c. Value is demonstrated.
   d. Efficiency through process improvements is a primary activity.
   e. Inclusion of collected data in strategic planning takes place.
   f. Corrective and preventive action processes are well established.
   g. Objectives and targets are “stretch” goals.
   h. There is a high level of management involvement.
   i. The management system serves as a launch pad for new initiatives.
   j. Metrics are well established and support business goals.
   k. Employees are held accountable for performance.
   l. Management is committed to environmental protection (including the allocation of resources and time and the assignment of responsibility).

12.3 ENERGY

Energy use is often seen as a key area where, through efficiency and conservation, operating costs can be readily controlled and often significantly reduced. Energy savings can be achieved by simple changes in daily operations, maintenance practices, and worker habits, and can be implemented at little or no cost. Although more significant energy savings may involve investment in new/upgraded equipment, these simple changes typically have excellent financial returns.

12.3.1 ENERGY EFFICIENCY

Basic energy efficiency steps to consider include:

- Submeter electrical energy usage for detailed information on when, how, and where electrical energy is used. Some pricing is based on time of day and peak usage. Changing or staggering startup times may save money at no cost. Knowing how and where energy is used is critical to identifying major usage to focus energy efficiency efforts and gain best savings.
- Maintain equipment and the facility through an ongoing maintenance program.
    - Furnaces
        - ✓ Analyze flue gas and adjust the fuel-air ratio to increase efficiency.
    - Process Heat, Heat Recovery, and Heat Containment
        - ✓ Enhance sensitivity of temperature control and cutoff.
        - ✓ Use flue gas waste heat to preheat combustion air.
    - Process Cooling: Cooling Towers and Chillers/Refrigeration
        - ✓ Use a cooling tower instead of refrigeration when outside temperature allows.
        - ✓ Use waste heat for absorption refrigeration.
    - Motors and Drives
        - ✓ Develop an ongoing motor replacement program to upgrade existing motors to high efficiency motors. Where power factor is not controlled elsewhere in the shop, choose replacement motors with high power factor.
        - ✓ Use variable speed drives to control motor speeds where varying pump or fan flows can be utilized.
    - Compressed Air Systems
        - ✓ Compressed air is almost always the most expensive means for performing work at a facility and should only be used when essential.
        - ✓ Establish a vigorous maintenance program and check for leaks often.
        - ✓ Operate the system at the lowest acceptable pressure.
    - Electrical Power
        - ✓ De-energize excess transformer capacity and increase power factor for facilities and equipment by installing the proper combination of fixed and variable capacitance.

- Heating, Ventilation, and Air Conditioning (HVAC) Equipment
  - ✓ Develop an optimal start/stop schedule for your HVAC system.
  - ✓ Use seven-day, programmable thermostats to coordinate system operations with occupancy loads.
  - ✓ Install variable air volume systems where practical.
  - ✓ Install an airside, rooftop, central, or waterside economizer to use outside air to cool the space when outside temperatures allow.
- Lighting
  - ✓ Install low-mercury T-8 or T-5 fluorescent systems with electronic ballasts or LEDs (light-emitting diodes).
  - ✓ Remove two out of four tubes in fluorescent fixtures where lower light levels are acceptable. Also, disconnect the ballast that operates these tubes to save even more energy (especially magnetic ballasts). If necessary, install reflectors or higher output lamps so more light is utilized.
  - ✓ Install low-wattage, long-life, LED exit signs or bulbs.
  - ✓ Use high-efficiency halogen, low-voltage halogen, quartz, or LED lamps where lighting quality is critical (e.g., retail displays).
  - ✓ Replace mercury vapor or other inefficient, high-intensity, discharge lighting systems with an efficient, metal halide, sodium, or other high-output fluorescent system.
  - ✓ Tailor lighting levels to the task and occupants and increase the use of "task lighting."
  - ✓ Rewire fixtures or use dimming controls so unnecessary lighting can be turned off.
  - ✓ Install occupancy sensors in areas of sporadic use. (Examples include supply closets and restrooms.)
  - ✓ Install light sensors near windows to shut down light sections on bright sunny days.
- Office Equipment
  - ✓ When purchasing new equipment, buy Energy Star©, or higher efficiency models. Also compare the "Energy Guide" label included on many major appliances to determine the more efficient model.
  - ✓ Consider installing Energy Management software on servers to control sleep and shutdown modes of desktop computers.

12.3.2 RENEWABLE ENERGY ZONING DATABASE

In February 2020, EGLE launched a unique searchable database of municipal ordinances across Michigan that address siting for renewable energy installations. The database was developed in collaboration with the Graham Sustainability Institute at the University of Michigan.

Over half of Michigan's more than 1,800 municipalities have considered renewable energy in their zoning ordinances. The renewable energy zoning database is the first compilation of all renewable energy ordinances across the state and the first database of its kind in the nation.

The database is an in-depth resource guide for municipalities developing ordinances or for developers looking to site wind, solar, or other alternative energy projects. At-a-glance maps updated in real time will help users to quickly determine which municipalities are primed for renewable energy development with existing ordinances.

12.4 REUSE, RECYLING AND MARKET DEVELOPMENT

12.4.1 RECYCLING DIRECTORIES

The Recycled Materials Market Directory (RMMD) available at **Michigan.gov/EGLERMMD** is a searchable online directory for businesses looking to divert materials from landfill disposal. This tool connects businesses with companies located in Michigan and across the Midwest that accept materials for reuse or recycling. The directory provides specific information about a company's service area, acceptable materials, other services provided and contact information. Businesses looking to reduce their waste to landfill can use the RMMD as an easy way of locating recycling service providers in your area. As a business-to-business directory, the RMMD is populated with organizations that accept commercial volumes of recyclable materials.

Businesses can also use the Michigan Materials Marketplace to connect with other businesses and develop and scale new reuse and recycling opportunities for challenging waste and by-product materials. Learn more and join today at **Michigan.MaterialsMarketplace.org**.

An organization that accepts recyclables generated from the residential sector only or residents looking for collection options, can visit **Michigan.gov/RecyclingDirectory**.

12.4.2 SCRAP TIRE MARKET DEVELOPMENT & LAW ENFORCEMENT GRANT PROGRAM

EGLE administers Scrap Tire Market Development Grants to reimburse up to 50 percent of the cost to purchase scrap tires to support the development of increased markets for scrap tires. Grant funding is also available to reimburse up to 50 percent of the cost of purchasing equipment or for research and development to provide for a new or increased use for scrap tires.

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for sustainability topics

Pollution Prevention (P2) Program Assistance
800-662-9278 | **Michigan.gov/p2**

Integrated Assessments
Michigan.gov/P2IntegratedAssessments
800-662-9278 | **RogersC1@michigan.gov**

EMS Development / Michigan's Clean Corporate Citizen (C3) Program
800-662-9278 | **dodged1@michigan.gov**

EMS Standards
American National Standards Institute (ANSI): 212-342-4900 | **ansi.org**
Registrar Accreditation Board (RAB): 888-722-2440 | **anab.org**

Responsible Care Management Systems
ResponsibleCare-us.com

American Chemistry Council
AmericanChemistry.com

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Appendix A

Acronyms

APPENDIX D – ACRONYMS

A

AST ..... Aboveground Storage Tank
ARI ..... Air Conditioning and Refrigeration Institute
ASTM ..... American Society for Testing and Materials

B

BACT ..... Best Available Control Technology
BAT ..... Best Available Treatment
BEA ..... Baseline Environmental Assessment
BTU ..... British Thermal Units

C

C3 ..... Clean Corporate Citizen Program
CAA ..... Clean Air Act
CAP ..... Corrective Action Plan
CAS ..... Chemical Abstract Service
CDL ..... Commercial Driver's License
CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as Superfund)
CFC ..... Chlorofluorocarbon
CFR ..... Code of Federal Regulations
CMR ..... Critical Materials Register
CNG ..... Compressed Natural Gas
CO2 ..... Carbon Dioxide
CO ..... Carbon Monoxide
CWA ..... Clean Water Act

E

EA ..... Environmental Assessment
EAC ..... Environmental Assistance Center (of EGLE)
EGLE ..... Environment, Great Lakes and Energy (Department of)
EHS ..... Extremely Hazardous Substance
EMS ..... Environmental Management System
EMU ..... Environmental Monitoring Unit
EPCRA ..... Emergency Planning and Community Right-To-Know Act
ESA ..... Environmental Site Assessment

F

FDA ..... United States Food and Drug Administration
FL/CL ..... Flammable and Combustible Liquids
FP ..... Flashpoint
FR ..... Federal Register
FRP ..... Facility Response Plan

H

HAPs ..... Hazardous Air Pollutants
HAZWOPER ... Hazardous Waste Operations and Emergency Response
HCFC ..... Hydrochlorofluorocarbons
HVAC..... Heating, Ventilation, and Air Conditioning

I

ICP ..... Integrated Contingency Plan
IPP ..... Industrial Pretreatment Program
IRSL ..... Initial Risk Screening Level
ISO ..... International Organization for Standardization
ITSL..... Initial Threshold Screening Level

L

LARA ..... Michigan Department of Licensing and Regulatory Affairs
LDR..... Land Disposal Restriction
LEO ..... Labor and Economic Opportunity (Department of)
LEPC ..... Local Emergency Planning Commission
LPG ..... Liquefied Petroleum Gas
LUST ..... Leaking Underground Storage Tanks

M

MAC ..... Michigan Administrative Code
MACT ..... Maximum Achievable Control Technology
MAERS ..... Michigan Air Emissions Reporting System
MBP3 ..... Michigan Business Pollution Prevention Partnership
MCL ..... Michigan Compiled Laws
MEK..... Methyl Ethyl Ketone
MIOSHA..... Michigan Occupational Safety and Health Act
MSP ..... Michigan State Police
MUSTA..... Michigan Underground Storage Tank Authority
MUSTR ..... Michigan Underground Storage Tank Regulations

N

N ..... Nitrogen
NAAQS..... National Ambient Air Quality Standards
NARA ..... National Archives and Records Administration
NAICS ..... North American Industrial Classification System
NESHAPs..... National Emission Standards for Hazardous Air Pollutants
NFIP..... National Flood Insurance Program
NFPA..... National Fire Protection Association
NIOSH..... National Institute for Occupational Safety and Health
NPDES ..... National Pollutant Discharge Elimination System
NOx ..... Nitrogen Oxide

NO_2 ..... Nitrogen Dioxide
NOI..... Notice of Intent
NSF..... National Science Foundation
NSPS ..... New Source Performance Standards
NRC ..... National Response Center (of the USCG)
NRC ..... Nuclear Regulatory Commission
NREPA ..... Natural Resources and Environmental Protection Act (Public Act 451 of 1994)

O

OGM ..... Oil, Gas, and Minerals
OLEM..... Office of Land and Emergency Management (U.S. EPA)
O2 ..... Oxygen
ORM..... Other Regulated Material
OSHA ..... Occupational Safety and Health Administration/Occupational Safety and Health Act

P

P2 ..... Pollution Prevention
Pb ..... Lead
PCB ..... Polychlorinated Biphenyl
PEAS..... Pollution Emergency Alerting System
PEL ..... Permissible Exposure Limits
PERC..... Perchloroethylene
PID..... Photoionization Meter
PIPP ..... Pollution Incident Prevention Plan
PM ..... Particulate Matter
POTW ..... Publicly Owned Treatment Works
PPE..... Personal Protective Equipment
PPM..... Parts Per Million
PSD..... Prevention of Significant Deterioration
PSI ..... Pounds per Square Inch
psia..... Pounds per Square Inch-Atmosphere
PTE ..... Potential to Emit

R

RACT..... Reasonable Available Control Technology
RAM..... Radioactive Material
RBCA ..... Risk Based Corrective Action
RBSL..... Risk Based Screening Level
RCRA ..... Resource Conservation and Recovery Act
RRD ..... Remediation and Redevelopment Division (of EGLE)
RMP..... Risk Management Plan
ROP..... Renewable Operating Permit
RQ ..... Reportable Quantity

S

SARA ..... Superfund Amendments and Reauthorization Act of 1986
SCC..... Source Classification Code
SCF ..... Standard Cubic Foot
SCFM..... Standard Cubic Feet per Minute
SDS ..... Safety Data Sheet
SERC ..... State Emergency Response Commission
CET ..... Consultation Education & Training Division (of MIOSHA)
SIC ..... Standard Industrial Classification Code
SNAP ..... Significant New Alternatives Policy
SO2 ..... Sulfur Dioxide
SPCC ..... Spill Prevention, Control, and Countermeasures
SRSL..... Secondary Risk Screening Level
STEL ..... Short-term Exposure Limits
STU ..... Storage Tank Unit
SWPPP ..... Storm Water Pollution Prevention Plan

T

TAC ..... Toxic Air Contaminant
T-BACT..... Best Available Control Technology for Toxics
TCE ..... Tetrachloroethylene
TCLP ..... Toxicity Characteristic Leaching Procedure (RCRA)
TENORM..... Technologically Enhanced Naturally Occurring Radioactive Material
TLV..... Threshold Limit Value
TPQ ..... Threshold Planning Quantity
TQ ..... Threshold Quantity
TRI ..... Toxic Release Inventory
TSCA ..... Toxic Substances Control Act
TSDF ..... Treatment, Storage, and Disposal Facility
TWA ..... Time Weighted Average

U

USC..... United States Code
USCG ..... United States Coast Guard
USACE ..... United States Army Corps of Engineers
USEPA ..... United States Environmental Protection Agency
USDOT ..... United States Department of Transportation
UST ..... Underground Storage Tank
UV ..... Ultraviolet

V

VD..... Vapor Density
VOC ..... Volatile Organic Compound

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Appendix B

Definitions of Regulated Materials

APPENDIX B: DEFINITIONS OF REGULATED MATERIALS

CAA Section 112(r) Substances
Any of 77 toxic substances and 63 flammable substances regulated under the accident prevention provisions of Section 112(r) of the Clean Air Act (CAA) and listed in Title 40, Part 68 of the Code of Federal Regulations. The list of CAA Section 112(r) substances is included in the "List of Lists" described below.

Extremely Hazardous Substances (EHSs)
A substance defined in SARA Title III, Section 302. The EHSs are listed in Appendices A and B of Title 40, Part 355 of the Code of Federal Regulations. The EHSs are included in the "List of Lists" described below.

Flammable and Combustible Liquids (FL/CL)
As defined by the Michigan Fire Prevention Code, Public Act 207 of 1941, flammable and combustible liquids have a flashpoint below 200 degrees Fahrenheit. The local authorities oversee Part 2 of the FL/CL Rules that apply to individual containers and drums 60 gallons and smaller and portable tanks 660 gallons and smaller. The Department of Licensing and Regulatory Affairs, Storage Tank Program oversees containers and tanks larger than these volumes.

Flammable and Combustible Liquids-Act 207
As defined by the Michigan Fire Prevention Code, Public Act 207 of 1941, as amended (Act 207). "Flammable liquid" is a liquid having a flashpoint (FP) below 100° Fahrenheit and a vapor pressure not exceeding 40 pounds per square inch absolute at 100° Fahrenheit. "Combustible liquid" is a liquid having a FP at or above 100° Fahrenheit and below 200° Fahrenheit.

Flammable and Combustible Liquids-MIOSHA
As defined by Part 75 of the MIOSHA, General Industry Safety Standards. "Flammable liquid" is a liquid with an FP below 100° Fahrenheit except any mixture having components with FP of 100° Fahrenheit or higher, the total volume of which make up 99% or more of the total volume of the mixture. "Combustible liquid" is a liquid with FP at or above 100° Fahrenheit.

Hazardous Air Pollutants (HAPs)
187 air contaminants identified in the Clean Air Act Amendments of 1990 that may cause serious illnesses and environmental damage.

Hazardous Chemicals
As defined by the Emergency Planning and Community Right-To-Know Act (EPCRA), "hazardous chemical" has the meaning given in Title 29, Section 1910.1200(c) of the Code of Federal Regulations. They are any substance for which your facility must maintain a SDS under OSHA's Hazard Communication Standard/Employee Right-To-Know but does not include the following: (1) Any food,

food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration; (2) any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use; (3) any substance used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public; (4) any substance used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual; (5) any substance used in routine agricultural operations or fertilizer held for sale by a retailer to the ultimate customer.

Hazardous Materials-EGLE
As defined by the Hazardous Materials Transportation Act, Public Act 368 of 1999, as amended; "hazardous materials" include hazardous waste and liquid industrial by-product.

Hazardous Materials-Act 207
As defined by the Michigan Fire Prevention Code, Public Act 207 of 1941. "Hazardous materials" are explosives, pyrotechnics, flammable gas, flammable compressed gas, nonflammable compressed gas, flammable liquid, combustible liquid, oxidizing material, poisonous gas, poisonous liquid, irritating material, etiologic material, radioactive material, corrosive material, or liquefied petroleum gas.

Hazardous Material-USDOT
As defined in Title 49, Part 171.8 of the Code of Federal Regulations. A "hazardous material" is a substance or material that has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and that has been so designated. The term includes **hazardous substances-CERCLA**, **hazardous waste,** marine pollutants, and elevated temperature materials. The table of hazardous materials is contained in 49 CFR 172.101.

Hazardous Substances-CERCLA
A substance subject to reporting requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and listed in Title 40, Part 302, Table 302.4 of the Code of Federal Regulations. The list of CERCLA hazardous substances is included in the "List of Lists" described below.

Hazardous Substances-Part 201
As defined under Part 201 (Environmental Remediation) of Public Act 451. "Hazardous substance" means one or more of the following, but does not include fruit, vegetable, or field crop residuals or processing by-products, or aquatic plants, that are applied to the land for an agricultural use or for use as an animal feed, if the use is consistent with generally accepted agricultural management practices developed pursuant to the Michigan Right to Farm Act: (i) any substance that the department demonstrates, on a case-by-case basis, poses a threat to the public health, safety, or welfare or the environment, considering the fate of the material, dose-response, toxicity, or adverse impact on natural resources; (ii) hazardous substance-CERCLA (2001 version of 40 CFR 302, Table 302.4)v; (iii) hazardous waste-EGLE, (iv) petroleum as described in Part 213 of Act 451.

Hazardous Waste

"Hazardous waste" is waste or a combination of waste and other discarded material including solid, liquid, semisolid, or contained gaseous material that, because of its quantity; quality; concentration; or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness or serious incapacitating but reversible illness, or may pose a substantial present or potential hazard to human health or the environment if improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous waste that is subject to the hazardous waste manifest requirements is a hazardous material-USDOT. To determine if a discarded material is a hazardous waste that must be documented on a manifest for disposal, see Chapter 2.4.

Liquid Industrial By-product

"Liquid industrial by-product" means any material that is produced by, is incident to, or results from industrial, commercial, or governmental activity or any other activity or enterprise, that is determined to be liquid by method 9095 (paint filter liquids test) as described in "Test methods for evaluating solid wastes, physical/chemical methods," USEPA publication no. SW-846, and that is discarded. Liquid industrial by-product does not include any of the following:

a) Hazardous waste regulated and required to be manifested under Part 111.

b) Septage waste regulated under Part 117.

c) Medical waste regulated under Part 138 of the public health code, 1978 PA 368, MCL 333.13801 to 333.13832.

d) A discharge to the waters of the state in accordance with a permit, order, or rule under Part 31.

e) A liquid generated by a household.

f) A liquid regulated under 1982 PA 239, MCL 287.651 to 287.683.

g) Material managed in accordance with Section 12102a.

To determine if a discarded material is a liquid industrial by-product that must be documented on a shipping document for disposal, see Chapter 2.3.

List of Lists

The USEPA has consolidated the listed chemicals into one document known as the "List of Lists." This document contains the lists of extremely hazardous substances, hazardous substances-CERCLA, CAA Section 112(r) substances, and toxic chemicals. EGLE's SARA Title III Web site (**Michigan.gov/SARA**) contains a link to the "List of Lists," as well as the searchable database.

Medical Waste

In accordance with Part 138 (Medical Waste Regulatory Act) of the Michigan Public Health Code, Public Act 368 of 1978, as amended, "medical waste" means any of the following that are not generated from a household, a farm operation or other agricultural business, a home for the aged, or a home health care agency:

a) 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.

b) 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

c) Pathological waste

d) Sharps

e) Contaminated wastes from animals that have been exposed to agents infectious to humans, these being primarily research animals.

f) Discarded p**ersonal protective equipment used to prevent the spread of COVID-19** is not a medical waste subject to Part 138 of Act 368 or the Part 138 rules.

Oil-EGLE Part 5

As defined by R 324.2001(e). Oil means oil of any kind or in any form, including but not limited to, any of the following: petroleum, gasoline, fuel oil, grease, oily sludges, oil refuse, oil mixed with waste, used oil, vegetable oil, and animal fats.

Oil-USEPA

Section 311(a)(1) of the Clean Water Act defines "oil" as "oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." The USEPA interprets this definition to include crude oil, petroleum, and petroleum-refined products, as well as non-petroleum oils such as vegetable and animal oils.

Petroleum-EGLE

As defined under Part 211 (Underground Storage Tank Regulations) of Public Act 451 of 1994. “Petroleum” includes crude oil or any fraction of crude oil that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). Petroleum includes but is not limited to mixtures of petroleum with de minimis quantities of other regulated substances, and petroleum-based substances composed of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, or finishing such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, and petroleum solvents.

Polluting Materials

As defined in the Part 5 rules pursuant to Part 31 (Water Resources Protection) of Public Act 451 of 1994, polluting materials include oil-EGLE Part 5, salt, regulated materials listed in R 324.2009 Table 1, and any compound or products that contain 1% or more by weight of these materials based on the material safety data sheet formulation.

Salt

Defined in R 324.2002(c) of the Part 5 rules pursuant to Part 31 (Water Resources Protection) of Public Act 451 of 1994, Salt means sodium chloride, potassium chloride, calcium chloride, and magnesium chloride, and solutions or mixtures of 1 percent or more of these compounds in solid or liquid form.

Toxic Air Contaminants

Defined in R 332.1120(f) of the Michigan Air Pollution Control Rules as any substance that is or may become harmful to public health or the environment except for 40 substances that have been specifically excluded.

Toxic Chemicals

Chemicals or chemical categories defined in Section 313 of the SARA Title III. Toxic chemicals, including those identified as persistent, bioaccumulative and toxic (PBT), are listed in Title 40, Part 372.65 of the Code of Federal Regulations. The list of toxic chemicals is included in the "List of Lists" described below.

Michigan Guide to
Environmental Regulations

Appendix C

EGLE Overview

APPENDIX C – MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE)

EGLE OVERVIEW

EGLE's mission is to protect Michigan's environment and public health by managing air, water, land, and energy resources. Working side-by-side with partners at the local, regional, and state levels, EGLE safeguards our state's environment while supporting the economic growth and development crucial for Michigan's future. As part of providing expert technical and pollution prevention assistance to businesses and individuals, EGLE performs approximately 30,000 site visits and inspections annually. EGLE employs about 1,100 scientists, engineers, geologists, toxicologists, inspectors, technicians, managers, biologists, and support staff across the state.

EGLE is responsible for the administration of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended, and the administrative rules promulgated under its authority.

EGLE DIVISIONS

Air Quality Division

The **Air Quality Division** (AQD) supports efforts to maintain clean air and minimize adverse impacts on human health and the environment. Staff work to reduce existing outdoor air pollution and prevent deterioration of air quality through air emission control programs, air monitoring, control strategy planning, permit issuance, and inspection of air emission sources.

Drinking Water and Environmental Health Division

The **Drinking Water and Environmental Health Division** (DWEHD) oversees Michigan's public water supplies to ensure safe drinking water. The division is involved in source water protection, operator certification and training, water well construction, registration of water well drilling contractors, assisting local health departments in conducting drinking water quality investigations, approving and licensing the handling of domestic septage, and oversight of the on–site wastewater program. The division is also responsible for the approval and licensing of campgrounds and public swimming pools.

Environmental Support Division

The **Environmental Support Division** is responsible for the department's proactive outreach efforts and support functions necessary to maintain an effective organization. The division prepares professional materials to support the department's communication strategy. The division hosts **live events, coordinates webinars**, produces videos, and develops publications. Working with program staff, the division assures public meetings and public hearings are professionally conducted. In addition, the division operates the **Environmental Assistance Center**, coordinates emergency response efforts, oversees the department's facilities, and provides training opportunities to staff.

Finance Division

The **Finance Division** is responsible for all financial aspects of the department from budget development to year end closing. The Finance Division director serves as the department's chief financial officer. The Finance Division oversees the **Michigan Underground Storage Tank Authority** and the Water Infrastructure Financing Section. The Michigan Underground Storage Tank Authority assures underground storage tank owners and operators can meet federal financial requirements necessary to operate in Michigan and provides a funding mechanism to address environmental issues. The **Water Infrastructure Financing Section** is responsible for providing funding mechanisms to assist communities with meeting water infrastructure needs.

Information Management Division

The Information Management Division establishes and implements department data management standards and processes for information tracking to support transparency and effective internal processes. The division is responsible for assessing information technology tools and strategies to meet the ever-changing business needs of the department. In addition, the division is responsible for coordinating the department's GIS initiatives, maintaining the department's web site, and overseeing Freedom of Information Act responses. The division contains a performance optimization section responsible for evaluating department processes, updating department procedures, tracking audits, and assuring corrective action plans are implemented.

Materials Management Division

The **Materials Management Division** (MMD) oversees the solid and hazardous waste programs, radioactive materials activities, radon awareness program, and energy program. The division oversees waste disposal, transportation, and storage as well as implementing strategies to support pollution prevention and beneficial uses of waste materials. Activities in the radiological area include coordinating with nuclear power plants, local emergency responders, and the federal government to ensure that Michigan has sufficient resources in the event of a radioactive material release.

Oil, Gas, and Minerals Division

The **Oil, Gas, and Minerals Division** (OGMD) oversees the development of fossil fuels and minerals while ensuring the protection of natural resources, the environment, property, and public health and safety. The division regulates the locating, drilling, operating, and plugging of wells used for exploration and production of oil, gas, brine, and minerals, as well as for underground storage and waste disposal. It also regulates mines for metallic minerals and industrial sand. Additionally, the division maintains a variety of maps and data on Michigan geology, fossil fuels, and minerals for industry and public use.

Remediation and Redevelopment Division

The **Remediation and Redevelopment Division** (RRD) oversees the remediation and redevelopment of contaminated properties in Michigan. The division administers two environmental cleanup programs, including the Environmental Remediation program and the **Leaking Underground Storage Tank program**. In addition, the division coordinates the implementation of Brownfield redevelopment financing for environmental response activities and manages portions of the federal Superfund program. RRD also oversees the **EGLE laboratory** responsible for drinking water and environmental testing.

Water Resources Division

The **Water Resources Division** (WRD) protects and monitors Michigan's waters by establishing water quality standards, assessing the health of aquatic communities, issuing permits to regulate wastewater dischargers, and overseeing aquatic invasive species concerns and water withdrawals. The division processes permit applications and provides technical assistance to local soil erosion and sedimentation control programs as well as activities like dredging or filling; constructing or dismantling dams; constructing marinas, seawalls, or docks; building in a designated critical sand dune, wetland, or floodplain; and protecting underwater shipwreck resources. WRD oversees and issues construction permits for all public wastewater infrastructure, requires asset management in NPDES permits to ensure proper maintenance, and oversees critical large-scale infrastructure improvements in the area of CSO/SSO control vital to the health of Michigan's waterways.

EGLE OFFICES

MPART Executive Director

The **Michigan PFAS Action Response Team** (MPART) **Executive Director** oversees the state's coordinated effort to address the threat of per- and polyfluoroalkyl substances (PFAS) contamination. The Executive Director serves as the chair of MPART and coordinates closely with various federal and state agencies on PFAS initiatives.

Office of the Clean Water Public Advocate

The **Office of the Clean Water Public Advocate** accepts and investigates complaints and concerns related to drinking water within the state of Michigan. The office establishes and implements processes in coordination with the divisions to report drinking water complaints and assists with resolution of complaints. The office is also responsible for preparing regular reports on the complaints received, resolution, and recommendations moving forward.

Office of Climate and Energy

The **Office of Climate and Energy** coordinates activities of state departments and agencies on climate response and provides insight and recommendations to state government and local units of government on how to mitigate climate impact and adapt to climate changes. The office is also responsible for developing and implementing strategies supporting reliable and environmentally sustainable energy for the future.

Office of the Environmental Justice Public Advocate

The **Office of the Environmental Justice Public Advocate** accepts and investigates complaints and concerns related to environmental justice within the state of Michigan. The office establishes and implements processes and reporting of environmental justice complaints and assists with resolution of complaints. The office prepares regular reports on the complaints received, resolution, and recommendations moving forward and represents the department on the state's Interagency Environmental Justice Response Team. This office partners closely with divisions on coordinating hearings and public meetings aimed at facilitating interactions with environmental justice communities.

Office of the Great Lakes

The **Office of the Great Lakes** oversees Great Lakes-related water policy and coordinates with the department's divisions as well as external stakeholders to assure alignment of Great Lakes policy and strategy implementation. The office represents the department in national forums regarding the Great Lakes and advises the director on Great Lakes strategies.

Office of Legislative Affairs

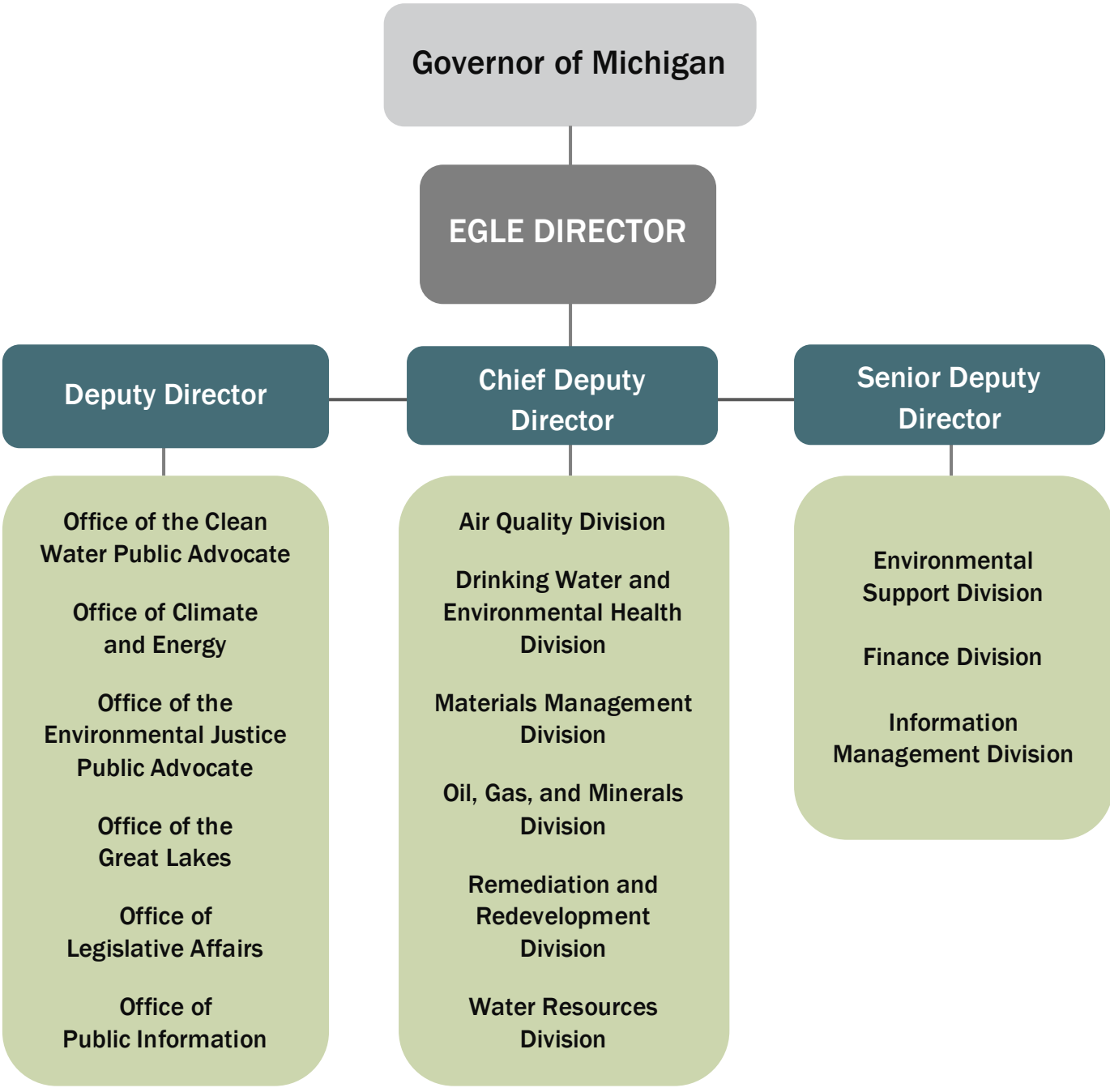
The **Office of Legislative Affairs** is the primary point of contact with the legislature and represents the department at various legislative meetings. The office coordinates constituent responses, tracks and assists with bill analysis, and facilitates preparation for legislative meetings. In addition, staff are responsible for assisting with developing the department's legislative priorities.

Office of Public Information

The **Office of Public Information** is responsible for serving as the primary point of contact with the media. The office prepares official department statements and press releases. The office is responsible for developing the department's overall communication strategy and coordinates closely with the Environmental Support Division to develop materials to support the department's communication strategy.

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

ORGANIZATIONAL STRUCTURE



CONTACT EGLE

Hours: Monday – Friday
8:00 am - 5:00 pm EST
Phone: 800-662-9278
Fax: 517-241-7401
Email: **EGLE-Assist@Michigan.gov**

You may also contact the appropriate EGLE district office directly.

Physical Address:
Constitution Hall
525 W. Allegan
Lansing, MI 48933

Mailing Address
P.O. Box 30473
Lansing, MI 48909

ENVIRONMENTAL EMERGENCY CONTACTS

To report an environmental emergency situation, dial the 24-hour Pollution Emergency Alert System (PEAS) at: 800-292-4706 (within Michigan) or 517-373-7660 (outside Michigan)

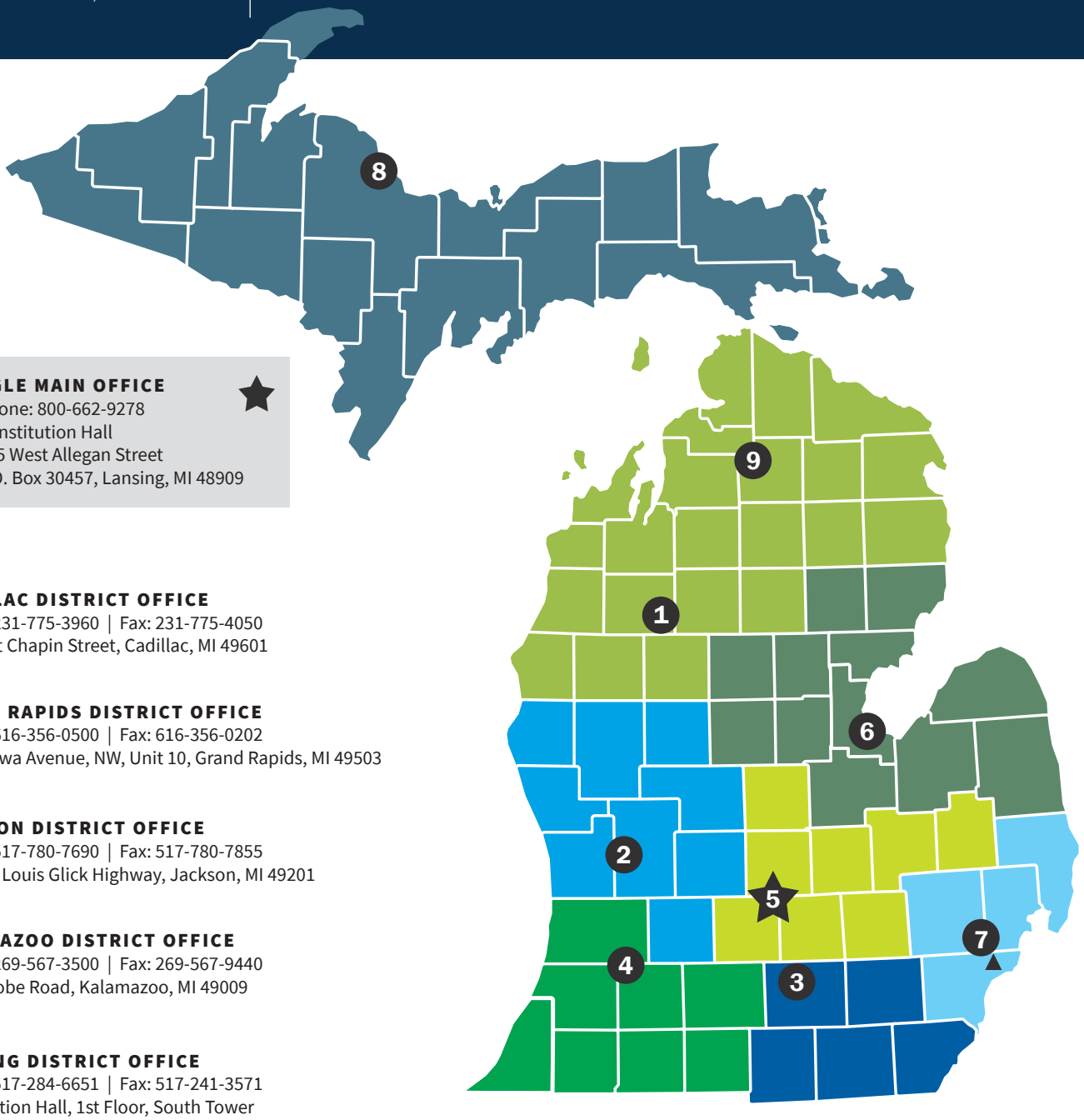
DISTRICT OFFICE LOCATIONS

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has established district and field offices to provide department services throughout the state. District and field office employees provide information about department programs, review and process permit applications, provide pollution prevention assistance to regulated entities, assess the compliance status of regulated entities, and meet with stakeholder groups to encourage public participation in the regulatory process.

The following map represents all of EGLE's ten district offices and their respective location and contact information.

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

District Offices



EGLE MAIN OFFICE
Phone: 800-662-9278
Constitution Hall
525 West Allegan Street
P.O. Box 30457, Lansing, MI 48909

1 CADILLAC DISTRICT OFFICE
Phone: 231-775-3960 | Fax: 231-775-4050
120 West Chapin Street, Cadillac, MI 49601

2 GRAND RAPIDS DISTRICT OFFICE
Phone: 616-356-0500 | Fax: 616-356-0202
350 Ottawa Avenue, NW, Unit 10, Grand Rapids, MI 49503

3 JACKSON DISTRICT OFFICE
Phone: 517-780-7690 | Fax: 517-780-7855
301 East Louis Glick Highway, Jackson, MI 49201

4 KALAMAZOO DISTRICT OFFICE
Phone: 269-567-3500 | Fax: 269-567-9440
7953 Adobe Road, Kalamazoo, MI 49009

5 LANSING DISTRICT OFFICE
Phone: 517-284-6651 | Fax: 517-241-3571
Constitution Hall, 1st Floor, South Tower
525 West Allegan Street, Lansing, MI 48933

6 BAY CITY DISTRICT OFFICE
Phone: 989-894-6200 | Fax: 989-891-9237
401 Ketchum Street, Suite B, Bay City, MI 48708

7 WARREN DISTRICT OFFICE
Phone: 586-753-3700 | Fax: 586-753-3831
27700 Donald Court, Warren, MI 48092

8 MARQUETTE DISTRICT OFFICE
Phone: 906-228-4853 | Fax: 906-228-4940
1504 West Washington Street, Marquette, MI 49855

9 GAYLORD DISTRICT OFFICE
Phone: 989-701-9920 | Fax: 989-731-6181
2100 West M-32, Gaylord, MI, 49735

Map includes 9 district offices, 1 field office, and Lansing lab

▲ *Field office in Detroit*

Michigan.gov/EGLE | 800-662-9278

03/2020

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Appendix D

MIOSHA Overview

APPENDIX D – MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (MIOSHA)

MIOSHA OVERVIEW

The Michigan Occupational Safety and Health Administration strives to work collaboratively with employers and employees to better prevent workplace injuries, illnesses, and fatalities. MIOSHA health and safety activities include setting and enforcing occupational safety and health standards; providing extensive safety and health training and education; and working with partners to develop innovative programs to prevent workplace hazards. All agency activities focus on meeting the MIOSHA mission to help protect the safety and health of Michigan workers.

MIOSHA ORGANIZATION

Appeals Division

The Appeals Division represents the General Industry Safety & Health and the Construction Safety & Health divisions in prehearing conferences and formal administrative hearings related to contested MIOSHA citations. Questions concerning the administrative process relative to prehearing conferences or formal hearings can be directed to the MIOSHA Appeals Division. Questions concerning case scheduling should be directed to the Bureau of Hearings.

Board of Health and Safety Compliance and Appeals Meetings

Construction Safety & Health Division

The **Construction Safety and Health Division** is one of two standards enforcement divisions of MIOSHA. The division enforces safety and health standards in the construction industry defined in the MIOSHA statute as work activity designated in major groups 15, 16, and 17 of the *Standard Industrial Classification(SIC) Manual.* All construction types are inspected including projects such as:

- road and bridge projects
- sewer, water, gas, and electric utility lines
- power plants
- communication/power transmission towers
- waste and water treatment plants
- single family homes
- high rise construction
- factory and other building additions

Construction standards apply when the type of work being done is construction work designated by one of the above SIC groups. For example, a general industry employer who has most employees engaged in a manufacturing operation must comply with the MIOSHA general industry standards applicable to the manufacturing processes. However, if several of the general industry employer's workers are, for example, pouring a concrete press pit or performing electrical work, the MIOSHA Construction Safety Standards applicable to the concrete or electrical work must be followed.

In a similar way, a municipal employer may have employees performing work covered by General Industry Standards such as trimming trees or collecting trash and may assign the same employees to later perform work covered by the Construction Standards such as repair a water line or grade gravel shoulders. Again, it is the type of work being done that determines which standard is applicable.

The Construction Safety and Health Division addresses safety hazards such as fall, electrical, excavation and other types of physical hazards, as well as occupational exposure of Michigan construction workers to substances or work conditions such as air contaminants, noise, ergonomic hazards, bloodborne pathogens, and ionizing and non-ionizing radiation. The division is also responsible for enforcing MIOSHA rules that contain control measures used to reduce employee exposure to such substances/work conditions, including engineering controls (e.g., industrial ventilation, enclosures, etc.), administrative controls (e.g., employee rotation, hazard communication, housekeeping, etc.), and personal protective equipment (e.g., gloves, hard hats, eye protection, respiratory protection, hearing protection, chemical protective clothing, etc.).

The Construction Safety and Health Division also administers the Asbestos Program, which licenses asbestos abatement contractors, accredits asbestos abatement workers and enforces MIOSHA asbestos standards in both construction and general industry.

Consultation Education & Training Division

The Consultation Education and Training (CET) Division services are provided throughout the state by an in-house staff of professional occupational safety consultants, occupational safety specialists, and industrial hygienists. The staff in the CET Division are non-enforcement personnel. These consultants and specialists are located throughout Michigan and collectively they serve the employers and the employees in all 83 Michigan counties. View the Consultant Directory (CET #0106w).

CET services are funded through a special Michigan worker's disability compensation levy assessment that provides CET restricted use funding. This funding is also supplemented by federal funds. No Michigan general fund money is used to provide CET services. The majority of CET services are provided to Michigan employers or employees at no additional cost beyond the levy assessment. Co-sponsors of CET public seminars may charge a nominal fee to cover the costs of equipment rental, room rental, and lunch/refreshment charges.

Consultation Education and Training
P.O. Box 30643, Lansing, MI 48909-8143
Ph: 517-284-7720 | Michigan.gov/CET

Employee Discrimination Section

The Employee Discrimination Section (EDS) provides protection through investigations of complaints by workers who have been allegedly discriminated against for exercising rights under the Michigan Occupational Safety and Health Act, Act 154 of Public Acts of 1974, as amended, (Section 65) commonly referred to as MIOSHA.

Section 65 of MIOSHA, states that an employer shall not discriminate against an employee for exercising his or her rights. Employees shall not be discriminated against for reporting or voicing an unsafe or unhealthy work condition; or assisting a MIOSHA representative during an inspection/ investigation; or for refusing to work when confronted with an imminent danger that could cause death, injuries resulting in permanent disabilities, or illnesses that are chronic or irreversible.

If an employee feels his or her rights have been violated under MIOSHA, the employee may file a discrimination complaint with the Employee Discrimination Section within **30 days** of the date of occurrence/incident. Call the MIOSHA Employee Discrimination Section at 313-456-3109 or write to:

MIOSHA Employee Discrimination Section
Cadillac Place
3026 W. Grand Boulevard, 9th Floor, Suite 450
Detroit, MI 48202

Printable discrimination complaint form.

General Industry Safety & Health Division

The General Industry Safety and Health Division conducts inspections and investigations in places of employment within the state of Michigan. This includes both public sector employers and private employers. The division responds to complaints from employees or their representatives, investigates accidents including fatalities and catastrophes, and responds to referrals of unsafe or unhealthy conditions from other agencies.

The division addresses the occupational exposure of Michigan's employees to substances of work conditions such as air contaminants, noise, ergonomic hazards, bloodborne pathogens, and ionizing and nonionizing radiation. It is also responsible for enforcing MIOSHA rules that contain control measures used to reduce employee exposure to such substances/work conditions, including engineering controls (e.g., industrial ventilation, enclosures, etc.), administrative controls (e.g., employee rotation, hazard communication, housekeeping, etc.), and personal protective equipment (e.g., respiratory protection, hearing protection chemical protective clothing, etc.).

The division also conducts unannounced inspections at facilities throughout the state in accordance with current priority inspection guidelines.

Technical Services Division

The Technical Services Division (TSD) is responsible for a variety of services to MIOSHA staff and clients. TSD staff prepare and administer most of the grants and contracts related to the federal programs that MIOSHA supports and monitor budget activity. Program areas include:

- The Laboratory and Equipment Services Section (LESS) includes an industrial hygiene laboratory, which is accredited by the American Industrial Hygiene Association, for analysis of air and material samples for occupational exposure to air and physical contaminants. LESS also includes an instrument calibration and maintenance program for providing field instrumentation to MIOSHA industrial hygienists and safety officers to assess exposure to chemical and physical hazards in the workplace.
- The Management Information Systems Section (MISS) is responsible for compilation of accurate and timely injury and illness data, provides information to MIOSHA clients about recordkeeping requirements, prepares statistical information and reports to programs about enforcement activities, monitors data related to MIOSHA strategic planning activities, and provides computer and software support to other MIOSHA programs.
- The Standards and FOIA Section is responsible for:
    - Coordination of the promulgation of Michigan occupational safety and health standards through the appointment of advisory committees to assist with the development of standards, providing access to MIOSHA standards electronically and through distribution of single copies and sets of paper standards, and maintaining a collection for viewing of the national reference standards that are referenced in MIOSHA standards.
    - Consultation Education and Training (CET) Grant Program supplements staff activities by providing competitive grants to nonprofit organizations to provide training and education in emerging safety and health issues, to address particularly dangerous occupations, and to extend MIOSHA's impact through "train-the-trainer" projects, and to provide training and outreach too difficult to reach target groups.
    - Responding to Michigan Freedom of Information Act (FOIA) requests. As of August 14, 2019, ALL FOIA requests for MIOSHA, including the Radiation Safety Section, MUST be directed to the MIOSHA Freedom of Information Act Coordinator at 517-284-7740.
    - Developing/facilitating the MIOSHA Leadership Institute (MLI), which is an internal agency training program designed to strengthen the skill set of current supervisory staff, as well as develop emerging leaders.
- The Radiation Safety Section (RSS) regulates radiation machines by registering and inspecting facilities utilizing radiation machines.

ADMINISTRATIVE STANDARDS FOR ALL INDUSTRY

All MIOSHA standards; administrative, agriculture operations, construction safety and health; and, general industry safety and health, are administrative rules. An administrative rule is a written regulation that has the effect of law. MIOSHA promulgates administrative rules under the authority of the Michigan Administrative Procedures Act. The administrative rules printed in the Michigan Administrative Code is the true and correct copy of all MIOSHA promulgated rules. The Office of Regulatory Reinvention provides the Michigan administrative code version of all MIOSHA standards in electronic form free of charge on their internet website.

HAZARD COMMUNICATION

The following resources and tools can be found at MIOSHA's Hazard Communication Standard (HCS)/Globally Harmonized System (GHS) of Classification and Labeling of Chemicals web site: Michigan.gov/ghs.

MIOSHA POSTING

The "MIOSHA Administrative Rules - Part 13, Inspections and Investigations, Citations, and Proposed Penalties" requires all Michigan employers to have a copy of the poster "Michigan Safety and Health Protection on the Job" (CET #2010) displayed in a conspicuous location. The poster must be located in an area accessible to all employees in the facility. More than one poster may be needed in larger facilities.

Commonly, this poster is found in areas where employees regularly visit (break rooms, cafeterias, etc.) and where other federal and state required postings are found.

Additional Resources:

- Hazard Communication Sample Plan (CET-5530)
- Hazard Communication - Aligning with the Globally Harmonized System of Classification and Labeling of Chemicals (**CET-5531**)
- MIOSHA Standards Affected by the New GHS/Hazard Communication Standard (**CET-5532**)
- MIOSHA Regulated Area Signs Affected by the New GHS/Hazard Communication Standard (**CET-5533**)
- Revised 2012 Hazard Communication Standard FAQs (**CET-0186**)
- Right-to-Know Hazard Communication Compliance Guide (**SP-22**)
- Safety Data Sheet (SDS) Location Poster (**CET-2105**)
- New/Revised Safety Data Sheet (SDS) Poster (**CET-2106**)

OSHA Tools:

- Safety & Health Topics Page: Hazard Communication
- OSHA Wallet Card
- OSHA Brief - Hazard Communication Standard: Labels & Pictograms
- OSHA Fact Sheet - Training Requirements for the Revised Hazard Communication Standard (December 2013)
- Interim Guidance on Enforcement of the Revised Hazard Communication Standard (December 2013)
- OSHA Publication 3695 - Hazard Communication: Small Entity Compliance Guide for Employers That Use Hazardous Chemicals (March 2014)
- OSHA Publication FS-3696 - Steps to an Effective Hazardous Communication Program for Employers That Use Hazardous Chemicals (March 2014)
- OSHA Instruction - Inspection Procedures for the Hazard Communication Standard (HCS 2012), (July 2015)
- United Nations GHS of Classification and Labeling of Chemicals Publications (Past and current versions)

MIOSHA RECORDKEEPING AND REPORTING

Reporting Forms and Guidelines

- Injury and Illness (I&I) Report Processing Instruction
- Using the MIOSHA Employee Injury/Illness Incident Report Form
- Employee Injury/Illness Incident Report

Recordkeeping Forms & Guidelines

- Electronic Submission of Injury and Illness Data
- Part 11. Recording & Reporting of Occupational Injuries & Illnesses
- MIOSHA Form 300A - Summary of Work-Related Injuries and Illnesses
- MIOSHA Form 300 - Log of Work-Related Injuries and Illnesses
- MIOSHA Form 301 - Injury and Illness Incident Report
- Injury & Illness Recordkeeping Requirements for Temporary Workers Fact Sheet
- Recording and Reporting of Occupational Injuries and Illnesses (MIOSHA-STD-05-2)
- Injury/Illness Analysis and Cost Estimation (HO-44)
- MIOSHA Recordkeeping General Guide for Recording (MISS-1)
- Occupational Disease Reporting
- Online Forms: Occupational Diseases and Noise-Induced Hearing Loss (Work-Related)

GENERAL INDUSTRY SAFETY AND HEALTH STANDARDS

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal Protection Equipment for General Industry (SP #16)

An employer must provide, at no expense to the employee, the initial issue of PPE and replacement equipment necessary due to reasonable wear and tear required, unless specifically indicated otherwise or other employer/employee agreement specifically requires employees to provide such equipment. An employee shall wear PPE when prescribed by the MIOSHA rules.

Head protection (Hard Hat):

- Class A hard hat shall be used where a hazard from falling or flying objects or particles or from other harmful contacts or exposures may be present.
- Physically altered, painted, or damaged hard hats shall not be worn.
- Wear hard hat brim forward.
- Do not wear baseball hats underneath.

Eye and face protection:

- Z87.1 safety glasses shall be used where a hazard exists from flying objects or particles, harmful contacts, such as when using power tools, hammers, and working overhead.
- An employee who needs corrective lenses where eye protection is required shall be protected by either of the following:
  (a) Spectacles whose protective lenses provide optical correction.
  (b) Goggles that can be worn over the corrective lenses without disturbing the adjustment of the spectacles.
- Use goggles when working around dust, chemicals.
- Use face shields to protect face from particles. Face shields do not protect eyes from flying object high impacts. Z87.1 safety glasses must be used underneath.

Foot protection (Employee Provided/Employer Must Require):

- ANSI Z41-1999 or ASTM 2412 & 2413 certified footwear must be worn.
- Toe protection where crushing hazard exists.

Body protection:

- Gloves.
- Full length clothing.
- Fire-rated clothing.
- Sunscreen.
- Life vests must be worn when working around water.

Hearing protection, Part 680: www.michigan.gov/documents/CIS_WSH_part680_35660_7.pdf

Respiratory, Part 451: www.michigan.gov/documents/CIS_WSH_part451_54075_7.pdf

MIOSHA'S FALL PREVENTION INITIATIVE

STOP FALLS. SAVE LIVES.

- MIOSHA Publications
- MIOSHA Standards
- MIOSHA Standard Interpretations
- Policies and Procedures
- Video Library and Streaming Service
- MIOSHA Training Institute (MTI) Courses
- Other Resources

PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS

The MIOSHA General Industry Safety Standards - Part 91, Process Safety Management of Highly Hazardous Chemicals and General Industry Occupational Health Standards - Part 591 (R 325.18301-18302), adopted by reference the federal standards 29 CFR 1910.119 and 1910.109.

This standard contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire, or explosive hazards. The standard applies to all workplaces with processes involving Highly Hazardous chemicals at or above specified threshold quantities. Regulated employers include manufacturers of bulk and specialty chemicals, solvent based paints and coatings, adhesives, pharmaceuticals, pulp and paper processors, agricultural chemicals, and public water treatment facilities.

The standard also applies when keeping, having, storing, manufacturing, selling, transporting, and using explosives, blasting agents, and pyrotechnics. These rules do not apply to the sale and use (public display) of pyrotechnics, commonly known as fireworks, or to the use of explosives in the form prescribed in the official United States pharmacopoeia. Compliance with the standard typically requires the involvement of specially trained Industrial Hygienists, Safety Professionals or Professional Engineers.

Contact MIOSHA Consultation Education & Training Division for assistance at 517-284-7720.

Elements of Process Safety Management

There are 14 principal elements to this standard:

1. Employee participation
2. Mechanical integrity
3. Process safety information
4. Hot work permit
5. Process hazard analysis
6. Management of change
7. Operating procedures
8. Incident investigation
9. Training
10. Emergency planning and response
11. Contractors' obligations
12. Compliance audits
13. Pre-start-up safety review
14. Trade secrets

CONFINED SPACES

For the construction industry, "confined space" is defined in Construction Safety Standards, Part 1 General Rules and Part 7 Welding and Cutting. "Confined space" means a space that, because of its physical construction, could be subject to the accumulation of loose materials or explosive, toxic, or flammable contaminants or could have an oxygen deficient atmosphere.

All of the following are examples of confined spaces:

- Storage tanks
- Process vessels
- Bins
- Boilers
- Ventilation ducts
- Sewers
- Underground utility vaults
- Tunnels (after construction is completed)
- Pipelines
- Open top spaces more than four feet in depth (e.g., pits, tubs, vaults, and vessels)

For more information, view the MIOSHA Fact Sheet: Confined Spaces in Construction

Part 90 - Permit-Required Confined Spaces

The MIOSHA General Industry Safety Standards - Part 90, Permit-Required Confined Spaces and General Industry Occupational Health Standards - Part 490 (R 325.63001) provide rules that establish minimum requirements for the practices and procedures to protect employees from the hazards associated with entry into permit-required confined spaces. These rules do not apply to agriculture, construction, and shipyard employment.

Michigan Guide to
Environmental Regulations

Appendix E

Summary of Federal and State Laws and Rules

APPENDIX E – SUMMARY OF FEDERAL AND STATE LAWS AND RULES

CONTENTS

OVERVIEW

Laws and administrative rules give the government the authority to regulate manufacturing activities. Laws are public acts or statutes that are created by a legislative body such as Michigan's State Legislature or U.S. Congress. An "administrative rule" is a regulation written by an agency that implements or applies a law. Laws and rules are created and administered at both the state and federal level. Throughout this guidebook a number of regulations are cited. The purpose of this appendix is to help you understand what these citations mean. Additionally, this appendix should increase your understanding of how laws and rules are published and cited, as well as where they can be found.

FEDERAL LAWS

All laws enacted by the United States Congress are compiled into the United States Code (USC). The USC is divided into 50 titles by subject matter. Subjects dealing with environmental topics are listed predominantly in USC Title 42, "The Public Health and Welfare," but may be found in other titles as well. Labor issues are located in Title 29, "Labor."

Federal laws are cited by their popular name followed by a reference to the USC. The Clean Air Act is located in 42 USC 7401 et seq. Here "42 USC" refers to Title 42 of the United States Code entitled, "The Public Health and Welfare." "7401 et seq." refers to the first section within Title 42 that pertains to the Clean Air Act and the following sections. The proper citation would read:

The Clean Air Act, 42 USC 7401 et seq.

All of the federal laws cited in this guidebook are listed below:

- The Clean Air Act (CAA), 42 USC 7401 et seq.
- The Clean Water Act (CWA), 33 USC 1251 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601 et seq.
- The Emergency Planning and Community Right-To-Know Act (EPCRA), 42 USC 11011 et seq.
- The Federal Hazardous Materials Transportation Act, 49 USC 5101 et seq.
- The National Environmental Policy Act (NEPA), 42 USC 4321 et seq.
- The Occupational Safety and Health Act (OSHA), 29 USC 651 et seq.
- The Pollution Prevention Act (PPA), 42 USC 13101 and 13102
- The Resource Conservation and Recovery Act (RCRA), 42 USC 6901 et seq.
- The Safe Drinking Water Act (SWDA), 42 USC 300f et seq.
- The Superfund Amendments and Reauthorization Act (SARA), 42 USC 9601 et seq.
- The Toxic Substances Control Act (TSCA), 15 USC 2601 et seq.

FEDERAL RULES

Federal rules are promulgated by agencies within the federal government such as the U.S. Environmental Protection Agency or the Occupational Safety and Health Administration. Federal rules are compiled into two documents: The Federal Register and the Code of Federal Regulations.

FEDERAL REGISTER

The Federal Register (FR) is a daily publication used to notify the public of official federal government actions. It is published by the Office of the Federal Register, U.S. National Archives and Records Administration (NARA), every Monday through Friday except federal holidays. The FR is the official publication for presidential documents and executive orders as well as notices, rules, and proposed rules from federal agencies and organizations.

How to Use the Federal Register

A typical first page of a Federal Register follows. See numbers to match referenced explanations.

[Federal Register: June 8, 1998 (Volume 63, Number 109)] ❶

[Proposed Rules]

[Page 31197]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 72 and 75 ❷

[FRL-6109-1] ❸

RIN 2060-AG46

Acid Rain Program; Continuous Emission Monitoring Rule Revisions ❹

AGENCY: Environmental Protection Agency (USEPA) ❺

ACTION: Proposed rule; correction. ❻

❶ A regulation in the Federal Register is cited by the date of issue, volume, number, and the page on which the regulation appears.

❷ A reader's aid section serves as an index and lists the CFR titles and parts that have been affected for that particular month, up to the date of printing.

❸ It lists the page number in the register where you can find the details of the revision.

❹ The title of the document follows,

❺ The issuing agency.

❻ Lastly, the action of the document (i.e., proposed rule, final rule, notice, correction, etc.).

Code of Federal Regulations

The Code of Federal Regulations (CFR) is an annual codification of the general and permanent rules established in the Federal Register by the executive departments and agencies of the federal government. The CFR, like the USC, is divided into 50 titles that represent broad areas subject to Federal Regulation. Environmental regulations are contained primarily in Title 40 entitled, "Protection of Environment." Regulations pertaining to occupational safety and health are located in Title 29 entitled, "Labor." Each title of the CFR is published in separate volumes that are revised once each calendar year to add amendments published in the Federal Register. Title 40 and Title 29 are issued every July 1.

Each title of the CFR is divided into subtitles and chapters that usually bear the name of the issuing agency (e.g., the Environmental Protection Agency or the Occupational Health and Safety Administration). Chapters may be divided further into subchapters that cover specific regulatory areas and organize parts by topic area. Chapters and subchapters are divided into parts (large parts are sometimes divided into subparts). All parts are organized into sections; most references in the CFR will be to the section level. Below is the CFR hierarchy for the U.S. Environmental Protection Agency (USEPA) and Occupational Health and Safety Administration (OSHA).

USEPA

Title 40 – Protection of the Environment

Chapter I – Environmental Protection Agency

Subchapter A – R

Parts – 1-799

Subparts – further divide parts

Sections – numbered and cover specific areas such as applicability, definitions, standards, etc.

OSHA

Title 29 – Labor

Subtitle B – Regulations relating to labor

Chapter XVII – Occupational Safety and Health Administration

Parts – 1900-1999

Subparts – further divide parts

Sections – numbered and cover specific areas such as applicability, definitions, standards, etc.

To locate a specific regulation, the most important divisions of the CFR are the title, part/subpart, and section. To find a particular regulation in the CFR, you have to first understand how it is cited. Usually, a reference to the CFR is cited to a particular section or subpart. "40 CFR 261.10" refers to a specific section. Here, "40 CFR" refers to Title 40 of the CFR and "261.10" denotes the section. The number to the left of the decimal, "261," refers to the part. The number to the right of the decimal, "10," identifies the particular section within that part. To reference a broader portion of the CFR, you would reference an entire subpart. Consider "40 CFR 162(C)". Here "162(C)" refers to Part 162, Subpart C.

A typical first page from the CFR is illustrated as follows:

Code of Federal Regulations]

[Title 40, Volume 5, Parts 61 to 71]

[Revised as of July 1, 1996]

From the U.S. Government Printing Office via GPO Access

[CITE: **40 CFR 63**]

[Page 667-674]

TITLE 40—PROTECTION OF ENVIRONMENT

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES—Table of Contents

Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities

Source: 58 FR 49376, Sept. 22, 1993, unless otherwise noted.

HOW TO ACCESS FEDERAL LAWS AND RULES

By following the steps outlined in this section you will be able to locate any federal law or administrative rule online. Federal laws can be located through the USEPA and OSHA Web sites. These Web sites give you direct access to all the popular federal statutes administered by these agencies as well as many other page links that can assist you in gaining information. In addition, by using these Web sites you can search Federal Register and CFR documents for federal rules.

LOCATING FEDERAL LAWS

By accessing the USEPA Web site, you can locate a number of federal statutes pertaining to the environment. If you are searching for federal statutes regarding labor issues like the Occupational Safety and Health Act, you should access the Occupational Safety and Health Administration's (OSHA) Web site.

Environmental Laws

Enter the following Web site: **www.epa.gov/laws-regulations**. This page allows you to access all the major federal laws that address the environment.

Occupational Safety and Health Administration Laws

Enter the following Web site: **www.osha.gov/law-regs.html**. From this site you may access the Occupational Safety and Health Act (OSH Act) or find links to other relevant pages including the Department of Labor (DOL) Web site which contains additional statutes.

LOCATING FEDERAL RULES

You can find federal rules using the Federal Register, which is published daily or by reviewing the Code of Federal Regulations (CFR), which is updated regularly. The Environmental Protection Agency Web site and the Occupational Safety and Health Administration Web site give you direct access to these documents.

Environmental Rules

From the USEPA Laws and Regulations Web site, **www.epa.gov/laws-regulations,** you can access the Federal Register documents issued by the USEPA. You can also access the CFR. Both the official CFR, which is typically not updated until July of the current calendar year and the e-CFR, which is an up-to-date, unofficial version of the CFR, can be accessed here.

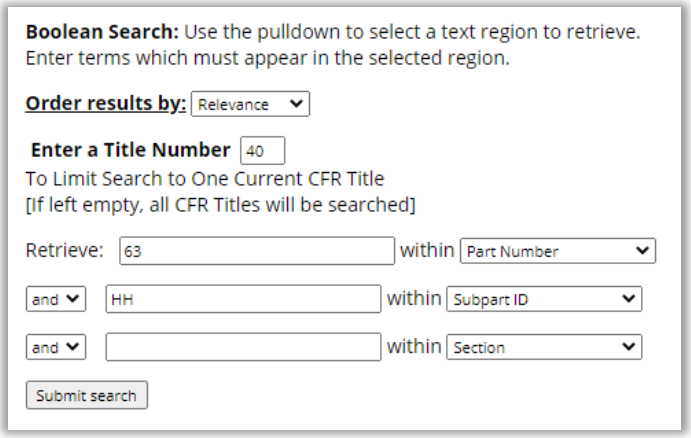
Occupational Safety and Health Administrative Rules

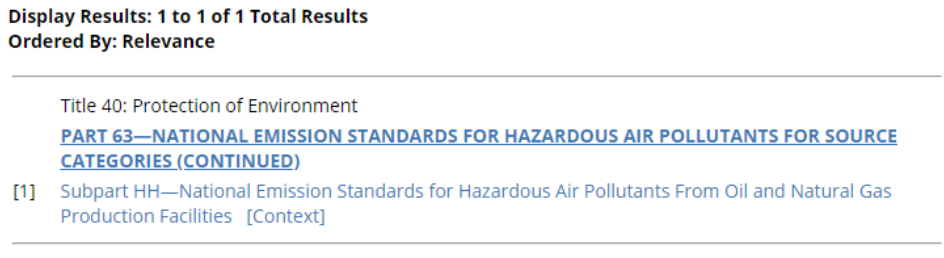
Access the OSHA Laws and Regulations Web site at: **www.osha.gov/law-regs.html**. From this site you may find Federal Register documents pertaining to OSHA as well as links to relevant CFR documents and standards.

Other Federal Rules

Enter the following Web site: **www.ecfr.gov**. Using the dropdown list select the CFR title you want to search under. For example, Environmental Regulations are found in Title 40, OSHA regulations are found in Title 29, and USDOT regulations are found in Title 49.

Note: The best way to view or print an entire subpart and nothing but the subpart is to use the Search feature of the e-CFR. Select "Boolean search" from the side bar on the e-CFR page. Enter the number of the CFR title. In the first long rectangular box, give the part number, and select “Part Number” from the drop-down menu. In the second search box, enter the letters of the Subpart heading and select “Subpart ID” from the drop-down menu. (If your subpart has no ID number [like “A”, “B”, or “GGG”], use most or all of the subpart heading and select within “Subpart heading.”) Click on “Submit Search.”





Michigan Laws

After the Governor signs a bill into law, it is assigned a public act number and then added to the Michigan Compiled Laws (MCL). The MCL is a collection of all state laws currently in force through a particular publication date. It not only includes public acts enacted by the Legislature, but also The Michigan Constitution of 1963, as amended; and Executive Reorganization Orders issued by the Governor. The MCL is organized into three levels: chapters, acts, and sections.

The MCL is comprised of 830 chapters that address various subjects. Within each chapter is one or more public acts. The Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended is found in Chapter 324; and the Michigan Occupational Safety and Health Act (MIOSHA), Public Act 154 of 1974, as amended is found in Chapter 408. Public Acts may be divided into parts or articles that are divided further into sections. Each section within the MCL is assigned a "compilation number." This number serves as a reference to assist in locating any section of law. If you know the section compilation number, you can easily locate the law in the MCL. The following example illustrates the components of a section within the MCL. This particular section is taken from Michigan's Occupational Safety and Health Act (MIOSHA):

> 408.1012 ❶ Duties of employee ❷.
>
> Sec. 12. ❸ An employee shall:
>
> (a) Comply with rules and standards promulgated, and with orders issued pursuant to this act.
>
> (b) Not remove, displace, damage, destroy, or carry off a safeguard furnished or provided for use in a place of employment, or interfere in any way with the use thereof by any other person.
>
> History: 1974, Act 154, Eff. Jan. 1, 1975. ❹

❶ "408.1012" is the section compilation number, which describes where this piece of law is located in the MCL. The numbers to the left of decimal, "408," refer to a chapter of the MCL. Here, "408" refers to Chapter 408 of the MCL entitled "Labor." The numbers to the right of the decimal, "1012," represent the specific section and serve to further organize the section within the chapter.

❷ To the right of the section number is the "catchline," a brief description of the section's content.

❸ "Sec. 12" is the internal section number within the Act itself and immediately precedes the text of the section.

❹ Following the text of the section are editorial notes. There are seven types of editorial notes that may follow a section: history notes, compilers notes, constitutionality notes, transfer of power notes, former law notes, cited in other section notes, and cross-reference notes. The history note in this example lets the reader know that this section comes from Act No. 154 of 1974 and became effective January 1, 1975.

Citing Michigan Laws

A law may be cited to a public act in its entirety or a particular division. Following are examples of how a state law may be cited. In this guidebook most references to state laws will be to an entire public act or part of an act.

An act referenced in its entirety will reference the act's popular name, number, and year of enactment as in the following: The Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451). Any further reference to the same citation might be abbreviated to just the act number, for example, Act 451.

When a specific part of an act is referenced, it is cited to the public act by the part number and title as in the following: Part 115 (Solid Waste Management) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451). Any further reference to that same citation might be abbreviated to include just the part number, for example, Part 115 of Act 451.

MICHIGAN ADMINISTRATIVE RULES

Once a law is enacted, state administrative agencies such as EGLE are charged with the duty of making sure the law is implemented. Statutes, like the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended, give agencies the authority to promulgate administrative rules. Although they are not technically laws, when rules are properly processed and enacted, they have the same force and effect as law. The Administrative Procedures Act, Public Act 306 of 1969, as amended, was enacted to address the procedures that govern the creation, processing, and publication of rules. This act outlines the entire rule making process, from the initial request to finalization.

Understanding EGLE's Administrative Rules

Michigan's Department of Environment, Great Lakes, and Energy (EGLE) has the authority to promulgate rules under Act 451. Each division within EGLE administers its own set of rules. For example, the Air Quality Division administers a set of rules known as the "Air Pollution Control Rules." An agency will typically organize its administrative rules into parts. The Air Pollution Control Rules are divided into parts concerning issues such as emission limitations and prohibitions, monitoring, and permitting. Like all administrative rules, EGLE's rules are compiled in the Michigan Administrative Code.

UNDERSTANDING MIOSHA STANDARDS

Section 18(c) of the Occupational Safety and Health Act allows states to assume responsibility for the development and enforcement of occupational safety and health standards. There are 21 states, including Michigan, that are known as "State Plan States." Michigan's Occupational Safety and Health Act (MIOSHA), Public Act 154 of 1974, as amended, gives the Department of Labor and Economic Opportunity (LEO) the authority to create its own and/or adopt federal standards.

MIOSHA rules are organized into four broad standards: General Industry Health, General Industry Safety, Construction Health, and Construction Safety. The MIOSHA General Industry and Construction Safety Standards are divided into parts. Within each of these standards are rules that address various subjects. For example, Part 90 of the General Industry Safety Standards contains a number of rules regarding "Confined Space Entry."

It is important for anyone who is involved in general industry or construction activities to be aware of all the standards that may affect them. You should not only consider the standards that may apply to your operation in general, but also specific situations as well. For instance, a manufacturing plant must comply with all applicable General Industry Standards; however, if at some point employees of that plant engage in construction activities within the plant, then the Construction Standards become applicable as well.

MICHIGAN ADMINISTRATIVE CODE

The Michigan Administrative Code (MAC) is the collection of all permanent administrative rules. The Office of Regulatory Reinvention (ORR) keeps the MAC up to date daily at its Web site **Michigan.gov/orr**.

Rules are organized into the MAC by their "R" number. To help us better understand its usage, consider the example below, which is an excerpt from Michigan's Air Pollution Control Rules:

> R 336.1901 ❶ Air contaminant or water vapor; when prohibited.❷
>
> Rule 901. ❸ Notwithstanding the provisions of any other commission rule, a person shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
>
> (a) Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.
>
> (b) Unreasonable interference with the comfortable enjoyment of life and property. ❹
>
> History: 1979 ACS 1, Eff. Jan. 19, 1980. ❺

❶ "R 336.1901" is referred to as the "R" number. This number describes where the rule may be found in the MAC. Most R numbers consist of two numbers separated by a decimal point. The MAC is organized numerically in ascending order, first by the left side of the R number and then by the right. The number to the left of the decimal point generally refers to the chapter of the MCL containing the statutory authority to which an agency promulgated the rule. In this example, "336" refers to Chapter 336 of the Michigan Compiled laws entitled "Air Pollution." The numbers to the right of the decimal point correspond to the digit or digits in the rule number.

❷ To the right of the R number is what is referred to as the "catchline," which is a short statement explaining the topic of the rule.

❸ Preceding the text is the actual rule number, "Rule 901," which is usually some variation of the right side of the R number, depending on how the agency has organized its rules.

❹ This is the text of the rule. If the rule is rather large, it may be divided into a series of independent statements that pertain to the preceding material.

❺ At the end of each rule is a history note that contains the rule's effective date, its origin, and any amendments. The history note in this example informs readers that the rule originated in 1979 Administrative Code Supplement Number 1 and became effective on January 19, 1980. Any amendment effective dates follow this date.

HOW TO ACCESS STATE LAWS AND RULES

You can obtain a state law by going directly to the Michigan Compiled Laws (MCL). State rules are obtained from the Michigan Administrative Code (MAC). You may search the entire MCL through the "Michigan Legislative Information Web Server" at **MichiganLegislature.org** and MAC through the Office of Regulatory Reinvention (ORR) Web site **Michigan.gov/orr**.

LOCATING MICHIGAN ENVIRONMENTAL LAWS AND RULES

The EGLE web site, Michigan.gov/EGLELaws, lists all of EGLE's environmental regulations by division, as well as many statutes and links to federal environmental sites.

LOCATING MICHIGAN HEALTH AND SAFETY LAWS AND RULES

If you are interested in finding specific administrative rules and standards promulgated under Michigan's Occupational Safety and Health Act (MIOSHA), go to the Michigan Occupational Safety and Health Administration (MIOSHA) Web site: **Michigan.gov/MIOSHA**. Scroll down to select "Standards and Legislation" from the left navigation menu.

LOCATING OTHER STATE LAWS

There are two ways you can search the MCL for a law. The first is by referencing the compiled law number (compilation number). Second, you can also search by public act number and year. By far the easiest and most up-to-date method is by using the Internet. Accessing the MCL Web site is much easier to use than the multiple volumes of the MCL and can be done at your home or office. Following is an explanation of how to find a particular law on the MCL web site: MichiganLegislature.org.

Depending upon what information you are given, you may choose to search for a reference to a law by the MCL number or the Public Act itself:

- If you know the compilation number (e.g., 408.1012), enter the MCL number (408.1012) into the box titled "MCL Section."
- If you know the Public Act (e.g., Public Act 154 of 1974), select "Public Act MCL" from the left side bar under "Laws" and enter the "Public Act Number" (e.g., "154") and "Public Act Year" (e.g., "1974"). From the search results, you can locate a specific part, section or other division of the Act.

LOCATING OTHER STATE RULES

If you know the "R" number of the rule, for example R 336.1901, you can launch a search of the Michigan Administrative Code on the ORR Web site, **Michigan.gov/orr**, and select "MI Administrative Code (Rules)." From here you may search for a rule by state department or number.

Copies of all MIOSHA standards are available from MIOSHA. The standards are updated frequently, so it is recommended that you get on their mailing list to receive notification that revised standards are available.

Contact the MIOSHA Standards Section at 517-284-7740 to be placed on the mailing list for notification of new or amended standards and public hearing announcements.

EGLE

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Stay connected with EGLE by visiting *www.michigan.gov/EGLEconnect*.

Sign up to receive email updates about important issues, news, updates, and events.

Follow us on Twitter to receive tweets on news, happenings, and other environmental information.

Subscribe to our YouTube channel to get access to a variety of training and informational videos.

Check out the interactive EGLE Calendar and subscribe to receive updates on decisions before the Director, proposed settlements of contested cases, administrative rules promulgation, public hearings, and environmental trainings.