MECC | MICHIGAN ENVIRONMENTAL COMPLIANCE CONFERENCE

Waste 101

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Today's Goal

- Provide an Overview – Waste Regulation
- Give you ideas – Take Notes!
- Arm you with resources that you need.

Waste Regulations Overview

- Hazardous Waste
- Liquid Industrial By-Product
- Solid Waste
- PCB Waste
- Medical Waste
- Radioactive Waste

What do you want to know about?
(In just 2 or 3 words)

- Time for Questions Later, but it's helpful to know why you are here in brief.

Waste Regulations

Presentation Designed to Introduce:

- Hazardous Waste (RCRA and Part 111)
- Liquid Industrial By-products (Part 121 – Michigan Only)
- Solid Waste (Part 115, Solid Waste Management)
- PCB waste (TSCA, USEPA)
- Medical Waste (Medical Waste Regulatory Act (MWRA), Part 138)
- Radiological waste (Act 204 of 1987, NRC, etc.)
- Recycling (Part 115, etc.)

- Waste – You have decided that you can't use it.
- Now what? Are you asking me or my wife?
- Materials Management – Paradigm Shift into thinking about how we manage materials.

What is a Waste

A waste is any **discarded** material

A waste is any material that **cannot be used for its original intended purpose**, including materials that are:

- Burned as fuel
- Accumulated and recycled or reclaimed
- Discarded, abandoned or disposed

Waste or Gold Mine?

“Do we have to save them all???”

How Do I Start

- Waste Survey – All the different wastes generated on site
  - What is your liability?
    - Fires, Spills, Regulatory Penalties, Contaminated Property, Public Perception
  - What is your opportunity?
    - Reduce Waste, Re-Use Material, Eliminate Waste, Sell By-Products *Hazardous Materials require regulatory notification
  - Waste Review – Repeat the Process as Needed

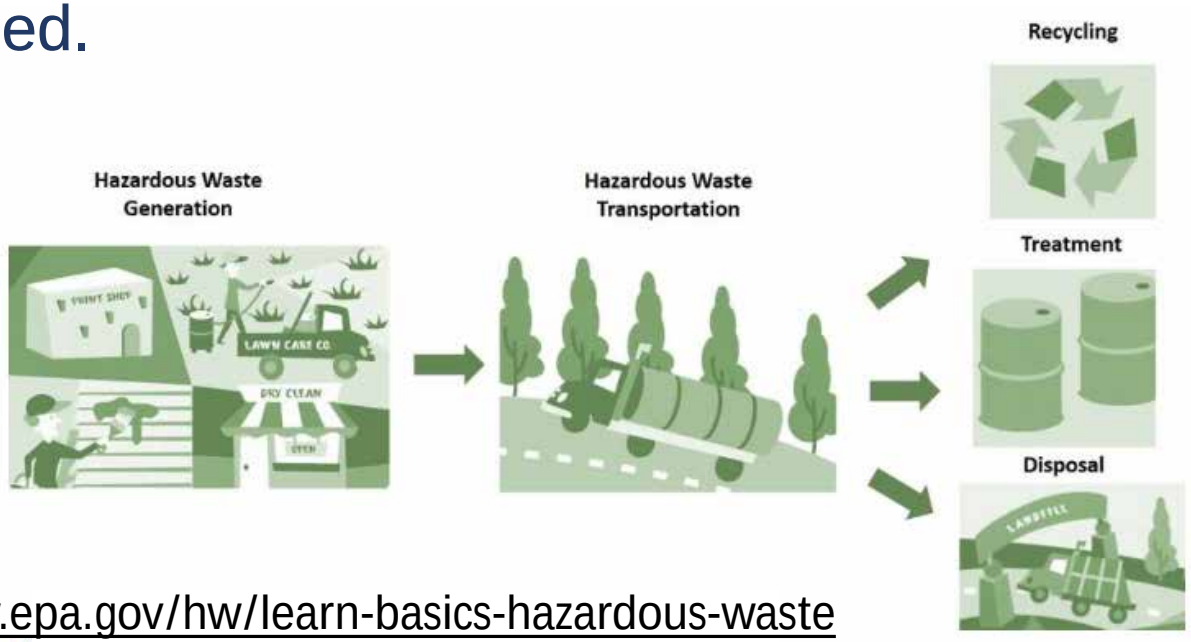
Waste Survey – Site Specific

Practical Example

Product = Coffee
Process = Analyze Waste
Waste = Wash Water,
- Grounds,
- Filters,
- Bags
- Machine Itself

Hazardous Waste Overview

Since 1976, hazardous waste requires **"cradle to grave"** manifesting, meaning hazardous waste is tracked from the time it is created, while it is transported, treated, stored, and until it is ultimately disposed.



https://www.epa.gov/hw/learn-basics-hazardous-waste

RC

Hazardous Waste Regulations

- Regulated under Part 111 of Act 451, parallel's RCRA, 1976
- Apply to waste determined to be a threat to human health or the environment. Generator must make determinations.
- Apply to all businesses, including municipalities, hospitals, and service industries, not just manufacturing industries

Hazardous Material vs. Hazardous Waste

- **“Haz Mat”** is regulated under OSHA rules, regulates products and materials that are hazardous.
  - Losing Product costs money. Storage usually protected.
- **“Hazardous Waste”** - *Separate and specific rules under EPA, for waste.
  - Losing waste saves money. Rules get very specific for this reason, including penalties for storage of certain volumes longer than allowed.
    - 180 Days Small Quantity Generators
    - 90 Days Large Quantity Generators.

Waste Characterization

Is the waste **listed** on lists in the hazardous waste rules?

Does the waste **exhibit a characteristic** that makes it hazardous?

- Ignitable
- Corrosive
- Toxic
- Reactive

Characteristic Waste Codes
Part 111, Rule 302

Ignitable - D001 – Flash below 140F

Corrosive - D002 – pH below 2 or above 12.5

Reactive - D003 – Fires / Explosions

Toxic - D004 – D043 (Table 201a)

Severely Toxic – 001S - 007S
(Table 202, includes dioxins & furans)

Toxic Characteristic
Hazardous Waste Codes

Toxic Constituents

Part 111 Rules,

Table 201a

R 299.9217 Table 201a.
Rule 217. Table 201a reads as follows:

Table 201a

EPA Hazardous Waste Number	Chemical Abstract Services Number	Material	Extract Concentration milligrams per liter
D004	440-38-2	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

Waste Gasoline
Best Management Practices - Be the Expert

Generators Defined – 3 Categories

- 1. Very Small Quantity Generator (VSQG) – Generates less than 100 kilograms (212 pounds) of hazardous waste in a calendar month.

- 2. Small Quantity Generator (SQG) – Generates between 100 to 1,000 kilograms (212 to 2,120 pounds) of hazardous waste in a calendar month.
  - Approximately 26.5 gallons to 265 gallons (5 drums)
  - Must not generate 1 kilogram or 2.2 pounds of acute

- 3. Large Quantity Generator (LQG) – Generates over 1,000 kilograms (2,120 pounds or about 265 gallons) of hazardous waste in a calendar month or 1 Kilogram of acutely hazardous waste.

Once all hazardous wastes have been identified, check for exemptions or exclusions.

Example: Electronics Recycling, Fluorescent Bulbs, Generator Treatment

Generator Responsibilities

- Containerize the Waste
- Characterize the Waste
- Train staff to manage waste appropriately
  - Containerize, Characterize, Label Waste, Ship Waste, Manage Records
- Use a Licensed hauler to transport the waste offsite timely.
- Use a Permitted and Licensed Disposal Facility
- Maintain Records for 3 years minimum.
- CRADLE TO GRAVE
- Government's Responsibility? Oversight

Hazardous Waste Generator Category

Episodic Hazardous Waste Generation Basics

Allows a site to bump up once in a calendar year and stay in their generator category if they meet the new “Episodic Event” requirements:

- Requires **notification** (EQP 5150 Form) and specific timeframes i.e. planned 30 days in advance, unplanned within 72 hours of the event
- Management as a hazardous waste for disposal
- Labeling
- Disposal within a limited timeframe

Hazardous Waste Generator Category

Less Regulation

More Regulation

Solid Waste

Liquid Industrial By-products Generators (LIB)

Universal Waste Generators

Very Small Quantity Generators (VQGs)

Small Quantity Generators (SQGs)

Large Quantity Generators (LQGs)

Is this regulated waste?

Liquid Industrial By-Products Part 121

- Michigan regulates liquid waste – Paint Filter Test (if liquid drips through)
- All must be characterized, including contaminants.
- Generators must maintain records for 3 years
- Containerize the waste, prevent release.
- Use a Registered Transporter & Designated Receiving Facility (Receiving Facility must register and obtain an EPA ID Number, File Annual Reports)
- Solidify On Site?

What if I have Nothing Hazardous?

Can't I dump this on the ground? It's sunshine, non-toxic!

Liquid Industrial By-Product (LIB)

- Liquid VSQG hazardous waste – Subject to LIB requirements
- Other liquid waste materials that are not hazardous, hazardous exempt, etc. but are regulated as LIB

Used oil	Catch basin clean out waste
Antifreeze	Contaminated fuel
Wastewaters	Brine
Sludges	Wash waters
Leachate	Some sanitary clean out waste

Liquid Industrial By-Product (LIB)

Generators of liquid industrial by-product must…

- Must have exterior of all vehicles, containers and tanks free of use oil residues
- Prevent release to ground
- Use permitted registered LIB transporter or maintain spill insurance if self transporting
- Receive confirmation that each LIB shipment arrived at an appropriate LIB Designated Facility

LIB – What's Wrong With This Picture? What is Right about it?

Used Oil

Must be labeled with the words “Used Oil”

Must be protected from the weather and vandals.

Secondary Containment? Depends upon the volume.

Part 5 Rules and SPCC Plan

Threshold Management Quantities:

- Oil – Storage Capacity
  - Total 1,320 gallons, single tanks >660 gallons
- Salt
  - Solid – 5 tons
  - Liquid – 1,000 gallons
- Table 1 Compounds
  - Indoors – 2,200 lbs
  - Outdoors – 440 lbs

Waste Webinar Series

EGLE Waste Webinar Series (michigan.gov/)

- What Small Businesses Need to Know about HW
- Common Violations
- Determine Hazardous Waste Generator Status
- Required Record Keeping
- Used Oil – Liquid Industrial By-Products
  Composting
- Etc.

v Scrap Tires &

Tire Derived

Fuel - Grants

How Do I Figure Out All This Stuff?

[Michigan Guide to Environmental Regulations]

Solid Waste (Part 115)

- Landfill Types
  - Demolition Debris – Type 3 Landfill
  - Municipal Solid Waste – Type 2 Landfill
  - Hazardous Waste Landfill – RCRA & Part 111 Permit & Registration
- NEW RULES PACKAGE – Part 115 Recent Update are Taking Effect
  - Registration Required
    - Transfer facilities - Truck to a transfer facility – New Part 115 Rules require most Transfer Facilities to register – 50 to 200 Cubic Yards
    - Compost Facilities -
    - Etc.

Hello, State of Michigan? Can you inspect my neighbor?

Landfill Prohibited Materials

- Used Oil
- **Liquid Waste**
- Lead Acid Batteries
- Hazardous Waste (from SQG & LQG)
- Low Level Radioactive Waste
- PCB Waste
- Medical Waste
- Empty Drums
- **Whole Tires**
- Returnable Beverage Containers
- Sewage
- Asbestos

No Burning Stuff

-Businesses prohibited from burning solid waste

-Residential can burn wood, paper; no plastics; may be restricted by local code.

Medical Waste

Regulated under Part 138 of Act 368, Michigan Public Health Code

Includes infectious biohazardous waste like:

- Blood and body fluids from human and animals
- Pathological waste like organs and tissue
- Infectious agents like live or attenuated viruses in vaccinations
- Sharps or needles and scalpels

Medical Waste

Many agencies regulate medical waste, including:

- MSP/U.S. DOT – Specifies packaging, labeling, securing and shipping documents for safe transport
- MIOSHA – Specified work protections for handling of blood borne infection materials
- Local Health Departments – Local ordinances

Medical Waste

Medical Waste Regulatory Act requires:

- Producer registration every 3 years
- Medical Waste Management Plan
- Employee training records
- Proper packaging
- Storage no longer than 90 days
- Shipment records

See Michigan Guidebook: Chapter 2.5

Radioactive Wastes

The Nuclear Regulatory Commission (Federal Government) regulates highly radioactive waste.

Michigan Regulates

- Naturally Occurring Radiological Material (NORM) Wastes from oil, gas, brine, chemical, and water treatment industries.
- Low Level Radioactive Wastes – Disposal Capacity
- Radon – Indoor Air Program
- Emergency Preparedness – Nuclear Plants, etc.

Asbestos

- Used in more than 3000 products over the past 100 years for its insulation and fire protective properties
- Common products include pipe insulation, **floor and ceiling tiles, roofing material**, and electrical appliances
- Found in a wide range of settings including industrial and manufacturing, school and universities, and residential properties

Asbestos

Asbestos is the general name of a group of minerals with a similar propensity to **become airborne and cause damage to lungs**. These minerals include Chrysotile, Amosite, and Crocidolite

Additional information is available through the EGLEs Air Quality Division, NESHAPs Asbestos Coordinator at 517-373-7064

See Michigan Guidebook: Chapter 1.16

Asbestos

Generally disposed in Type II Municipal Solid Waste landfill if the landfill has been approved to accept asbestos-containing wastes

Regulated by MIOSHA

Regulated by Air Quality Division under the National Emission Standards for Hazardous Air Pollutants (NESHAP)

Recycling vs. Sham Recycling

- Recycling must be legitimate and not a cheaper disposal method. Regulations in effect
  - Speculative Accumulation
  - Abandonment is Disposal
- Recycling Metal – Saves Electricity, Wastewater, Fuel, etc.
- Recycling Paper – Same
- Recycling Glass – Same
- Recycling Styrofoam -
- Recycling Cardboard - Same

Toxic Substances Control Act
(TSCA)

Applies to the manufacture, processing, distribution, marking, use, storage, cleanup, and disposal of **PCB-containing wastes**

Regulation of TSCA is implemented by EPA

Sources of PCBs include dielectric fluids, heat transfer fluids, capacitors, hydraulic fluids, etc.

Questions?

- Michigan Guide to Environmental Regulation – Free on the EGLE Website
- Hire a Consultant that *knows waste regulations
- Use the “Search” Box on EGLE’s website and the Guidebook, including Part 111 Haz Waste Rules.