

Hazardous Waste Determination

For Environmental Protection Agency
Small Business Environmental
Assistance Program

May 3, 2011

Overview

- Welcome, Introductions, and Objectives
- Waste Determination Overview
- Waste Determination Steps and Waste Code Assignments
- Group Exercise
- Reminders on Determining Generator Status
- Questions

Objectives

- As a result of the training, participants will be able to:
 - State reasons why waste determinations are necessary to comply with hazardous waste regulations and reduce business liability
 - Understand the steps prescribed in the regulations to determine if a waste meets the federal definition of a hazardous waste
 - Work through a waste determination example using the waste determination form
 - Explain how the generator status of a business can be determined based on waste determination results



What is a Waste Determination

- A formal decision process to distinguish wastes from usable materials and hazardous wastes from non-hazardous wastes
- Can use knowledge of the process and materials generating the waste, a laboratory analysis, or a combination of the two
- A waste determination is needed for each waste stream

What is a Waste Determination

- Waste stream
 - Different wastes from the same process (multiple waste streams)
 - Similar waste from similar processes (same waste stream)
 - Similar waste from different process (different waste streams)



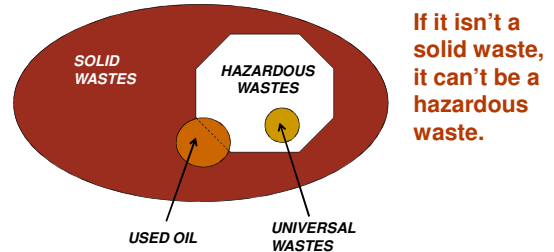
Purpose of Waste Determination

- By law, it is the generator's responsibility to conduct waste determinations
- The beginning of "Cradle-to-Grave" responsibility
- Proper identification enables proper disposal
 - Most Treatment, Storage, and Disposal Facility (TSDF) licenses specify permitted Environmental Protection Agency (EPA) waste codes

Purpose of Waste Determination

- Side benefits:
 - You get to know all your waste streams on a “first name” basis
 - It gives you operational control over waste management decisions – you can’t properly identify it if its not on your radar screen
 - It gives you confidence in approving waste treatment or disposal options – including normal trash and drain disposal

General Waste Principles



General Waste Principles

You can't put it down the drain or in the normal trash unless you know it is non-hazardous! You must be prepared for a regulator to say “prove it.”



Waste Determination Form

- Used to guide you in assisting small businesses with answering waste determination questions
- Consider it an expert system for working through the steps of the waste determination process
- We will first discuss the waste determination steps, then practice using the form on an example waste stream

Overview of Solid Waste Regulations

- Resource Conservation and Recovery Act (RCRA)
 - Enacted in 1976
 - Amended Solid Waste Disposal Act of 1965 and Resource Recovery Act of 1970
- RCRA Amendments
 - Hazardous and Solid Waste Amendments (HSWA) of 1984
 - Federal Facilities Compliance Act of 1992
- Comprehensive regulations to manage solid waste, hazardous waste, medical waste and underground storage tanks in the United States

Waste Determination Steps

40 Code of Federal Regulation (CFR)
§ 262.11 Hazardous waste determination
(excerpt):

- A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the following method:**
- He should first determine if the waste is excluded from regulation under 40 CFR 261.4.**
 - He must then determine if the waste is listed as a hazardous waste in subpart D of 40 CFR part 261.**

Waste Determination Steps

40 CFR § 262.11 Hazardous waste determination (excerpt continued):

- (c) For purposes of compliance with 40 CFR part 268, or if the waste is not listed in subpart D of 40 CFR part 261, the generator must then determine whether the waste is identified in subpart C of 40 CFR part 261 by either:
- (1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261, or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or
 - (2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

Waste Determination Steps

In Plain English Please!

- Is it a waste?
- Is it excluded or exempt from regulation?
- Is it listed on any of the hazardous waste lists?
- Does it have any characteristics (properties) of a hazardous waste (as defined in the regulations)

Waste Determination Steps

Is it a Solid Waste?

- Refer to 40 CFR 261.2 (definition of solid waste)
 - "...any discarded material, including solid, liquid, semisolid, or contained gaseous material..."
- Can it be used for its originally intended purpose?
- Do you have any plans to use it?

Waste Determination Steps

Is it a Solid Waste?

- Some exclusions from definition of solid waste:
 - Domestic sewage
 - Uncontaminated inert materials used for fill
 - Scrap metal (however, mercury is not considered a scrap metal)
 - Shredded circuit boards being recycled

Waste Determination Steps

Is it a Solid Waste

- "Discarded" includes materials that are:
 - Abandoned
 - Recycled
 - Considered "inherently waste-like"

Waste Determination Steps

Is it a Hazardous Waste

- Is it excluded from the definition of hazardous waste per 40 CFR 262?
 - Household wastes
 - Fly ash, bottom ash, slag, and flue gas emission control waste from the combustion of fossil fuels
 - Used chlorofluorocarbon refrigerants (CFCs) from totally enclosed heat transfer equipment, provided it is reclaimed for further use
 - Non-terne plated oil filters

Hmm. What does this mean?

Waste Determination Steps Characteristic Hazardous Wastes

Is the waste a reactive waste?

- Defined at 40 CFR 261.23
- Explosive or “shock sensitive”
- Water reactive
- Cyanide or sulfide-bearing waste that can release toxic gases
- Unstable and readily undergoes violent change
 - Example: polymerizers like methyl methacrylate

Reactivity is most subjective of characteristics – Refer to definition for details and seek multiple references and opinions.

Waste Determination Steps Characteristic Hazardous Wastes

Reactive Hazardous Wastes

- Explosive reagent
- Dry picric acid



Waste Determination Steps Characteristic Hazardous Wastes

Is it a toxic waste? **D004 – D043**

- Defined at 40 CFR 261.24
- Exceeds concentration limits for specified contaminants
- Based on Toxic Characteristic Leaching Procedure (TCLP) test – an analytical procedure published by EPA
 - Total metals test does not = TCLP, but can be used to determine if a TCLP test is necessary

Waste Determination Steps Characteristic Hazardous Wastes

Toxic Metals (complete list)

- Arsenic – 5.0 mg/l
- Barium – 100.0 mg/l
- Cadmium – 1.0 mg/l
- Chromium – 5.0 mg/l
- Lead – 5.0 mg/l
- Mercury – 0.2 mg/l
- Selenium – 1.0 mg/l
- Silver – 5.0 mg/l

Toxic Organics (examples)

- Benzene – 0.5 mg/l
- Carbon Tetrachloride – 0.5 mg/l
- Chloroform – 6.0 mg/l
- MEK – 200 mg/l
- Nitrobenzene – 2.0 mg/l
- 2,4-D – 10.0 mg/l

Eight RCRA metals and over 30 organic constituents.

Roles and Responsibilities

Waste Generator must:

- Conduct waste determination
- Document waste determination
- Maintain a list of waste streams with hazard status and proper disposal method

Waste Determination Documentation

- Two types: process knowledge and analytical data (may work in combination)
- Must keep any documentation such as material safety data sheets (MSDSs), lab reports, and waste profiles for at least three years after the last time you handle the waste

Waste Determination Documentation

- Waste stream description
- Physical state
- Process generating the waste
- Results of waste determination steps
- Attach, as applicable:
 - MSDSs or other technical or manufacturer's data
 - Laboratory report and data
 - Waste profile

Waste Determination Documentation

What is a waste profile?

- A document developed by your hazardous waste contractor
- May or may not be based on lab results
- Signed by the generator representative
- Usually developed for waste streams that will be generated on an ongoing basis
- Essentially an "ID card" for your waste stream for future shipments
- Waste profiles must be updated whenever the process generating the waste changes

Waste Determination Exercise

- Use the *Waste Determination/ Generator Status Flowchart* to guide you
 - You have a half full spray paint can with a broken sprayer? Is it a hazardous waste? What waste codes would apply?
 - A small amount (about one quart) gasoline leak occurs in an auto shop. Employees absorb it with some suitable spill sorbent. Is this a hazardous waste?
 - A gasoline vehicle is fueled with diesel accidentally. The contents of the tank is pumped out into a container. The liquid contains approximately 20-gallons of gasoline and 20-gallons of diesel. Is this a hazardous waste?
 - A container of unused Perchloroethylene (PERC) is found at the dry-cleaning shop. It is no longer used for operations as "wetcleaning" has been adopted as the new practice. Is the PERC a hazardous waste?

Reminders on Generator Status

	□ CESQGs	□ SQGs	□ LOGs
Quantity Limits	≤100 kg/month ≤1 kg/month of acute hazardous waste ≤100 kg/month of acute spill residue or soil	Between 100 - 1,000 kg/month	≥1,000 kg/month ≥1 kg/month of acute hazardous waste ≥100 kg/month of acute spill residue or soil
EPA ID Number	Not required	Required	Required
On-Site Accumulation Quantity	≤1,000 kg ≤1 kg acute ≤100 kg of acute spill residue or soil	≤6,000 kg	No limit
Accumulation Time Limits	None	≤180 days or ≤270 days (if greater than 200 miles)	≤90 days
Storage Requirements	None	Basic requirements with technical standards for tanks or containers	Full compliance for management of tanks, containers, drums, or containment buildings
Sent To:	State approved or RCRA permitted/interim status facility	RCRA permitted/interim status facility	RCRA permitted/interim status facility
Manifest	Not required	Required	Required
Biennial Report	Not required	Not required	Required
Personnel Training	Not required	Basic training required	Required
Contingency Plan	Not required	Basic plan	Full plan required
Emergency Procedures	Not required	Required	Full plan required
DOT Transport Requirements	Yes (if required by DOT)	Yes	Yes

Questions?

