Chemical Waste Management

Legal Issues and You

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What will we cover today

- Resource Conservation and Recovery Act
- Define the common waste types
- Common issues with each waste type

Why are there Environmental Laws?

Resource Conservation and Recovery Act (RCRA)

- Enacted: Oct 21, 1976
- Goals:
  - Protect human health and the environment from the potential hazards of waste disposal
  - Conserve energy and natural resources
  - Reduce the amount of waste generated
  - Ensure that wastes are managed in an environmentally-sound manner

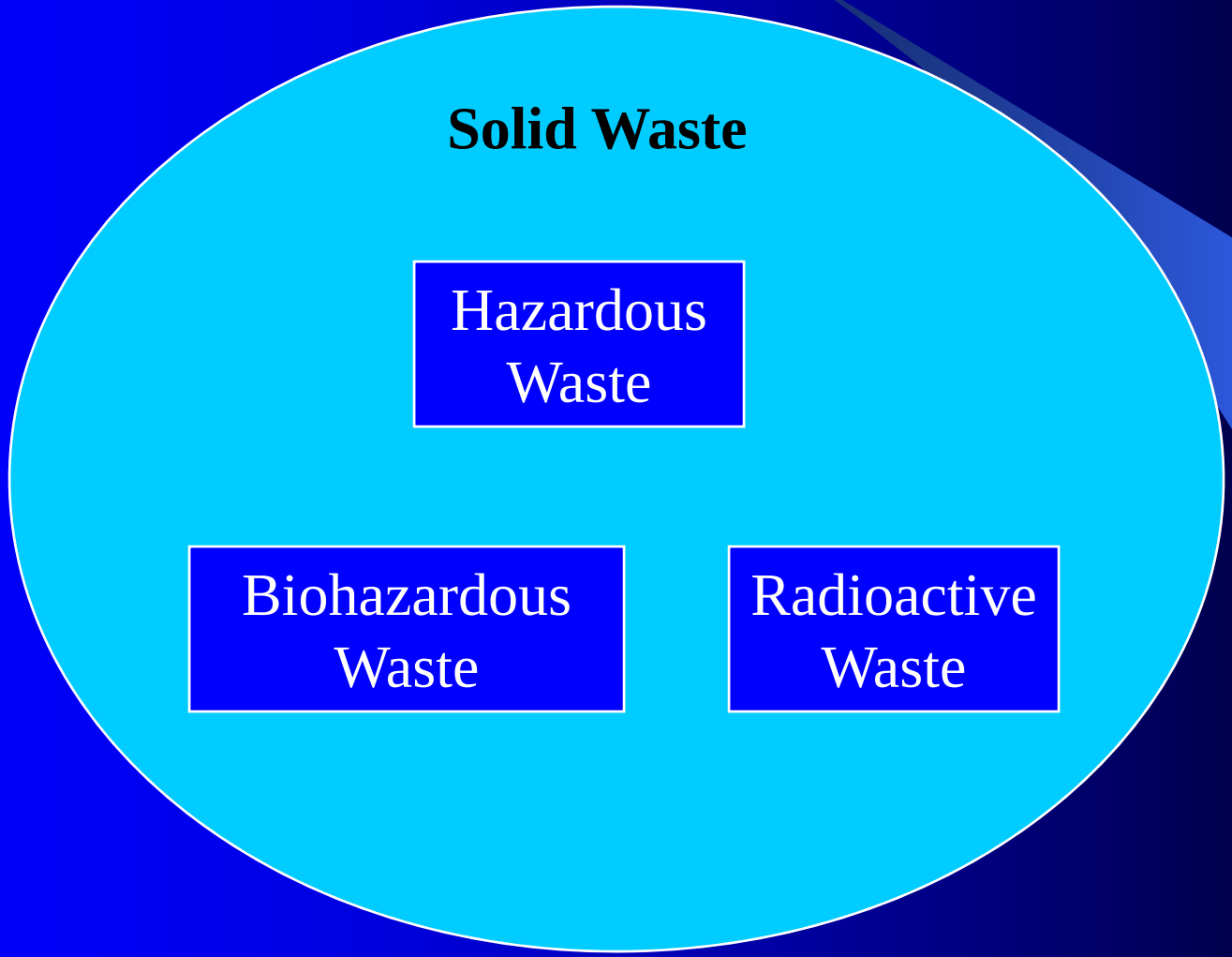
What did RCRA do

- Banned open dumping of waste
- Encouraged source reduction of waste
- Encouraged recycling
- Promoted the safe disposal of municipal waste
- Mandated strict controls over the treatment, storage, and disposal of hazardous waste
- Defined the term Solid Waste
- Gave the EPA the authority to create regulations governing the disposal of waste materials

What is a Solid Waste

- Any solid, semi-solid, liquid, or contained gaseous materials discarded (or abandoned or recycled) from industrial, commercial, mining, or agricultural operations, and from community activities.
- Includes: garbage, construction debris, commercial refuse, sludge from water supply or waste treatment plants, or air pollution control facilities, and other discarded materials.

Types of Waste



What is a Hazardous Waste

- A subset of solid wastes that pose substantial or potential threats to public health or the environment.
- Must meet any of the following criteria:
  - Specifically listed as a hazardous waste by EPA
  - Exhibits one or more of the characteristics of hazardous wastes (ignitability, corrosiveness, reactivity, and/or toxicity)
  - Is generated by the treatment of hazardous waste
  - Is contained in a hazardous waste

Hazardous Waste – Storage Requirements

- Containers must be in good condition
- Containers must be compatible with waste
- Containers must be closed except when adding or removing waste
- Containers must be handled in a manner to prevent leaks and spills
- Containers must be inspected
- Containers must be labeled “Hazardous Waste” and / or list the contents of the container

Hazardous Waste – Accumulation Time

- Large Quantity Generator (> 1,000 kg / month)
  - 90 days
- Small Quantity Generator (100 – 1,000 kg / month)
  - 180 days
- Conditionally Exempt Small Quantity Generator (< 100 kg / month)
  - Unlimited time (must maintain less than 1,000 kg on site at any time)
- Satellite (worksite) Accumulation
  - Full containers removed within 3 days

What is a Biohazardous Waste

- A solid waste that contains or may reasonably be expected to contain pathogens of sufficient virulence and quantity that exposure to the waste by a susceptible host could result in an infectious disease."
- This waste includes such materials as used sharps (needles, syringes, blades, pipettes, broken glass, and blood vials), body fluids or materials mixed with body fluids, bandages, or other materials that have come in contact with body fluids.

Biohazardous Waste – Storage Requirements

- Containers must be clearly labeled with the international biohazard sign and one of the following: "INFECTIOUS WASTE", "BIOMEDICAL WASTE", or "BIOHAZARD“
- Sharps must be stored in rigid plastic containers. Other wastes may be stored in plastic bags or rigid containers.
- Rigid containers must be decontaminated prior to reuse
- Storage areas must provide minimal exposure to the public, be accessible to authorized personnel only, and be labeled with a warning sign consisting of the international biohazard sign and "CAUTION – INFECTIOUS WASTE STORAGE AREA – UNAUTHORIZED PERSONS KEEP OUT"

Biohazardous Waste – Accumulation Time

- If infectious waste is stored longer than seven days, it shall be stored at 40 degrees Fahrenheit (5 degrees Celsius), or below
- Under no conditions may infectious waste be stored for longer than 30 days

What is a Radioactive Waste

- High-level nuclear waste
  - means spent reactor fuel assemblies, dismantled nuclear reactor components, and solid and liquid wastes from fuel reprocessing and defense-related wastes
  - does not include medical or institutional wastes, naturally-occurring radioactive materials, or uranium mill tailings
- Low-level radioactive waste
  - means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities which exceed applicable federal or state standards for unrestricted release.
  - does not include waste containing more than 100 nanocuries of transuranic contaminants per gram of material, nor spent reactor fuel, nor material classified as either high-level waste or waste which is unsuited for disposal by near-surface burial under any applicable federal regulations.

Radioactive Waste – Labeling Requirements

- Containers of must bear a durable, clearly visible label bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL." The label must also provide sufficient information to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.
- (b) Each licensee shall, prior to removal or disposal of empty uncontaminated containers to unrestricted areas, remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials.

Radioactive Waste – Accumulation Time

- Entirely dependant on the license
- BYU stores its short half life (< 90 days) for 10 half lives

Questions