HAZARDOUS WASTE STORAGE
Satellite Accumulation Areas
Unlabeled Containers.
Open Containers.
No “Accumulation Start” date.
No Secondary Containment.
No Weekly Inspections.
“Hazardous Material” is any liquid, solid, or gas having properties requiring special handling due to hazardous chemical characteristics.

“Hazardous waste” is a used or discarded hazardous material. “Discarded” includes abandoned, recycled, or inherently waste-like materials.
The compound or solution is:

- Ignitable.
- Corrosive.
- Reactive.
- Toxic.

The Waste Chemical is one of over 400 listed by the EPA as a Hazardous Waste

See EH&S Website for a list of these chemicals.
WHAT IS AN IGNITABLE WASTE?

- It is a liquid and is capable of burning or causing a fire.
- This material will have a flash point **below 140° F**.
- **Examples:** Acetone, gasoline, industrial alcohols.
The material is a liquid or solid and is capable of eroding materials and human tissue.

These materials have a pH of 2 or less or 12.5 or greater.

Examples: Alkaline cleaners, some chlorides, fluorides, and acids & bases.
**WHAT IS A REACTIVE WASTE?**

- Capable of reacting dangerously with air and water.
- When mixed with water could cause an explosion.
- Could release poisonous fumes,
- Shock sensitive.
- **Examples:** Peroxides, isocynates, cyanides, sulfides, and chlorine.
WHAT IS A TOXIC WASTE?

- Material is capable of poisoning humans.
- Includes arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver.
- Contains a pesticide or other EPA toxin.
- Wastes are determined to be “Toxic” if they fail the TCLP Test.
P-LISTED WASTES

- Are listed wastes that are off-specification, unused, materials and are acutely hazardous.
- **Examples:** Arsenic compounds, cyanide compounds, and strychnine
- P-codes are used for listing. They only apply to pure unused chemicals and to unused products where said chemical is the sole active ingredient.
- Regulations on storage and disposal are very strict.
- Identifiable by P-Listing and the "List-of-Lists".
P-List Waste/Chemical Waste Storage

- Regulated under 40 CFR 262.34(c).
- Labs can collect hazardous waste until they reach collection limits or for a maximum of up to 1 year.
  - Collection Limits are 55 gallons of hazardous waste and/or 1 quart of P-listed acute hazardous wastes at ANY time.
    - Can only exceed these limits for 3 calendar days.
    - Contact EH&S for pickup when containers become 75% full.
  - Containers must be labeled as hazardous waste or otherwise describing the content of the waste.
    - List all chemicals on hazardous waste tag as well as their percentages/concentration.
    - Containers must be dated with an accumulation start date (the date chemicals were first placed in the container).
- Transfer of containers between Satellite Accumulation Areas is not allowed.
- Large Quantity Generator status is obtained if over 1 kg of P-listed waste per month is produced and/or 1000 kg of chemical hazardous waste is produced per month.
WASTE MIXTURES

- Keep non-soluble chemicals separate.
- Keep chlorinated solvents separate from non.
- Precipitate dissolved solids and filter what remains.
- Minimize water in solvents.
- Teach waste minimization as part of lab instruction.
- Remember you pay for chemicals twice. Once when you buy it, and again when your disposing of excess.
  - 14 gallon lab pack = $225 or $16 per gallon
  - 55 gallon bulk = $150 or $2.74 per gallon

THE LESSON HERE IS TO MINIMIZE PURCHASES!
YOU MAY BE A SATELLITE ACCUMULATION SITE...

- If you generate any hazardous waste in your lab or worksite, you are a “Satellite Accumulation Area” and required by the EPA to adhere to certain regulations.

- Noncompliance with any hazardous waste regulation may result in substantial fines and penalties for the University or individual investigators.
Before you start, label the secondary container and make sure the container is the proper container to use for storing the waste (see next slide).

Once a chemical is designated a “waste” or when the first drop of waste has been put into the container, a “hazardous waste” tag must be completed, dated, and placed on that container.

Wastes can only be accumulated for up to one year.

EH&S must be notified for pick-up when containers are ¾ full and prior to the one year accumulation date.
Chemical Waste Collection and Turn In

- The container must be marked “Hazardous Waste” with the accumulation start date or properly tagged.
- Transfer materials only inside fume hood.
- Containers must be kept tightly closed unless adding waste.
- Store in designated “Satellite Accumulation Area”.
- Segregate waste by chemical compatibility.
- Keep waste in secondary containment.
- Inspect daily for signs of damage to containers, labels or leaks.
- Arrange for waste pickup when containers are ¾ full or close to one year from accumulation start date.
- For waste pickup contact EH&S at safety@mail.ecu.edu or 328-6166.
- Clean up all spills promptly.
THE FOUR “L’S” OF SATELLITE ACCUMULATION

- **Lids:** Keep containers tightly closed. Open containers only when adding waste.

- **Labels:** Tag containers before using for waste collection.

- **Leaks:** Inspect waste containers weekly for leaks. Residue on outside of a container is considered a discharge by EPA. Keep containers clean.

- **Location:** Collect waste at or near point of accumulation in a secondary container. Segregate by compatibility.

**Remember label vacuum flasks “used” and its contents, not “waste”**
Safety funnels can be used if they meet the following conditions:

- The funnel is secured to the container.
- The funnel has a gasket and locking devices on the lid.
- It is kept closed when not in use.
- The funnel has a one way valve to prevent spills and emissions.
It is the department’s responsibility for covering the costs of dealing with unknowns.
- Identification, removal, safe disposal.

Any chemical that does not have a label and cannot be identified is referred to as unknown.

Place on the Pick-Up Request Form.
- Include amount and any identifying characteristics.

ECU’s Chemical Contractor will have to retrieve the chemical and an identification analysis will be conducted.
HAZARDOUS WASTE LABELING

- All Hazardous Waste containers must be properly labeled with EH&S tags.
  - If the chemical is in its original container and the label is not damaged, then the container does not need a hazardous waste tag.
- DO NOT use chemical formulas or abbreviations.
  - Full chemical names ONLY!!
- Tag must show all the chemical constituents by percent.
- Make sure to sign the generator’s signature when the tag is applied to the container.
- The Accumulation Start Date MUST be completed on the tag when the 1st drop of waste enters the container.
- Attach the tag to the container with string, wire or rubber band.
- Inspect label integrity and replace if damaged or stained.
- Do not tag containers that are empty, wait until the first drop has been entered into the container.
ENVIRONMENTAL HEALTH & SAFETY
HAZARDOUS WASTE TAG. ATTACH TO WASTE WITH A RUBBER BAND, WIRE, OR STRING.
HAZARDOUS WASTE DISPOSAL

- Ensure that wastes are properly packaged and labeled.
  - Containers with residues, cracked lids, damaged containers, unknowns, or leaking containers will not be collected, and will be left in the lab.
- Complete the waste pick-up request form from EH&S web page and email to safety@ecu.edu .
- Provide your name, phone #, location, identity, and amounts of waste.
- Waste pick-ups are conducted every Thursday.
Must have EH&S approval before drain disposal occurs.
Must comply with EH&S and GUC requirements.
Any approved disposal must be logged on the Drain Log.
PH has to be between 6 and 9.
WASTE MINIMIZATION

- Find a non-hazardous alternative to the hazardous material you are obtaining.
- Practice Inventory Control: Use it all before looking for more.
- Recycle/Recover all materials possible.
- Reduce waste and unnecessary purchases.
- Teach waste minimization as part of lab instruction.
To dispose of “empty” containers in the trash, they must meet the following criteria:

- Contain no radioactive materials or biological wastes.
- Was **not** a container for acutely toxic chemicals.
- Has less than or equal to 3% by weight of its total capacity.
- All content in the container has been collected, recovered or used. No content should be able to immediately spill out if held upside down.
- Non acutely toxic chemical containers should be triple rinsed.
- Labels on the containers for disposal should be removed or defaced and the container should be labeled “EMPTY”.
- Containers for disposal are in the appropriate refuse area with lids removed.
IN THE EVENT OF A SPILL

- If the spill represents an increased risk of exposure to you or others, GET HELP!

- Leave the area, close all doors and call for assistance if any of the following occur:
  - A fire or potential for a fire - dial 911.
  - Serious injury or a hazardous chemical exposure - dial 911.
  - The spill is beyond your ability to control - call EH&S (328-6166).
  - The spill has left the immediate area or threatens others areas - call EH&S (328-6166) or 911.
  - Unknown materials are involved - call EH&S (328-6166).
Call Environmental Health & Safety at 328-6166.

- State your **NAME**.
- Give your **EXACT LOCATION** (Building and room #).
- Explain the **CHEMICAL SPILLED** (type, concentration, and quantity).
- Describe any **SPECIAL CIRCUMSTANCES** that may be involved.
- Leave a **PHONE NUMBER** or **SPECIFIC LOCATION** where you can be reached.

Stay safely nearby to meet EH&S/emergency personnel.
Contact Environmental Health & Safety at 328-6166 or safety@ecu.edu.

For Radiation/Biological Safety Information - Contact the Office of Prospective Health at 744-2070.

Quiz