



# Annual RCRA Hazardous Waste Awareness Training Program



# Federal and State Regulations

- EPA and the NJDEP have implemented:
- Regulations for identification of wastes.
- Performance standards for generators.
- Hazardous waste facility permit program.
- Mandated annual training for employees who handle, process or may regularly be exposed to hazardous waste.

# Training Objectives

- Understand types of waste generators.
- Define hazardous wastes.
- Describe proper handling and storage of hazardous waste.
- Select proper waste containers.
- Label and mark waste containers.
- Complete paperwork for waste shipment.
- Response to emergencies.

# Types of Generators

- Large quantity –generates >1000kg(2205 lbs) in any month.
- Small quantity \* - generates <1000kg(2205 lbs) in any calendar month (approx 5 drums) or < 1kg (2.2 lbs)of acutely toxic waste.
- Never accumulates >6000kg (13,227 lbs) on site.

\* We are a Small Quantity Generator.

# Small Quantity Generator Must

- Obtain a USEPA identification number (Main Campus – NJD991291915 /Nacote Creek – NJR000022723).
- Identify Hazardous Wastes.
- Keep records of wastes.
- Inspect waste containers weekly for damage; document these inspections.
- Dispose of waste through licensed waste haulers/facilities.
- Fill-out and retain proper shipping papers known as a hazardous waste manifest.

# What is a hazardous waste?

- A solid waste (or liquid), or combination of solid wastes, which because of its quantity, concentration, or physical or chemical characteristics may:
- Cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or
- Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

# Types of hazardous waste

## Characteristic Waste

- Ignitable – easily combustible/flammable, flash point < 140 F.
- Corrosive - pH 2.0 or less; 12.5 or more.
- Reactive – unstable or reacts violently with water or other materials.
- Toxic – if extract has heavy metals, pesticides.
- Listed Wastes – automatically hazardous if it is named on RCRA list (>400 chemicals).

# Ignitable Hazardous Waste

## D001



A liquid waste which has a flash point of less than or equal to 140 degrees F (60 degrees C) as determined by an approved test method. (solvents, paint thinners, gasoline)



A non-liquid waste which, under standard conditions, is capable of causing a fire through friction, absorption of moisture or a spontaneous chemical change and when ignited, the waste burns so vigorously and persistently that it creates a hazard. Mainly oxidizers (inorganic peroxide, iron sulfide, phosphorous, strike anywhere matches)



An ignitable compressed gas or oxidizer (hydrogen gas cylinder, aerosol cans, sodium hypochlorite )





# Corrosive Hazardous Waste D002

An liquid waste with a pH of less than or equal to 2 or greater than or equal to 12.5 and that destroys human tissue or corrodes steel is considered to be a corrosive hazardous waste. (acids - battery acid, bases - caustic cleaning compounds).

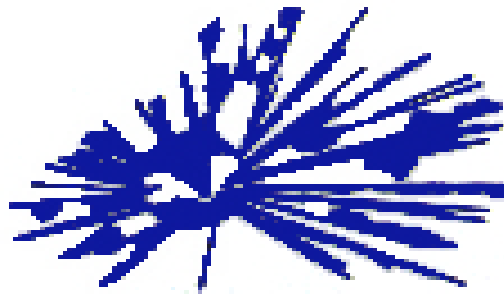


# Reactive Hazardous Waste

## D003



A solid waste that is normally unstable, reacts violently with water, or generates toxic gases (cyanide or sulfide vapors) when exposed to water or air. They can be shock sensitive and explosive (sodium or potassium metal).



# Toxic Hazardous Waste

## D004 thru D042



A waste that contains certain substances determined to be harmful at or in excess of the maximum concentration. Some of those substances include heavy metals such as lead, arsenic, mercury, cadmium, chromium, mercury and silver. Others include solvents such as benzene, methyl ethyl ketone and chloroform. Others include pesticides such as chlordane, cresol and lindane.

Each substance has it's own waste code (D004 – arsenic; D008-lead,etc).



# Listed Hazardous Waste

## F, P, U Codes

- Discarded commercial chemical products, off-specification products, spill residues thereof.
- Acutely Hazardous wastes- these are so hazardous ( certain pesticides, cyanides) that the generation of greater than 2.2 lbs of waste at one time would be enough to categorize the college as a Large Quantity Generator.



# RSC waste

- RSC is a small quantity generator (SQG).
- A waste is not a waste until RSC makes the determination that we cannot use it.
- RSC, as a SQG, has 180 days to dispose of the waste.
- Majority of hazardous waste is generated in our laboratories. Also generated by Plant, Print Shop and Arts and Humanities. Other areas can also generate hazardous wastes.

# Containers

- Compatible with waste
- Needs to be clean
- Sturdy, leak proof
- Closed, tight-fitting cap except when it is necessary to add or remove waste.
- Appropriate size
- Under control of person producing waste
- Stored on/in impermeable containment
- Segregate incompatible materials (keep flammables away from oxidizers, acids away from bases)
- Labeled with hazardous waste label

Waste must be identified

Contains accumulation start date

# Residue in Containers

## Drums, Buckets, Jars

- A container that held a hazardous material or waste is **not** empty and cannot be put in the trash unless:
- all material has been removed using practices commonly employed industry-wide to remove wastes from containers or liners, such as pouring, pumping, aspirating, and draining, and
- no more than 2.5 centimeters (1 inch) of material remains in the container or liner, or
- no more than 3 percent by weight of the container remains for containers with a capacity of 110 gallons or less, and no more than 0.3 percent by weight remains for containers with a capacity greater than 110 gallons

# Residue in Containers

## Gases and Poisons

### GASES

- Containers holding compressed gases (aerosol cans, cylinders) are **not** considered empty until the pressure in the container approaches atmospheric pressure. Since even an “empty” aerosol can will still contain some flammable propellant within it, the can cannot be thrown into the garbage.

### POISONS OR ACUTELY HAZARDOUS WASTE

- A container that held a **listed** pesticide or acutely hazardous waste (P-listed waste) cannot be thrown in the trash unless the the container has been triple rinsed with a solvent appropriate for removing the poison or acutely hazardous waste.



# Labeling

- While being accumulated on-site, each container and tank is labeled or marked clearly with the words, “Hazardous Waste”; and with other words that identify the contents of the containers.
- The date upon which each period of accumulation begins is clearly marked
- Label clearly visible for inspection on each container

# Waste Labeling Accumulation On Site

| Hazardous Waste       |                     |
|-----------------------|---------------------|
| Chemical Name         | Approximate %       |
| _____                 | _____               |
| _____                 | _____               |
| _____                 | _____               |
| Course: _____         |                     |
| Fill Start Date _____ | Fill End Date _____ |

Typical labels –  
Printed on site or  
purchased commercially

|   |
|---|
| <b>HAZARDOUS<br/>WASTE</b>                                    |
| ACCUMULATION<br>START DATE _____                              |
| CONTENTS _____  |
| <b>HANDLE WITH CARE!</b><br>CONTAINS HAZARDOUS OR TOXIC WASTE |

# Waste Labeling

## Pre-Transport Off Site

**HAZARDOUS WASTE**  
**FEDERAL AND/OR STATE LAWS**  
**PROHIBIT IMPROPER DISPOSAL**

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY  
AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY, OR  
THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

ACCUMULATION START DATE \_\_\_\_\_ E.P.A. WASTE NO. \_\_\_\_\_

D.O.T. PROPER SHIPPING NAME \_\_\_\_\_

AND \_\_\_\_\_

U.N. OR N.A. NO. \_\_\_\_\_

GENERATOR'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

E.P.A. I.D. NO. \_\_\_\_\_

MANIFEST TRACKING NO. \_\_\_\_\_

**HAZARDOUS WASTE - HANDLE WITH CARE**

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# Satellite Accumulation

- The total volume of all the containers must not exceed a maximum of 55 gallons.
- Marked as **Hazardous Waste** and appropriate hazard warning – flammable, etc. and have an accumulation start date. Once container is full, the date is entered on the label as the Accumulation Start Date.
- Keep closed at all times when not actively adding waste to container.
- The stored waste must be inspected weekly for damage and leaks.

# Contingency Plan

- At all times there must be at least one employee either on the premises or on call ( *i.e.*, available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This employee is the **emergency coordinator**.
- **CAMPUS POLICE – 911 is the colleges EMERGENCY COORDINATOR.**
- In each area that hazardous waste is stored or handled the generator must post the following information next to the telephone:
  - (A) The name and telephone number of the emergency coordinator;
  - (B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and
  - (C) The telephone number of the fire department, unless the facility has a direct alarm.

# Contingency Plan

- The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies;
- The emergency coordinator (Campus Police), or their designee must respond to any emergencies that arise. The applicable responses are as follows:
  - (A) In the event of a fire, call the **Campus Police** (they will contact the fire department) or attempt to extinguish it using a fire extinguisher if you have been trained;
  - (B) In the event of a spill, contain the flow of hazardous waste to the extent possible, and as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil;

# Emergency Response

- The college must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies. College personnel can only respond to an **“Incidental Release”** once familiar with the material’s MSDS, and the proper PPE that must be worn.

# Emergency Response

## SPILL or LEAK

- Any individual causing or discovering a spill, leak, or situation that may lead to a spill will immediately take the following action.
- REPORT the spill immediately to the **Campus Police** by calling **911** from a college telephone or 609-652-4444 from an outside phone.
- ISOLATE the spill area. PASS THE WORD and ALERT those people in adjacent areas. Direct people away from the spill area. Evacuate the area.
- Do not attempt to clean the leak or spill. Clean up efforts will be directed by the Emergency Coordinator.
- The Emergency Coordinator, or their designee, will first identify the hazardous and physical properties of the leak or spill based on a review of the materials MSDS to determine the proper personal protective equipment that must be worn to take defensive and offensive containment and clean-up procedures.
- The Emergency Coordinator will initiate defensive measures to contain the flow of hazardous waste to the extent possible through the use of absorbents, pads and pigs contained in spill kits kept at strategic locations throughout the college. The construction of dikes or dams may be required to prevent the spill from entering drains, catch basins, soil and surface water.



# Emergency Response

## SPILL or LEAK

- Offensive measures will be initiated to absorb or neutralize the contained spill material with appropriate material that is compatible with the waste (do not use organic materials for cleaning up oxidizers or strong acids as the absorbent material may ignite).
- The clean-up residue must be collected with non-sparking tools and placed in a sealable clean container which is compatible with waste that will be placed in it (the waste will not melt or corrode the container).
- The container must be immediately labeled with a hazardous waste label and the accumulation start date is filled in on the label.
- The container must be removed and placed in the colleges waste accumulation area and disposed of as a hazardous waste within 180 days of the accumulation start date.

# Emergency Response

## FIRE

- In the event of a fire, pull the nearest **FIRE ALARM** and call **911- Campus Police**.
- If the spilled material is flammable, turn off ignition and heat sources.
- PASS THE WORD and ALERT those people in adjacent areas.
- Attempt to extinguish it using a fire extinguisher if it is safe to do so, and you have been trained.
- Evacuate to a designated as location.
- The Emergency Coordinator will take defensive measures to contain the flow of fire water run-off contaminated with hazardous waste to the extent possible through the use of absorbents, pads and pigs contained in spill kits kept at strategic locations throughout the college to construct dikes or dams. This action which will prevent it from entering drains, soil and surface water.

# Reporting Incidents

- In the event of a fire, explosion, or other release which could threaten human health outside the facility, or when the generator has knowledge that a spill has reached surface water or soil, the generator must immediately notify the NJDEP (using their 24-hour toll number- 877-927-6337) and the National Response Center (using their 24-hour toll free number 800-424-8802). The report must include the following information:
  - (1) The name, address, and U.S. EPA Identification Number of the generator;
  - (2) Date, time, and type of incident (e.g., spill or fire);
  - (3) Quantity and type of hazardous waste involved in the incident;
  - (4) Extent of injuries, if any; and
  - (5) Estimated quantity and disposition of recovered materials, if any.
- **Reporting must be done by the Director of the Academic Laboratories and Field Facilities or the Associate Director of Risk Management-Environment/Health/Safety.**

# Waste Transport & Disposal

- Transport only by licensed Hazardous Waste Hauler.
- Shipment must be accompanied by a Hazardous Waste Manifest signed by a RSC authorized representative.
- Transporter must sign and date manifest acknowledging acceptance of the waste and give us a copy of the signed document prior to leaving.
- Manifest must accompany shipment.
- Shipment must be received by a licensed Hazardous Waste Treatment, Storage and Disposal Facility (TSD)
- Receiving TSD must return signed copy of manifest to RSC within 30 days acknowledging receipt of waste.

# Waste Minimization

- Waste minimization is any action that reduces the amount and/or toxicity of chemical wastes that must be *shipped off-site* for disposal as hazardous waste. It is incumbent upon every member of the Stockton community to be aware of the environmental and financial impacts of hazardous chemical waste, and to actively seek to minimize the volume of hazardous waste that is generated.
- The USEPA estimates that 50% of the chemical waste generated at facilities consists of unused chemicals. As a result, RSC encourages departments/laboratories to purchase chemicals only in amounts that will be used within the budget year.
- Apply all the chemicals for their intended purpose.
- When purchasing material substitute non-hazardous materials for hazardous ones.

# Universal Waste

- waste lamps- fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps
- consumer electronics include, but are not limited to, computers, printers, copiers, tele-facsimiles, VCRs, stereos, televisions, and telecommunication devices
- mercury containing devices – thermostats
- ballasts
- pesticides
- batteries
- oil based finishes – oil based paints, lacquers, stains, aerosol paint cans

# Universal Waste Requirements



Stored in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents and can contain a leak. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.



Each container or package in which such Universal Waste is contained must be labeled or marked clearly with the date it became a waste and with one of the following phrases: Universal Waste—Lamp(s)," or Universal Waste—Consumer Electronics, etc.



Universal Waste may be accumulated for no longer than one year from the date the universal waste is generated.



A small quantity handler of universal waste must inform all employees who handle or have responsibility for managing universal waste. The information must describe proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility.



A small quantity handler of universal waste must immediately contain all releases of universal wastes and other residues from universal wastes.



A small quantity handler must not store more than 11,023 pounds of universal waste at any one time.

# Universal Waste Labels

- Place the universal waste in a container and mark or label the container with the earliest date that any universal waste in the container became a waste or was received.
- Mark or label each individual item of universal waste (e.g., each battery or thermostat) with the date it became a waste or was received.



**UNIVERSAL  
WASTE**

SHIPPER \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY, STATE, ZIP \_\_\_\_\_

CONTENTS \_\_\_\_\_

ACCUMULATION START DATE \_\_\_\_\_



# Assistance

- Please feel free to contact me for any questions that you may have regarding your particular needs.

Robert Chitren

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Environment/Health/Safety

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