York College

Regulated Wastes Awareness Training

YORK COLLEGE
THE CITY UNIVERSITY OF NEW YORK

O'BRIEN & GERE
COMPANIES

Purpose

- *To help York College faculty, staff, and students comply with hazardous waste management regulations, as well as regulations related to universal waste, medical waste, radioactive waste, and used oil.*
- *Protect human health and the environment*
- *Meet or exceed compliance with the Resource Conservation and Recovery Act (RCRA)*

Background

- 1976: Resource Conservation and Recovery Act (RCRA)
- USEPA Region I (New England) audited a number of universities and colleges and found many instances of non-compliance with environmental regulations
- USEPA Region II (NY, NJ, PR, USVI) is now engaged
- CUNY negotiated & signed an agreement with Region II USEPA

Background

CUNY has engaged O'Brien & Gere to assist in its compliance program at the University and College levels

CUNY Initiatives

CUNY Compliance Program consists of

- Performing an environmental audit at each college
- Awareness Training
- Individual one-on-one training and technical assistance in laboratories or work areas
- Preparation of Management Plans at the college level
- Preparation of Policy and Procedures for the University

York College Contacts

- **Environmental Health & Safety Officer**:
  - Ching See Chan; Ext. 2662
- **Chemical Hygiene Officer**:
  - Dr. Lawrence Johnson; Ext. 2584
- **Radiation Safety Officer**:
  - Dr. Louis Levinger; Ext. 2704
- **Emergencies**:
  - Security; Ext. 2222

Awareness Training Topics

- Generation and identification
- General recommendations
- Satellite accumulation areas (SAAs)
- Packaging and labeling
- Pickup procedures
- Storage areas

Awareness Training Topics

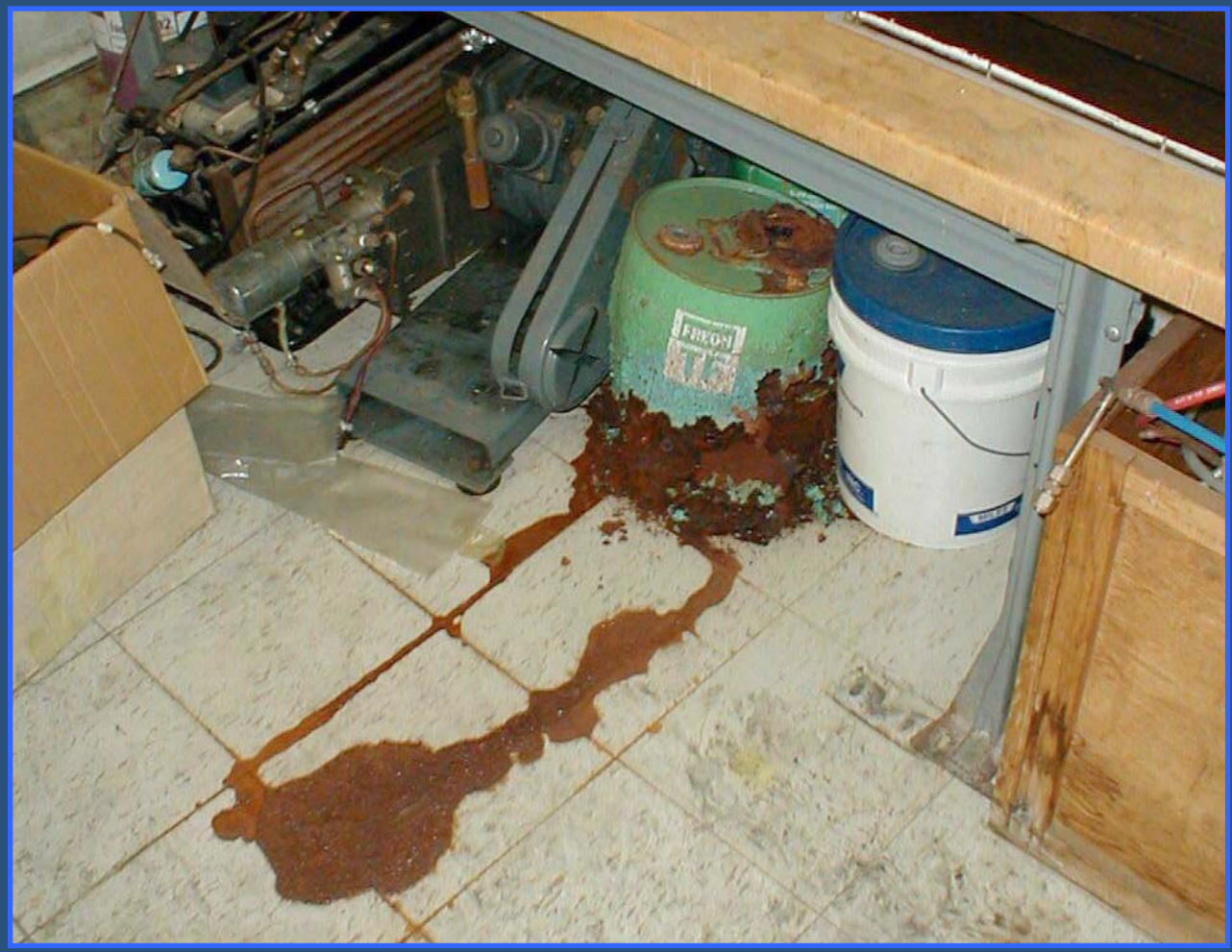
- Inspections
- Reporting and record keeping
- Other types of waste (universal, medical, radioactive, used oil)
- Spills & emergencies
- Information sources and contacts

Awareness Training

- **Training is required if you:**
  - determine a hazardous waste
  - add hazardous waste to a container
  - move or transport a hazardous waste
  - inspect hazardous waste areas
  - respond to spills of a hazardous waste

  - In some of these instances, persons are required to have more extensive training

Which Wastes Are Hazardous?



Laboratory Materials

- Solvents
- Reagents
- Reaction products
- Contaminated materials

Construction Materials

- Ignitable wastes
- Solvents
- Paints
- Acids and bases

Vehicle Maintenance Materials

- Solvents
- Toxic wastes
- Paint waste
- Batteries

Art & Graphics Materials

- Solvents
- Paint waste
- Acids and bases
- Ink waste

Identifying Hazardous Wastes

Solid Wastes

Material of any physical form that is discarded by meeting any of the following conditions

- Material is abandoned by disposal or incineration
- Material is inherently waste-like
- Material is recycled in specific ways that are considered waste management

Abandoned Chemicals

Two Types of Hazardous Waste

- Listed wastes - 6 NYCRR 371.4
- Characteristic wastes - 6 NYCRR 371.3

Listed Hazardous Wastes

- **F List:** wastes from certain common industrial or manufacturing processes

  Example: spent perchloroethylene used as solvent
- **K List:** wastes from certain specific industries

  Example: petroleum refining wastewater treatment residues
- **P and U Lists:** discarded commercial chemical products (applies only if chemical is discarded unused)

Characteristic Hazardous Wastes

- Ignitable waste (flash point<140º F)

  examples: alcohols, acetone, toluene, xylene, WD-40

- Corrosive waste (pH < 2 or > 12.5)

  examples: acids, rust removers, hydroxides, caustics, drain cleaners

Characteristic Hazardous Wastes (cont.)

- Reactive waste (violently reacts when exposed to water, creates toxic fumes under normal handling)

  examples: picric acids, ethyl ethers, sulfide wastes

Characteristic Hazardous Wastes (cont.)

- Toxicity characteristic leaching procedure (TCLP): laboratory test that creates a liquid leachate that is similar to what would be expected from a landfill

  examples: wastes with heavy metals, volatile organic compounds (VOCs)

Generator Categories

- Large Quantity Generator (LQG):
  >1,000 kg/mo (>2,205 lb/mo);
  acute HW - no limits
- Small Quantity Generator (SQG):
  100 kg/mo to 1,000 kg/mo
  (220.5 lb/mo to 2,205 lb/mo);
  acute HW - ≤ 1 kg/mo (≤ 2.2 lb/mo)
- Conditionally Exempt Small Quantity Generator (CESQG):
  ≤100 kg/mo (≤ 220.5 lb/mo);
  acute HW - ≤ 1 kg/mo (≤ 2.2 lb/mo)

Mixture and 'Derived-From' Rules

Listed Waste

- Mixture Rule: any amount of non-hazardous waste mixed with any amount of a listed hazardous waste is a hazardous waste

- Derived-From Rule: by-products of hazardous waste treatment of listed hazardous wastes are hazardous waste

Mixture and ‘Derived-From’ Rules

Characteristic Waste

- Treatment residues are hazardous only if they exhibit hazardous waste characteristics

Example: neutralized sulfuric acid may be discharged to the sewer

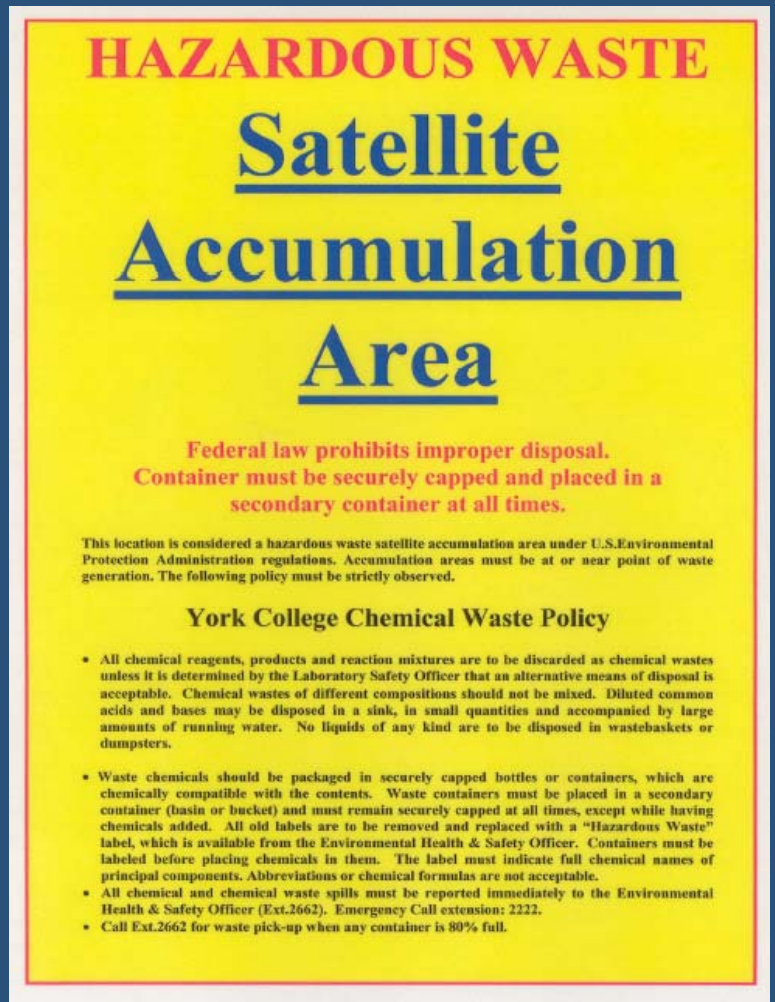
General Requirements

- Hazardous wastes may not be dumped down the drain or discarded with garbage
- Only trained personnel may manage hazardous wastes
- Wastes must be placed in proper containers
- Wastes may be added to proper containers until approx. 80% full at SAAs
- SAA must be close to the point of generation and under the control of the supervisor

Storage

‘Satellite’ Storage

RCRA allows a generator to accumulate hazardous waste at or near the point of generation (*i.e.*, SAAs) if certain requirements are met.



HAZARDOUS WASTE

Satellite Accumulation Area

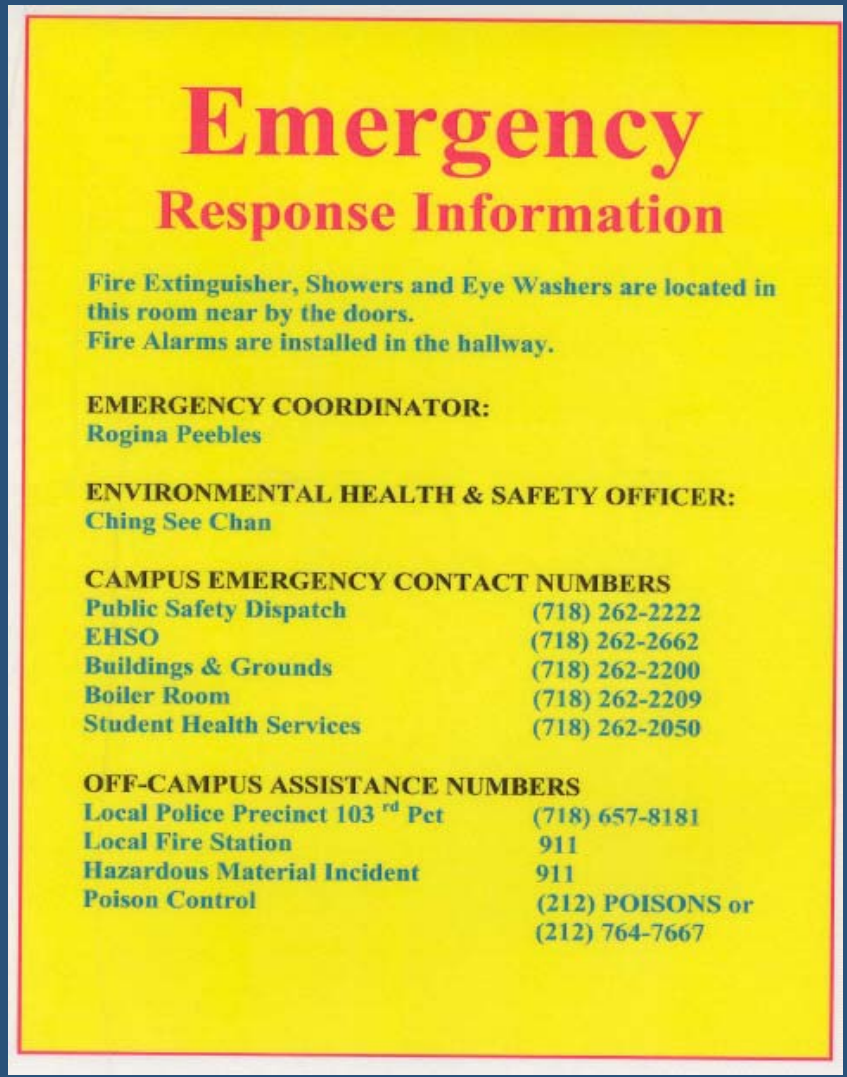
Federal law prohibits improper disposal.
Container must be securely capped and placed in a secondary container at all times.

This location is considered a hazardous waste satellite accumulation area under U.S.Environmental Protection Administration regulations. Accumulation areas must be at or near point of waste generation. The following policy must be strictly observed.

York College Chemical Waste Policy

- All chemical reagents, products and reaction mixtures are to be discarded as chemical wastes unless it is determined by the Laboratory Safety Officer that an alternative means of disposal is acceptable. Chemical wastes of different compositions should not be mixed. Diluted common acids and bases may be disposed in a sink, in small quantities and accompanied by large amounts of running water. No liquids of any kind are to be disposed in wastebaskets or dumpsters.
- Waste chemicals should be packaged in securely capped bottles or containers, which are chemically compatible with the contents. Waste containers must be placed in a secondary container (basin or bucket) and must remain securely capped at all times, except while having chemicals added. All old labels are to be removed and replaced with a “Hazardous Waste” label, which is available from the Environmental Health & Safety Officer. Containers must be labeled before placing chemicals in them. The label must indicate full chemical names of principal components. Abbreviations or chemical formulas are not acceptable.
- All chemical and chemical waste spills must be reported immediately to the Environmental Health & Safety Officer (Ext.2662). Emergency Call extension: 2222.
- Call Ext.2662 for waste pick-up when any container is 80% full.

Emergency Information



Emergency
Response Information

Fire Extinguisher, Showers and Eye Washers are located in this room near by the doors.
Fire Alarms are installed in the hallway.

EMERGENCY COORDINATOR:
Rogina Peebles

ENVIRONMENTAL HEALTH & SAFETY OFFICER:
Ching See Chan

CAMPUS EMERGENCY CONTACT NUMBERS

Public Safety Dispatch	(718) 262-2222
EHSO	(718) 262-2662
Buildings & Grounds	(718) 262-2200
Boiler Room	(718) 262-2209
Student Health Services	(718) 262-2050

OFF-CAMPUS ASSISTANCE NUMBERS

Local Police Precinct 103 rd Pct	(718) 657-8181
Local Fire Station	911
Hazardous Material Incident	911
Poison Control	(212) POISONS or (212) 764-7667


AID KIT
Johnson & Johnson
FIRST AID
Emergency
Response Information
HAZARDOUS WASTE
Satellite
Accumulation
Area
Chemical
Spill
Control
Materials
Area
NO ENTRY
NO EXIT
WEAR YOUR
SAFETY GLASSES
Mini Spill
Response Kit
09/10/2003

Containers

Definition: portable devices in which a hazardous waste is stored, transported, treated, disposed of, or otherwise handled.

Container Requirements

Containers must be:

- in good condition
- compatible with waste
- kept closed except when being filled or emptied
- handled in a safe manner
- marked with the words “Hazardous Waste” and the words describing the contents, DO NOT use chemical formulas
- NOTE: incompatible waste containers must be separated from one another

Pick up Procedures

- Written procedures
- When full, container must be removed from the SAA within 3 days - (use 80% “rule”)
- Pick up designee must be trained
- Spill cleanup material must be available
- Place bottles in a tray in a cart, use “acid bucket” for acids and bases
- Waste must be secured in carts

Storage Areas

- For LQGs (>1000 lb/mo): 90 day limit before shipment
- For SQGs (>100 <1000 lb/mo): 180 day limit before shipment
- Containers must be in good condition & kept closed
- Proper labeling required, including date
- Inspected weekly
- Emergency equipment & communications

Inspections (SAAs)

- SAAs should be routinely inspected (*i.e.*, on a weekly basis) by the designated lab or work area waste coordinator
- Use the inspection form provided by the EHSO
- Return completed forms to the ESHO

Inspections (Storage Areas)

- Required weekly for SQGs and LQGs
- Use the inspection form provided by the EHSO
- Return completed forms to the ESHO
- Items to include: spills, leaks, container condition, containers caps in place, readiness of emergency equipment, separation of incompatible wastes, signage present

Record Keeping

- “Hazardous Waste Manifest” record of shipping
- Biennial Reporting
- Land disposal restrictions (LDRs)
- Training records

Universal Wastes

- Generated in a wide variety of settings, not only industrial
- Generated by a wide community
- Present in significant volumes in non-hazardous systems
- Examples:
  - batteries
  - pesticides
  - mercury-containing thermostats
  - hazardous waste lamps

Regulated Medical Wastes

Regulated Medical Waste (RMW): waste generated in the diagnosis, treatment, or immunization of human beings or animals including the following:

- Infectious animal wastes
- Human pathological wastes
- Human blood and blood products
- Needles and syringes
- Cultures and stocks

RMW Packaging

- Sharps
  - ↓ disposed of in red, rigid, puncture- and break-resistant, leak proof container
- Liquids & Non-Sharp Solids
  - ↓ disposed of in red bags which are impervious to moisture and have strength sufficient to resist tearing under normal conditions of usage and handling

Radioactive Waste Management

- Generation, storage, transportation, and disposal is governed by federal, state, and local agencies
- Disposal options are limited and costly
- Minimize waste generation

Radioactive Waste Guidelines

All radioactive waste generated must be:

- Stored in a “Controlled Area”
- Properly stored and packaged
- Properly shielded
- Properly documented
- Properly labeled
- Properly segregated

Used Oil

- NYSDEC presumes used oil is recycled unless disposed
- Used oil mixed with hazardous waste is regulated as a hazardous waste
- Used oil mixed with an ignitable characteristic waste (*e.g.*, mineral spirits) can be managed as a non-hazardous waste if the Flash Point is > 140º F
- Materials contaminated with used oil, if properly drained, are not used oil (the drained oil is regulated as used oil)

Compressed Gas Cylinders

- Return to vendor, or
- Contact EH&S Office for assistance

Ching See Chan,

Ext. 2662

Mercury Waste

- Replace thermometers and measuring instruments containing mercury with equipment that uses non-hazardous fluids or electronic devices
- Contact EH&S Office if mercury spill occurs
- Contact EH&S Office prior to generating mercury waste mixtures in order to develop a strategy for waste minimization and disposal.

“e-wastes” (*i.e.*, computer components, laboratory instrumentation)

Spills and Emergencies

- IN THE EVENT OF A SPILL
  - extinguish all sources of ignition
  - isolate incompatible materials
  - attempt to stop or contain the release at the source --PROVIDED THIS CAN BE DONE SAFELY
  - isolate receptors such as floor drains, sumps, soil, and runoff areas

Spills and Emergencies

- CLEAN UP A SPILL ONLY IF
  - You have been trained
  - You have the knowledge to do it safely
  - You have materials to clean it up
  - You feel it is safe to clean it up

Spills and Emergencies

- Minor chemical spill - less than 1 liter
  - notify others in the area
  - avoid breathing fumes
  - contact EHSO (Ext. 2662) & Campus Security (Ext. 2222)
  - assess the size, toxicity, hazards of the spill
  - provide adequate ventilation
  - locate clean-up materials
  - use proper PPE and safety equipment

Spills and Emergencies

- Major chemical spill - more than 1 liter or wide spread - DO NOT ATTEMPT TO CLEAN UP!
  - contact the EHSO (Ext. 2662) & Campus Security (Ext. 2222)
  - notify others in the area and evacuate
  - attend to injured or contaminated persons
  - assess the size, toxicity, hazards of the spill
  - have person with knowledge of incident assist emergency personnel upon arrival

Spills and Emergencies

- The Spill Response Team Coordinator will direct and coordinate the spill clean-up activities and evaluate if an environmental contractor will be required to perform the clean-up activities. The Spill Response Team Coordinator will initiate any notification procedures.

Spills and Emergencies

- Cleaning up Small Mercury Spills
  - evacuate the area
  - turn off air conditioning
  - close interior doors
  - determine if spill must be reported (>2 tablespoons)
  - contain the spill
  - DO NOT USE A VACUUM

Spills and Emergencies

- Cleaning up Small Mercury Spills
  - ventilate the room to outdoors
  - dress appropriately
  - pick up all visible mercury droplets
  - transfer to plastic container and seal
  - sprinkle powder from Hg spill kit over area
  - collect powder
  - dispose of all material as a hazardous waste

Costs of Non-Compliance

Pratt Institute	$301,000
Manhattan College	$111,199
Long Island University	$219,883
New Jersey City University	$ 88,344
Columbia University	$797,029
Raritan Valley Comm. College	$ 39,599

YORK COLLEGE
THE CITY UNIVERSITY OF NEW YORK
Environmental Health and Safety Office

HAZARDOUS WASTE MANAGEMENT

Acknowledgement of Awareness Level Training

I hereby acknowledge having received instructions on the procedures for hazardous waste management including:

- hazardous waste generations and identification
- segregation of chemicals
- container use, marking, labeling, and on-site transportation
- spill response procedures
- accumulation area requirements
- inspections
- hazardous waste pick-up procedures
- storage requirements
- manifesting and off-site transportation requirements

Name _____

Signature _____

Title _____

Date of Training _____

Location of Laboratory or Work Area:

Building _____ Floor _____ Room Number _____

Name of Principal Investigator or Supervisor _____

Name of Trainer John Gebrian
Ralph McClurg

O'Brien & Gere Engineers, Inc.