Hazardous Waste Management for Colleges and Universities

NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch
Resource Conservation and Recovery Act (RCRA) History

- Passed by Congress in 1976 to provide a cradle-to-grave management of hazardous waste

- Enforced by the following governmental agencies:
  - Federal - Environmental Protection Agency (EPA)
  - State - Division of Waste Management, Hazardous Waste Section
What will be covered?

- What is Hazardous Waste?
  - Waste Determination
- Hazardous Waste Generator Status
- Requirements for Conditionally Exempt Small Quantity Generators
- Typical areas where hazardous waste is generated at a University/College
What is Hazardous Waste?

It is waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.
Hazardous Waste Determination

- Is it a solid waste?
  - No → Not subject to RCRA Subtitle C
  - Yes → Is it an excluded waste?
    - Yes → Waste is hazardous and subject to Subtitle C regulation
    - No → Does it meet a listing description?
      - Yes → Waste is hazardous and subject to Subtitle C regulation
      - No → Does it exhibit a characteristic?
        - Yes → Waste is hazardous and subject to Subtitle C regulation
        - No → Is it an excluded waste?
          - Yes → Waste is hazardous and subject to Subtitle C regulation
          - No → Does it meet a listing description?
            - Yes → Waste is hazardous and subject to Subtitle C regulation
            - No → Does it exhibit a characteristic?
              - Yes → Waste is hazardous and subject to Subtitle C regulation
              - No → Not subject to RCRA Subtitle C
Hazardous Waste Determination

Is the material:
1) Solid waste?
2) Excluded/exempt?
3) “Listed” hazardous waste?
4) “Characteristic” hazardous waste?
What is a “Waste”? 

A material that has been used or has otherwise served its intended purpose and, for whatever reason (e.g. contamination, spent) can or will no longer be used for its intended purpose.
Examples of Materials Excluded from Regulation

- **Materials that are not solid wastes:**
  - Industrial wastewater when subject to CWA

- **Materials that are not hazardous waste:**
  - Household hazardous wastes
    - Exemption includes university/college dormitories

- **Other**
  - Used Oil to be recycled 40 CFR 261.6(a)(4)
  - Residues from RCRA Empty Containers
What is “Listed” Hazardous Waste?

Listed Hazardous Waste

F - Non-specific sources
K - Specific sources
P - Discarded products, off-specification species, container residues, spill residues
U - Chemical products, intermediates, off-specification commercial products
What is a “Characteristic” Hazardous Waste?

Characteristics

- **Ignitability** - Flash point < 140 °F
- **Corrosivity** - pH < 2.0 or > 12.5
- **Reactivity** - spontaneously reacts with air / water
- **Toxicity** -
  - measured by performing Toxicity Characteristic Leaching Procedure (TCLP)
  - 40 parameters listed in 40 CFR 261.24
? Don't know what this product is.
Hazardous Waste Generators

- **Conditionally Exempt Small Quantity (CESQG)**
  - ≤ 220 lbs per calendar month
  - ≤ 2.2 lbs acute hazardous waste

- **Small Quantity (SQG)**
  - >220 lbs and <2200 lbs per calendar month
  - ≤ 2.2 lbs acute hazardous waste

- **Large Quantity (LQG)**
  - >2200 lbs per calendar month
  - >2.2 lbs acute hazardous waste
## Quick Reference Guide for Hazardous Waste Generator Status

<table>
<thead>
<tr>
<th>Type of Generator</th>
<th>Hazardous Waste Generation Rate</th>
<th>P-listed (Acutely Toxic) Waste Generation Rate</th>
<th>Maximum Storage Time</th>
<th>Maximum On-Site Waste Accumulation Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditionally Exempt Small Quantity Generator (CESQG)</td>
<td>≤ 220 lbs (100 kg) of non acute HW in a calendar month (approximately equal to ½ of a 55-gallon container)</td>
<td>≤ 2.2 lbs (1 kg) of acute HW</td>
<td>No time limit</td>
<td>2200 lbs (1000 kg) (approximately equal to five 55-gallon containers)</td>
</tr>
<tr>
<td>Small Quantity Generator (SQG)</td>
<td>220 lbs (100 kg) but &lt; 2200 lbs (1000 kg) of non acute HW in a calendar month (approximately equal to five 55-gallon containers)</td>
<td>≤ 2.2 lbs (1 kg) of acute HW</td>
<td>180 days; 270 days if TSDF is more than 200 miles from the facility</td>
<td>13,200 lbs (6000 kg) (approximately equal to thirty 55-gallon containers)</td>
</tr>
<tr>
<td>Large Quantity Generator (LQG)</td>
<td>More than 2200 lbs (1000 kg) of non acute HW in a calendar month</td>
<td>&gt; 2.2 lbs (1 kg) of acute HW</td>
<td>90 days</td>
<td>No quantity limit</td>
</tr>
</tbody>
</table>
Generator Regulatory Baggage

CESQG

SQG

LQG
Conditionally Exempt Small Quantity Generator Requirements

- Identify waste to determine whether it is hazardous waste (40 CFR 262.11)
- Do not accumulate more than 2200 lbs of hazardous waste or 2.2 lbs of acute hazardous waste at any time
- Treat the waste on-site, or ensure that the waste is sent to a treatment, storage and disposal facility for hazardous waste
Areas Where Hazardous Waste is Generated at a College/University

- Science Laboratories
- Maintenance Department
- Fleet Management
- Grounds Maintenance
- Housekeeping
- Art Department
- Healthcare Facilities or Hospitals
- Special College/University Programs
What Types of Hazardous Waste Are Generated at a College/University?

- Flammable/Combustible liquids (Acetone, Ethyl Acetate, Isopropyl Alcohol, Methanol, Mineral Spirits) – Science Lab or Printing
- Chlorinated Solvents/Chlorinated Hydrocarbons (e.g., Chloroform) – Science Lab
- Corrosive liquids – Photography, Printing shop
What Types of Hazardous Waste Are Generated at Colleges/Universities?

- Unused excess, expired or off-specification commercial products such as laboratory reagents – Science Labs
- Discarded solvent based paint
- Spill cleanup materials (chemical cleanup)
NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch

Phil Orozco – Environmental Senior Specialist

Mailing Address: 1646 Mail Service Center
Raleigh, NC 27699-1646

Phone: 919-212-2501
Fax: 919-715-3605
Email: phil.orozco@ncdenr.gov
GET INVOLVED NOW.
POLLUTION HURTS ALL OF US.

You can help by becoming a community volunteer. Write:
Keep America Beautiful, Inc.
59 Park Avenue, New York, New York 10016

Public Service of New Jersey Advertising & Public Relations Council
RCRA Compliance Inspection Facility Walk-Through

NCDENR – Division of Waste Management
Hazardous Waste Section
Compliance Branch

http://deq.nc.gov/about/divisions/waste-management
During the Walk-Thru
The Inspector will look at:

- Points of Generation
  (esp. Labs & Vacuum Hoods)
- Satellite Accumulation Areas
- Storage Areas
- Maintenance Areas – UW & oil
- Emergency Preparedness and Prevention Measures
- General Appearance
- We carry cameras
Satellite Accumulation Areas
SAAs

Requirements:

- Located AT or NEAR the point of generation and under control of operator
- Waste accumulation IN containers
- Closed unless adding or removing waste
- Labeled or marked with words identifying the contents as WASTE
- No more than a total of 55 gallons
IN COMPLIANCE
Satellite Accumulation Areas
SAAs

1) Located at or near the point of generation and under the control of the operator of the process.

Typically, the waste containers are within the operator’s site while performing his or her job.
CAUTION
HAZARDOUS WASTE
MATERIAL STORAGE ONLY

Aqueous Acid
or
Organic Acid Only

NO FLAMMABLES

Satellite Accumulation
Satellite Accumulation
Waste must be IN containers
Containers Must be Closed

Latch Unsecured
Words Identifying the Contents
55 Gallon Limit of hazardous waste (or 1-quart of acute HW)
55-Gallon Limit in a SAA

If you accumulate more than 55 gallons of hazardous waste at a Satellite Accumulation Area, containers holding the excess waste must be DATED; and, the excess amount must be moved to storage within 3 days.
Capacity Not Weight

The 55-gallon limit refers to the combined capacity allowed in the containers stored at a single SAA. The waste does not have to be a liquid & weight does not matter.
Next Topic – HW Storage Areas
Hazardous Waste Storage Areas

Containers must be clearly marked/labeled with the words “Hazardous Waste” and an accumulation start date must be visible.
North Carolina requires a 24” Aisle Space in the 90/180 day HW Storage Areas
Containers must be managed in good condition
Waste must be compatible with container
OK to Consolidate Waste, but it must be compatible with each other
Incompatible waste must be separated by a dike, berm, wall or other device
Testing and Maintenance
40 CFR 265.33

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.
Access to Communication/Alarm Systems  40 CFR 265.34

Whenever hazardous waste is being poured, mixed, spread, or handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device either directly or through visual contact with another employee – Buddy System.

If there is just one employee on the premises while the facility is operating, he must have immediate access to a device capable of summoning external emergency assistance – cell phone OK.
Common Storage Area Violations

- No labels or dates on containers
- Dates not visible
- Containers open
- Waste must be in the container
- Evidence of releases or leaks
- Containers in poor condition
- Dates older than 90 or 180 days
- No aisle space or < 24 inches
Another Point to Mention
We Look at Chemical Storage Rooms and the General Housekeeping
Next Topic – Used Oil
Used Oil Management Requirements 40 CFR 279.22

- Store only in containers and/or tanks
  - Good condition, no visible leaks
  - Label “Used Oil”

- Respond to releases

- Other Regs: DWQ - SPCC (40 CFR 112)
- UST - standards for USTs (40 CFR 280)
Last Topic – Universal Waste
Universal Waste Management
40 CFR 273

- Batteries
- Pesticides - not under FIFRA
- Mercury Containing Equipment
- Lights Containing Mercury (LCMs)
Containers must be properly labeled, closed & in good condition.

Proper training applies! 273.16
UNIVERSAL WASTE PER 40 CFR 273.9
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

ACCUmULATION STARTED: 3/14/05

ENGINEERED CONTROLS INTERNATIONAL, INC.
1235 Rock Creek Dairy Road
Milton, GA 30004

UNIVERSAL WASTE / HANDLE WITH CARE!

UNIVERSAL WASTE ACCUMULATION AREA
Things you need to do!

- We look at the pass 5-year compliance history
- Keep your facility neat and orderly!
- Keep your records neat and orderly!
- Location of records must be known by several others.
- Call your inspector when you have a significant change!
- Technical assistance visits are given
NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch

Phil Orozco
Senior Environmental Specialist

Mailing Address: 1646 Mail Service Center
Raleigh, NC 27699-1646

Phone: 919-212-2501
Fax: 919-715-3605
Email: phil.orozco@ncdenr.gov
Facility Inspection:

Paperwork Review

NCDENR
Division of Waste Management
Hazardous Waste Section
Generator Record Review

- Notification / Annual Fees
- Biennial Report
- Hazardous Waste Manifests / LDRs
- Waste Minimization
- Hazardous Waste Contingency Plan
- RCRA Personnel Training Documents
- HW Storage Area Inspection Records
## SQG vs. LQG Paperwork Requirements

<table>
<thead>
<tr>
<th><strong>Small Quantity Generator</strong></th>
<th><strong>Large Quantity Generator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Manifests/LDRs</td>
<td>- Manifests/LDRs</td>
</tr>
<tr>
<td>- Weekly Inspections</td>
<td>- Weekly Inspections</td>
</tr>
<tr>
<td>- Arrangements made with local emergency authorities</td>
<td>- Arrangements made with local emergency authorities</td>
</tr>
<tr>
<td>- Emergency Info posted by phone</td>
<td>- Contingency Plan</td>
</tr>
<tr>
<td>- Employees must be thoroughly familiar...</td>
<td>- Documented RCRA Training</td>
</tr>
</tbody>
</table>
Notification of Hazardous Waste Activity

40 CFR 262.12
EPA Identification Numbers

A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Administrator.
EPA 8700-12 Form

**United States Environmental Protection Agency**

**RCRA SUBTITLE C SITE IDENTIFICATION FORM**

1. **Reason for Submittal**
   - To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location)
   - To provide a Subsequent Notification (to update site identification information for this location)
   - As a component of a First RCRA Hazardous Waste Permit Application
   - As a component of a Revised RCRA Hazardous Waste Permit Application (Amendment #_______)
   - As a component of the Hazardous Waste Report (If marked, see sub-bullet below)
     - Site was a TSD facility and/or generator of >1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or
     - >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent
     - LQG regulations)

2. **Site EPA ID Number**
   - EPA ID Number: [ ] [ ] [ ] [ ] [ ] [ ] [ ]

3. **Site Name**
   - Name:

4. **Site Location Information**
   - Street Address:
     - City, Town, or Village:
     - State:
     - Country:
     - County:
     - Zip Code:

5. **Site Land Type**
   - [ ] Private  [ ] County  [ ] District  [ ] Federal  [ ] Tribal  [ ] Municipal  [ ] State  [ ] Other

6. **NAICS Code(s) for the Site (at least 5-digit codes)**
   - A. [ ] [ ] [ ] [ ]
   - B. [ ] [ ] [ ] [ ]
   - C. [ ] [ ] [ ] [ ]
   - D. [ ] [ ] [ ] [ ]

7. **Site Mailing Address**
   - Street or P.O. Box:
     - City, Town, or Village:
     - State:
     - Country:
     - Zip Code:

8. **Site Contact Person**
   - First Name: [ ] [ ] [ ] [ ] [ ]
   - MI: [ ] [ ] [ ] [ ] [ ]
   - Last: [ ] [ ] [ ] [ ] [ ]
   - Title:
   - Street or P.O. Box:
     - City, Town, or Village:
     - State:
     - Country:
     - Zip Code:
   - Email:
   - Phone: [ ] [ ] [ ] [ ] [ ] [ ] Ext.: [ ] [ ] [ ] [ ] [ ] [ ] Fax: [ ] [ ] [ ] [ ] [ ] [ ]

9. **Legal Owner and Operator of the Site**
   - **A. Name of Site’s Legal Owner:**
     - Owner Type: [ ] Private  [ ] County  [ ] District  [ ] Federal  [ ] Tribal  [ ] Municipal  [ ] State  [ ] Other
     - Street or P.O. Box:
       - City, Town, or Village:
       - State:
       - Country:
       - Zip Code:
   - **Date Became Owner:** [ ] [ ] [ ] [ ] [ ]
   - **B. Name of Site’s Operator:**
     - Operator Type: [ ] Private  [ ] County  [ ] District  [ ] Federal  [ ] Tribal  [ ] Municipal  [ ] State  [ ] Other
     - Street or P.O. Box:
       - City, Town, or Village:
       - State:
       - Country:
       - Zip Code:
   - **Date Became Operator:** [ ] [ ] [ ] [ ] [ ]

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EPA Form 8700-12, 8700-13 A/B, 8700-23 (Revised 11/2009)
10. Type of Regulated Waste Activity (at your site)
Mark “Yes” or “No” for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

<table>
<thead>
<tr>
<th>A. Hazardous Waste Activities; Complete all parts 1-7.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y N ☐ 1. Generator of Hazardous Waste</td>
</tr>
<tr>
<td>If “Yes”, mark only one of the following – a, b, or c.</td>
</tr>
<tr>
<td>☐ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs./mo) or more of hazardous waste.</td>
</tr>
<tr>
<td>☐ b. SQG: Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs./mo) of acute hazardous waste.</td>
</tr>
<tr>
<td>☐ c. CESQG: Generates, in any calendar month, or accumulates at any time, more than 100 kg/mo (220 lbs./mo) of acute hazardous spill cleanup material.</td>
</tr>
<tr>
<td>Y N ☐ If “Yes” above, indicate other generator activities.</td>
</tr>
<tr>
<td>☐ d. Short-Term Generator (generate from a short-term or one-time event and not from on-going processes). If “Yes”, provide an explanation in the Comments section.</td>
</tr>
<tr>
<td>☐ e. United States Importer of Hazardous Waste</td>
</tr>
<tr>
<td>☐ f. Mixed Waste (hazardous and radioactive) Generator</td>
</tr>
</tbody>
</table>

| Y N ☐ 2. Transporter of Hazardous Waste |
| If “Yes”, mark all that apply. |
| ☐ a. Transporter |
| ☐ b. Transfer Facility (at your site) |

| Y N ☐ 3. Treater, Storer, or Disposer of Hazardous Waste Note: A hazardous waste permit is required for these activities. |

| Y N ☐ 4. Recycler of Hazardous Waste |

| Y N ☐ 5. Exempt Boiler and/or Industrial Furnace |
| If “Yes”, mark all that apply. |
| ☐ a. Small Quantity On-site Burner Exemption |
| ☐ b. Smelting, Melting, and Refining Furnace Exemption |

| Y N ☐ 6. Underground Injection Control |

| Y N ☐ 7. Receives Hazardous Waste from Off-site |

<table>
<thead>
<tr>
<th>B. Universal Waste Activities; Complete all parts 1-2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y N ☐ 1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If “Yes”, mark all that apply.</td>
</tr>
<tr>
<td>☐ a. Batteries</td>
</tr>
<tr>
<td>☐ b. Pesticides</td>
</tr>
<tr>
<td>☐ c. Mercury containing equipment</td>
</tr>
<tr>
<td>☐ d. Lamps</td>
</tr>
<tr>
<td>☐ e. Other (specify) _______</td>
</tr>
<tr>
<td>☐ f. Other (specify) _______</td>
</tr>
<tr>
<td>☐ g. Other (specify) _______</td>
</tr>
</tbody>
</table>

| Y N ☐ 2. Destination Facility for Universal Waste |
| Note: A hazardous waste permit may be required for this activity. |

<table>
<thead>
<tr>
<th>C. Used Oil Activities; Complete all parts 1-4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y N ☐ 1. Used Oil Transporter</td>
</tr>
<tr>
<td>If “Yes”, mark all that apply.</td>
</tr>
<tr>
<td>☐ a. Transporter</td>
</tr>
<tr>
<td>☐ b. Transfer Facility (at your site)</td>
</tr>
</tbody>
</table>

| Y N ☐ 2. Used Oil Processor and/or Re-refiner |
| If “Yes”, mark all that apply. |
| ☐ a. Processor |
| ☐ b. Re-refiner |

| Y N ☐ 3. Off-Specification Used Oil Burner |

| Y N ☐ 4. Used Oil Fuel Marketer |
| If “Yes”, mark all that apply. |
| ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner |
| ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications |
New Section for Subpart K Notification

D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

- You must check with your State to determine if you are eligible to manage laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories. See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:
   - a. College or University
   - b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university
   - c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed:


B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed:


EPA Form 8700-12, 8700-13 A/B, 8700-23 (Revised 11/2009)
Describe changes made to form in comments section since NC has not adopted this rule will be “N”.
This form will not be completed since NC has not adopted the rule for Secondary Hazardous Material.
EPA 8700-12 Form

Mail completed form to:

Programs Branch
NCDENR
DWM/HWS
1646 Mail Service Center
Raleigh, NC 27699-1646
Payment of Fees

GS 130A-294.1(f)
Make checks payable to N.C. Hazardous Waste Section, include EPA ID, and invoice number on check. If you are paying by electronic transfer, include the invoice number with your electronic transfer. [G.S. 25-3-506: A $25.00 processing fee will be charged on all returned checks.] (Please return this invoice with your payment)

SMITH, JOHN
HAZARDOUS WASTE GENERATOR
123 GENERATOR PKWY
SOMEWHERE, NC 12345

FACILITY LOCATION ADDRESS:
SMITH, JOHN
OR CURRENT HAZARDOUS WASTE CONTACT
HAZARDOUS WASTE GENERATOR
123 GENERATOR PKWY
SOMEWHERE, NC 12345

<table>
<thead>
<tr>
<th>INVOICE NUMBER</th>
<th>INVOICE DATE</th>
<th>Facility EPA ID #</th>
<th>Amount Due</th>
<th>Due Date</th>
<th>Show Amount Paid Here</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWXXXX</td>
<td>06/27/2010</td>
<td>XXXXXXXXXXXXXXX</td>
<td>$1,014.76</td>
<td>07/28/2010</td>
<td>$</td>
</tr>
</tbody>
</table>

Fee Requirements: Pursuant to North Carolina General Statute 130A-294.1 you are required to pay fee(s) based on your hazardous waste management activities. The fee(s) are used to support government programs that ensure the safe management of hazardous waste. Failure to pay the required hazardous waste fee could result in an enforcement action with a penalty.

B. Explanation of Invoice Amount is Based on Facility's Current Status:

<table>
<thead>
<tr>
<th>FACILITY STATUS</th>
<th>FEE</th>
<th>TONNAGE</th>
<th>AMOUNT DUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LARGE QUANTITY GENERATOR</td>
<td>$1000.00</td>
<td></td>
<td>$1,000.00</td>
</tr>
<tr>
<td>WASTE GENERATED</td>
<td>$0.50/Ton</td>
<td>29.52 TONS</td>
<td>$14.76</td>
</tr>
<tr>
<td>TOTAL AMOUNT DUE</td>
<td></td>
<td></td>
<td>$1,014.76</td>
</tr>
</tbody>
</table>

C. Remit Payment (including this invoice) To:

ATTN: PHILLYSTINE SPINKS
NC HAZARDOUS WASTE SECTION
401 OBERLIN RD, SUITE 150
RALEIGH, NC 27605

D. Hazardous Waste Contacts:

1. Questions about billing process:
   - Phillystine Spinks at (919) 508-8561
   - Ray Strawbridge at (919) 508-8573
   - Helen Cotton at (919) 508-8537

2. Questions about the Regulations and Technical Assistance:
   - Doug Roberts at (919)508-8560 or Doug.Roberts@ncmail.net
   - Lebeed Kady at (919)508-8546 or Lebeed.Kady@ncmail.net
Hazardous Waste Fees

Increase in Hazardous Waste Fees (effective July 1, 2010):

- LQG: $1400
- SQG: $175
- HW Transporters: $840
- Tonnage fee: $0.70
Hazardous Waste Manifests

40 CFR 262 Subpart B
### UNIFORM HAZARDOUS WASTE MANIFEST

#### 3. Generator's Name and Mailing Address
- **Generator's Site Address (if different than mailing address)**

- **Generator's Phone:**

#### 6. transporter 1 Company Name
- **U.S. EPA ID Number**

#### 7. transporter 2 Company Name
- **U.S. EPA ID Number**

#### 9. Designated Facility Name and Site Address
- **U.S. EPA ID Number**

#### Facility's Phone:

#### 19. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))

<table>
<thead>
<tr>
<th>No.</th>
<th>Type</th>
<th>Quantity</th>
<th>Unit Wt./Vol.</th>
<th>Waste Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 14. Specific Handling Instructions and Additional Information

#### GENERATOR/SHIPPER'S CERTIFICATION

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/described, and are in all respects in proper condition for transportation according to applicable international and national governmental regulations. I am the *Person in Charge* of the consignment and I am the person authorized to sign this Manifest. I certify that the waste minimization statement identified in 40 CFR 262.20 as (a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

**Generators/Shipper's Printed/Typed Name**:  
**Signature**:  
**Month Day Year**:  

#### 15. International Shipment
- **Import to U.S.**  
- **Export from U.S.**  

#### 17. transporter Acknowledgment of Receipt of Materials

- **transporter 1 Printed/Typed Name**:  
- **Signature**:  
- **Month Day Year**:  

- **transporter 2 Printed/Typed Name**:  
- **Signature**:  
- **Month Day Year**:  

#### 18. Discrepancy

- **Discrepancy Indication Space**:  

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Type</th>
<th>Reject</th>
<th>Portal Rejection</th>
<th>Full Rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 19. Alternate Facility (or Generator)

- **alternate Facility’s Name**:  
- **U.S. EPA ID Number**:  

#### 20. Signature of Alternate Facility (or Generator)

- **Signature**:  
- **Month Day Year**:  

**Designated Facility Owner or Operator Certification of receipt of hazardous materials covered by the manifest except as noted in Item 16a**

**Printed/Typed Name**:  
**Signature**:  
**Month Day Year**:  

---

*Form Approved. OMB No. 2050-0239*

*DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)*
Item 15: Generator’s / Offerer’s Certification

Generator must read, sign and date the waste minimization certification statement (40 CFR 262.27)
15. **GENERATOR’S/OFFEROR’S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.

I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

<table>
<thead>
<tr>
<th>Generator/Offer's Printed/Typed Name</th>
<th>Signature</th>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

16. **International Shipment**

- Import to U.S. □
- Export from U.S. □
- Port of entry/exit: __________________________
- Transporter signature (for exports only): __________________________
- Date leaving U.S.: ______________

17. **Transporter Acknowledgment of Receipt of Materials**

<table>
<thead>
<tr>
<th>Transporter 1 Printed/Typed Name</th>
<th>Signature</th>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Transporter 2 Printed/Typed Name</th>
<th>Signature</th>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

18. **Discrepancy**

18a. Discrepancy Indication Space

- Quantity □
- Type □
- Residue □
- Partial Rejection □
- Full Rejection □

- Manifest Reference Number: __________________________
- U.S. EPA ID Number: __________________________

18b. Alternate Facility (or Generator)

- Facility's Phone: __________________________

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year |
|--------------------------------------------------|-------|-----|------|

19. **Hazardous Waste Report Management Method Codes** (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. __________________________
2. __________________________
3. __________________________
4. __________________________

20. **Designated Facility Owner or Operator**

Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

<table>
<thead>
<tr>
<th>Printed/Typed Name</th>
<th>Signature</th>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>
Exception Reporting
40 CFR 262.42

If generator does not receive return copy of the manifest within 35 days they must determine the status of the hazardous waste

File Exception Report (to the EPA Regional Administrator) if generator has not received a copy of the manifest within 45 days/60 days of the date the waste was accepted by the initial transporter
Hazardous Waste Manifest

May be the single most important document for a generator!

– Cradle to Grave mandated by Congress
– Manifest documents the cradle to grave
– The manifest clearly documents who, what, when, where & how much has been sent
– Facilities (TSDs) go bankrupt and have to clean up the contamination
NEVER, NEVER THROW AWAY MANIFEST......KEEP THEM FOREVER!!!
Preparedness and Prevention

40 CFR 265 Subpart C
Facilities must be maintained/operated to reduce risk of fire, explosion or releases of hazardous waste.

Certain emergency equipment must be available, tested and maintained as necessary.

Communication and alarm systems accessibility.

Emergency arrangements must be made with local emergency authorities.
Contingency Plans

40 CFR 265 Subpart D
Contingency Plan

40 CFR 265.52

Every LQG must have a Contingency Plan

- It must describe actions people must take in response to fires, explosions, or releases

- The plan must be carried out when there is a release or potential release of hazardous waste

- A copy of the plan must be kept on-site & sent to local emergency agencies (265.53)
Small Quantity Generator Emergency Information
(Post next to telephone as required by 40 CFR 262.34(d)(5)(ii))

Emergency Coordinator(s) with Telephone Numbers:

Locations of:

- Fire Extinguisher(s)
- Spill Control Material
- Fire Alarm(s)

Fire Department Phone Number:

The Emergency Coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

FIRE: Call Fire Department or attempt to extinguish fire using a fire extinguisher.

SPILL: Contain the flow of hazardous waste to the extent possible, and as is practicable, clean up the hazardous waste and any contaminated material or soil.

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, the generator must immediately notify the National Response Center (24-hour hotline) at 1-800-424-8802 and notify the appropriate agency at _______________________.

The information must include the following information:

1) Name, address, and facility USEPA Identification Number;
2) Date, time and type of incident (e.g. spill or fire);
3) Quantity and type of hazardous waste involved in incident;
4) Extent of injuries, if any; and
5) Estimated quantity and disposition of recovered materials, if any.
RCRA Personnel Training

40 CFR 265.16
Facility personnel must successfully complete a program of on-the-job or classroom training.

The program must be directed by a person trained in hazardous waste management.

The training must ensure that personnel are able to respond effectively to emergencies.

Training must be completed within 6 months of employment, change in facility or position.
Personnel Training

- Personnel must receive an annual review of the initial training.
- Must maintain the following documents:
  - job titles, job descriptions, description of the type and amount of training and records to document training has been given to facility personnel.
- Records for current employees must be maintained at the facility until the facility closes.
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.
Biennial Report

40 CFR 262.41
Generator must prepare and submit a single copy of a Biennial Report to the Regional Administrator by March 1 of each even numbered year.

Must keep a copy of each Biennial Report for three years.
Container Inspection Records

40 CFR 265.174
Container Inspection Records

The owner or operator must inspect areas where containers are stored, at least weekly, looking for:

- Leaks
- Deterioration caused by corrosion or other factors
Container Inspection Records

15A NCAC 13A .0107(d) requires that the owner or operator keep records and results of weekly inspections for at least 3 years.
<table>
<thead>
<tr>
<th>Weekly Hazardous Waste Container Inspection Log</th>
</tr>
</thead>
</table>
| Month: ___________________________ | Year: __________________ | Signature: ___________________

<table>
<thead>
<tr>
<th>Inspection Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drum Integrity (no leaks, etc.)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drums Closed (bungs, etc.)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drums Labeled</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence of Spills</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accumulation Start Date</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks, Problems, Corrections, etc.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

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</tr>
</thead>
<tbody>
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</tbody>
</table>
Things you need to do!

- Keep your records neat and orderly

- Ensure records are available for review
  - Location of records must be known by several people

- Call your inspector for a technical assistance visit
NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch

Bobby Nelms
Environmental Senior Specialist

Mailing Address: 401 Oberlin Road, Suite 150
Raleigh, NC 27605

Phone: 910-602-3329
Fax: 910-350-2004
Email: bobby.nelms@ncdenr.gov
Waste Minimization = $$$
262.27 Waste minimization certification.

A generator who initiates a shipment of hazardous waste **must certify** to one of the following statements in Item 15 of the uniform hazardous waste manifest:

(a) “I am a large quantity generator. **I have a program in place to reduce the volume and toxicity** of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment;” or
Waste Minimization SQG

40 CFR 262.27(b) “I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.”
Waste Minimization and the Compliance Inspection

- Have a written Waste Minimization Plan
- Facility personnel should be able to describe their plan and their waste minimization objectives
- Have at a minimum a written policy statement
SOURCE REDUCTION

ways you can reduce your waste output……

- Personnel training
- General housekeeping
- Inventory control
- Equipment maintenance
- Use of less hazardous (or non-haz) products
- Improved parts inspection
- Process changes
WEB BASED INFO SOURCES

- NC Hazardous Waste Section
  http://www.wastenotnc.org/

- Pollution Prevention and Environmental Assistance
  http://www.p2pays.org

- Waste Trader
  http://ncwastetrader.org

- National Partnership for Environmental Priorities NPEP
  http://www.epa.gov/epaoswer/hazwaste/minimize/partnership.htm
Aerosol Cans

Hazardous Waste Determination

– The (unpunctured) can, D003?
– Liquid product inside the can, D001, D002, D007
– Propellant
Aerosol Cans

D003

* 1987 EPA determined that empty aerosol cans could be reactive. An empty can could detonate or explode when subjected to a strong initiation source.
Aerosol Cans

To date no agency determination on which aerosol product are REACTIVE, thus:

* 262.11 – Generator determination
Punctured Aerosol cans Not Regulated When Recycled

A punctured can that does not contain a “significant” amt. of liquid meets the definition of scrap metal (40 CFR 261.1(c)(6))

If recycled as scrap metal, then it will be exempt.

If exempt, then no other characterization necessary.
Aerosol Cans

NC – Puncturing a can is considered “another means of emptying a container” Not Treatment.
Aerosol Can Puncturing
Drum Container Management

- Generating a new hazardous waste in the drum.
- Keep it closed unless adding or removing
- Labels
- Dates – storage vs. satellite accumulation
Distillation
Solvent Distillation Units

40 CFR 261.5 - When making the quantity determinations of this part and 40 CFR part 262, the generator must include all hazardous waste that it generates, except hazardous waste that:  

Solvent Distillation Units

Is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under 40 CFR 261.6
Nevada / MAACO Study


Cost savings & list of manufacturers
Parts Washers
Parts Washers

- Safety Kleen – 150 solvent
- Crystal Clean – non-regulated solvent & reuse program
- Zep – non-regulated water base products
Parts Washers

- Waste determination is at the point of generation
- Non regulated solvent can pick up RCRA contaminates
- Waste analysis
Parts Washers & Distillation

- Waste is generated when the parts washer is emptied
- 40 CFR 261.5 also can apply
  - Parts washer waste goes directly into the distill, do not have to count it.
E-Waste
What is E-Waste

E-Waste is a term that has been given to electronic wastes by the solid waste community as well as the public.

This generic name encompasses the many types of electronic devices that end up in the municipal solid waste stream.

E-Waste contains chemicals which, in specific scenarios may leach into the environment.
Examples of E-Waste?

- Computers
- Computer Mouse
- Equipment
- Keyboards
- Copiers
- Pagers
- Personal Data
  Assistants
- Video Cameras
- LCD Projectors
- Microphones
- VCR’s
- FAX Machines
- Stereos
- Radios
- Scanners
- Microfiche
  Filming & Reader
  Equipment
- Telephones
- Cell Phones
Printed circuit boards and other electronic components contain lead, chromium, silver and may include lithium, nickel/cadmium. As long as the scrap metal will be recycled, it is exempt from RCRA hazardous waste requirements per 40 CFR 261.6(a)(3)(ii)!
We Have Come a Long Way
Lamps
Universal waste must be managed to prevent releases by keeping containers closed and using structurally sound and compatible containers.
Lamp Crushers
Lamp Crushers

- ~ 500 4 ft. fluorescent light tubes in a 55 gal. drum
- NC – cannot treat Universal Waste
- Must manage lights as Hazardous Waste
- 262.11 – waste determination
If you crush your UW-Lamps, are they still UW - NO!
Can be worker exposure issues especially in the earlier models.

What about Green Tips?

- Green tips still contain mercury
- If you claim non-hazardous, have waste analysis, (testing, analysis from manufacturer), etc.
New CRT Exclusions

- CRTs are NOT Universal Waste!
CRT Exclusions

Used intact CRTs are NOT solid wastes if recycled.
CRT’s are Solid Waste

If they are:

- Disposed
- Speculatively accumulated (as defined in 261.1(c)(8)) by CRT collectors or glass processors
- Exported for recycling and do not meet the requirements of 261.40
Can NOT Speculatively Accumulate
Do not store outside
EPA ID #’s & Contiguous Property

- ID # issued is site specific
- Satellite campus requires separate ID #
- Cannot transport from satellite campus to main campus without transporter ID # if property is not contiguous AND main campus is not TSD!
Questions?
NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch

Dick Denton
Environmental Senior Specialist

Mailing Address: 401 Oberlin Road, Suite 150
Raleigh, NC 27605

Phone: 252-946-5011
Fax: 252-946-5011
Email: william.denton@ncdenr.gov
Ten Hazardous Waste Violations & Enforcement

NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch
#10

Hazardous Waste not in Containers
#9

Emergency Arrangements for Small Quantity Generators
Emergency Coordinator(s) with Telephone Numbers:
__________________________________________
__________________________________________

Locations of:
Fire Extinguisher(s) ______________________________________________________________________
_____________________________________________________________________________________

Spill Control Material ______________________________________________________________________
_____________________________________________________________________________________

Fire Alarm(s) _____________________________________________________________________________
_____________________________________________________________________________________

Fire Department Phone Number: _______________________________________________________________________

The Emergency Coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

FIRE: Call Fire Department or attempt to extinguish fire using a fire extinguisher.

SPILL: Contain the flow of hazardous waste to the extent possible, and as is practicable, clean up the hazardous waste and any contaminated material or soil.

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, the generator must immediately notify the National Response Center (24-hour hotline) at 1-800-424-8802 and notify the appropriate agency at ________________.

The information must include the following information:
1) Name, address, and facility USEPA Identification Number;
2) Date, time and type of incident (e.g. spill or fire);
3) Quantity and type of hazardous waste involved in incident;
4) Extent of injuries, if any; and
5) Estimated quantity and disposition of recovered materials, if any.
#8

Documentation
Documentation

- **LQG:**
  - Documentation of annual RCRA training
  - LQG contingency plan submittal

- **LQG and SQG:**
  - Arrangements with local emergency authorities
  - Weekly inspections of hazardous waste storage area(s)
#7

Used Oil
#6

Waste Determination
#5

Aisle Space
#4

Time Frames
Time Frames

- **Weekly inspections = every 7 days**
- **Annual RCRA training = 365 days**
- **Manifests back to generator**
  - **LQG:** after 35 days contact transporter/TSD
    after 45 days file exception report
  - **SQG:** after 60 days file “exception report”
#3

Used Lamps
#2

Labeling
Open Containers
Why is Compliance is Important?

- Hazardous Waste Penalty Amounts:
  - $32,500 per violation per day

- Escalating Enforcement Action

- EPA & State Enforcement Initiative
EPA’s Enforcement Initiative

Catherine McCabe, acting EPA enforcement head, said that while the agency acknowledges companies are struggling in the bad economy, enforcement officials would be in danger of creating an uneven playing field if EPA or some states were to grant flexibility with penalties or other enforcement actions, adding, “In the end, it's our job to enforce the law.”
EPA Initiatives FY10

- Colleges/Universities
- Never Inspected Large Quantity Generators
- Non-RCRA Surface Impoundments
- Subpart AA/BB/CC (Air Emissions from HW)
- Mineral Processing
- Prisons
- Hospitals
State Sectors FY11

- Never Inspected SQGs and LQGs
- Hazardous Waste Transporters
- Hazardous Waste Transfer Facilities
- Prior NOV & Compliance Order Facilities
Hazardous Waste Notices of Violation

Fiscal year – Oct. through Sept.
Hazardous Waste Compliance Orders

CO's
Sorry, we're closed.
Self - Confessor Policy

- A Department wide enforcement penalty policy for self reported violations

- The Department will not seek administrative or civil penalties beyond the economic benefit the company received if the company meets all five conditions set forth in the policy
Conditions for Penalty Waiver

Condition 1 - The deficiency was not due to a lack of good faith efforts to understand or comply with applicable environmental, health, or safety laws, or a lack or good faith efforts to correct past deficiencies.

Condition 2 - The deficiency was not done knowingly and willingly.

Condition 3 - The deficiency did not cause a significant harm to the environment or risk to public health.
Conditions for Penalty Waiver

- **Condition 4** - The regulated person or entity voluntarily and promptly notifies the Department of the deficiency before the Department learns of it and completely discloses the deficiency to the Department in writing.

- **Condition 5** - The regulated person or entity takes immediate and effective action to cease or remediate any continuing violation or deficiency, or where appropriate, agrees in writing with the Department to take those steps needed to address the deficiency.
Self Confessor Policy (Cont’d)

In all cases, the regulated person or entity seeking penalty waiver or reduction must provide sufficient documentation to eligibility for the application of this policy, and must bear the burden of persuasion that waiver or reduction is appropriate and that there was no economic benefit from the deficiency.
NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch

Jenny Patterson, CHMM
Eastern Region Compliance Supervisor

Mailing Address: P.O. Box 11213
Winston-Salem, NC 27116

Phone: 336-767-0031
Fax: 336-767-0031
Email: jenny.patterson@ncdenr.gov
Academic Laboratories Rule
Subpart K

Original Presentation created by
Environmental Protection Agency -
Office of Resource Conservation and Recovery (ORCR)
Adapted by NCDENR, Division of Waste Management
Hazardous Waste Section
What will be covered?

- Basics of the Labs Rule
- Rationale for the Labs Rule
- Main Provisions of the Labs Rule
Hazardous Waste at Academic Laboratories

- New Rule effective December 31, 2008
  - North Carolina fully adopted rule April 1, 2010

- Notification required using EPA 8700-12 form

- Rules found at 40 CFR 262 Subpart K
Hazardous Waste at Academic Laboratories

Applicable to eligible academic laboratories that generate hazardous waste

Who is “eligible”?  
- Colleges & universities  
- Non-profit research institutes and teaching hospitals owned by or with formal written affiliation agreement with a college or university
Hazardous Waste at Academic Laboratories

Not applicable to:

- Commercial research & development labs
- Government facilities
- Non-teaching hospitals
- Non-profit research facilities and teaching hospitals not owned by nor have formal written affiliation with a college or university
- High School Laboratories
Hazardous Waste at Academic Laboratories

- Provides flexibility to make hazardous waste determinations:
  - In the laboratory
  - At an on-site central accumulation area
  - At an on-site treatment, storage, or disposal facility

- Provides incentives to clean-out old and expired chemicals that may pose unnecessary risk
Hazardous Waste at Academic Laboratories

- Requires development of Laboratory Management Plan (LMP)
  - safer laboratory practices
  - increased awareness of hazardous waste management

- Eligible academic entities may also choose to remain subject to the pre-existing hazardous waste generator requirements
Hazardous Waste at Academic Laboratories

For more information:

http://epa.gov/osw/hazard/generation/labwaste/
Rationale for the Academic Labs Rule

Teaching & Research Labs vs. Industry Labs:

- Hazardous waste generation pattern is different
  - Lots of different wastes streams that vary over time
  - Small amounts of each hazardous waste
  - Many individuals generating hazardous waste in many labs
- Often, Students, generate the hazardous waste
  - High turnover (thus difficult to train)
  - Lack the expertise & accountability of a professional workforce
Rationale for the Academic Labs Rule

Hazardous waste generation pattern

+ Student presence

Very difficult to make accurate HW determinations at the point of generation
Rationale for the Academic Labs Rule

Solution:
- Require trained professionals to make the HW determination instead of students
- Allow HW determination to be made after initial point of generation
- Any material in the laboratory that has the potential to be HW is managed as HW in the laboratory
<table>
<thead>
<tr>
<th>Satellite Accumulation Area</th>
<th>Subpart K</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applies to SQGs and LQGs</strong></td>
<td><strong>Applies to CESQGs, SQGs and LQGs</strong></td>
</tr>
<tr>
<td><strong>Applies to any SQG or LQG that chooses to establish an SAA “at or near the point of generation”</strong></td>
<td><strong>Applies only to labs at an “eligible academic entity” that opts into Subpart K:</strong></td>
</tr>
<tr>
<td></td>
<td>- College or University (C/U)</td>
</tr>
<tr>
<td></td>
<td>- Teaching Hospital that is owned by or has a formal written affiliation agreement with a C/U</td>
</tr>
<tr>
<td></td>
<td>- Non-profit Research Institute that is owned by or has a formal written affiliation agreement with a C/U</td>
</tr>
</tbody>
</table>
## Terminology of the Two Regulatory Provisions

<table>
<thead>
<tr>
<th>Satellite Accumulation Area</th>
<th>Subpart K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Waste (HW)</td>
<td>“Unwanted Material” OR other “equally effective term” that you choose</td>
</tr>
<tr>
<td>Acute Hazardous Waste</td>
<td>Reactive Acutely Hazardous Unwanted Material</td>
</tr>
<tr>
<td>(124 P-listed chemicals with 1qt threshold in SAA)</td>
<td>(6 P-listed chemicals with 1 qt threshold in lab)</td>
</tr>
<tr>
<td>&lt; 90/180 day generator accumulation area</td>
<td>Central accumulation area (CAA)</td>
</tr>
</tbody>
</table>
## What is a Laboratory*?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching &amp; research labs</td>
<td>✓</td>
</tr>
<tr>
<td>Art studios</td>
<td>✓</td>
</tr>
<tr>
<td>Photo labs</td>
<td>✓</td>
</tr>
<tr>
<td>Field labs</td>
<td>✓</td>
</tr>
<tr>
<td>Diagnostic labs in teaching hospitals</td>
<td>✓</td>
</tr>
<tr>
<td>Areas that support labs (e.g., chemical stockrooms &amp; prep rooms)</td>
<td>✓</td>
</tr>
<tr>
<td>Chemical stockrooms that do not support labs</td>
<td>✓</td>
</tr>
<tr>
<td>Vehicle maintenance areas</td>
<td>✓</td>
</tr>
<tr>
<td>Machine shops</td>
<td>✓</td>
</tr>
<tr>
<td>Print shops</td>
<td>✓</td>
</tr>
<tr>
<td>Commercial photo processing</td>
<td>✓</td>
</tr>
<tr>
<td>Power plants</td>
<td>✓</td>
</tr>
</tbody>
</table>

* Laboratories must be OWNED by the eligible academic entity
### Satellite Accumulation Area

SQGs and LQGs must notify that they are generating HW but do not have to specify that they are accumulating HW in an SAA.

### Subpart K

Eligible Academic Entity must notify its authorized state that it is opting into Subpart K.

- Use the Site ID Form (Form 8700-12) to notify.
- Site ID Form has been modified to include new box for Subpart K.
- Can withdraw from Subpart K using the same form.

All laboratories at an EPA ID # (or site) must opt in together.
## Container Labeling

### Satellite Accumulation Area
Containers of HW must be labeled with the words
- “Hazardous Waste” OR
- “Other words that identify the contents of the container”

### Subpart K
Containers of Unwanted Materials must be labeled with:
- The words “Unwanted Materials” or another “equally effective term” used consistently and
- Information to alert emergency responders to the contents of the container (e.g., name of chemical) and
- Information sufficient to make a hazardous waste determination and
- Accumulation start date
**Container Management**

**Satellite Accumulation Area**

1. Containers must be in good condition
2. Contents must be compatible with container
3. Containers must be kept closed except:
   - When adding or removing HW

**Subpart K**

1. Containers must be in good condition
2. Contents must be compatible with container
3. Containers must be kept closed except:
   - When adding, removing, or bulking unwanted materials
   - Working container* may be open until end of procedure or shift, whichever is first
   - When venting of a container is necessary
     - For operation of equipment such as HPLCs
     - To avoid pressure build-up

* Working container ≤ 2 gallons
## Training

<table>
<thead>
<tr>
<th>Satellite Accumulation Area</th>
<th>Subpart K</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No training of SAA personnel is required</strong></td>
<td><strong>Training that is “commensurate with duties” is required for all laboratory personnel which includes:</strong></td>
</tr>
<tr>
<td></td>
<td>– Laboratory workers, and</td>
</tr>
<tr>
<td></td>
<td>– Students</td>
</tr>
</tbody>
</table>

### Training required for personnel outside SAA

- Must have standard RCRA generator training, pursuant to their generator status
- No CAA at CESQGs, so no training required

### Training required for personnel outside lab (trained professionals)

- Must have standard RCRA generator training, pursuant to their generator status
- Trained professional at CESQGs must train to SQG standards
Removing HW from the Laboratory

**Satellite Accumulation Area**

Volume-driven removals of HW from SAA:
- 3 days to remove the excess of 55 gallons of hazardous waste, if 55 gallons of HW (or 1 quart acute HW) is exceeded

**Subpart K**

Time-driven removals of unwanted materials from laboratory:
- All containers must be removed from the lab at a regular interval not to exceed 6 months, or
- Rolling 6 months: each container must be removed within 6 months from the container’s accumulation start date

AND

Volume-driven removals of unwanted materials from lab:
- 10 days to remove unwanted materials if 55 gallons (or 1 quart of acute reactives) is exceeded
Acutes in the Laboratory

**Satellite Accumulation Area**

*In the SAA:*
Acute Hazardous Waste
- 124 P-listed chemicals (unused commercial chemical products)
- If 1 quart is exceeded in SAA, must be removed within 3 days

**Subpart K**

*In the lab:*
Reactive Acutely Hazardous Unwanted Material
- 6 reactive P-listed chemicals (unused commercial chemical products)
- If 1 quart is exceeded in lab, must be removed within 10 calendar days

- P006 – Aluminum phosphide
- P009 – Ammonium picrate
- P065 – Mercury fulminate
- P081 - Nitroglycerine
- P112 - Tetrinitromethane
- P122 – Zinc phosphide (> 10%)

**Generator status for facility:** all 124 P-listed chemicals have 1 kg/month threshold that triggers LQG status
Hazardous Waste Determination

**Satellite Accumulation Area**

Generator must make HW determination at the point of generation
- The time and place HW is first generated

**Subpart K**

Eligible Academic Entity can choose when and where to make HW determination:
- In the laboratory (but after the time of initial HW generation), or
- Within 4 calendar days of arriving at an on-site:
  - Central accumulation area (CAA = 90/180/270 day area), or
  - Interim status or permitted treatment, storage, or disposal facility (TSDF)

Individuals generating the HW generally make the initial HW determination

Individuals making the HW determination must be “trained professionals”
HW Determination in a CAA

Subpart K

- Must date the container when it arrives at CAA, which starts the
  - 4-day clock for HW determination
  - 90- or 180-day clock for accumulation time

- Must determine whether the unwanted material is a HW within 4 days of arriving at the on-site CAA

- If it’s a HW, must add the words “hazardous waste”
  - Must go on the “affixed or attached to” container label

- Can delay adding the HW code until immediately prior to off-site shipment
  - Can go on “affixed or attached to” label or “associated with” label
Hazardous Waste Determination

The point of generation remains the same, only the hazardous waste determination is delayed.

All unwanted materials are managed as **hazardous waste** in the laboratory until the hazardous waste determination is made.

Unwanted materials in the laboratory will likely include materials that turn out to be non-hazardous wastes once the hazardous waste determination is made.

Subpart K
On-site Consolidation
(Transferring Containers Outside the SAA/Lab)

**Satellite Accumulation Area**
- Containers **MAY NOT** be transferred between SAAs, therefore on-site consolidation **ONLY** may occur in a
  - central accumulation area

**Subpart K**
- Containers **MAY** be transferred between laboratories, therefore on-site consolidation **MAY** occur in a
  - laboratory or
  - in a central accumulation area
- **Consolidation laboratory**
  - Same time limits on how long containers can remain in the laboratory (i.e., 6 months)
  - Same volume limits on how much unwanted material is allowed in the laboratory
  - Only trained professionals can transfer the containers outside the lab
## Off-site Consolidation

<table>
<thead>
<tr>
<th>Satellite Accumulation Area</th>
<th>Subpart K</th>
</tr>
</thead>
<tbody>
<tr>
<td>No provision for a generator to consolidate HW at an off-site location, unless the receiving facility is:</td>
<td>No provision for a generator to consolidate HW at an off-site location, unless the receiving facility is:</td>
</tr>
<tr>
<td>- An interim status or permitted TSDF or</td>
<td>- An interim status or permitted TSDF or</td>
</tr>
<tr>
<td>- A transfer facility</td>
<td>- A transfer facility</td>
</tr>
</tbody>
</table>
Laboratory Clean-Out Incentives

Satellite Accumulation Area
No incentives to conduct laboratory clean-outs are provided:
- If exceed 55 gallons of HW, must remove the excess within 3 days
- All HW generated in a laboratory clean-out must be counted toward generator status
- Laboratory clean-outs will often increase generator status (e.g. from SQG to LQG)

Subpart K
Regulatory incentives to conduct laboratory clean-out are provided:
- Laboratory clean-out waste has no volume limit--must remove all laboratory clean-out waste after 30 days
- HW generated during a laboratory clean-out that is unused commercial chemical product does not have to be counted toward generator status
- Incentives can be used one time per laboratory per 12 months
Laboratory Clean-Out Details

- Laboratory clean-outs are not mandatory

- 30-day clock for clean-out begins when you start sorting through cabinets and taking inventory

- At the end of 30 days, all laboratory clean-out unwanted materials must be removed from the laboratory and
  - Sent to on-site CAA or on-site TSDF, or
  - Sent off-site for disposal

Subpart K
**Laboratory Clean-Out Details**

**Subpart K**

- **On-site Management** of laboratory clean-out waste
  - Unused commercial chemical products are not counted toward generator status
  - CESQGs and SQGs will not have increased regulatory burden because of a laboratory clean-out

- **Off-site Management** of laboratory clean-out waste
  - If weight of laboratory clean-out waste makes the eligible academic entity exceed the CESQG monthly limits, then all HW must be managed and disposed of as HW when sent **off-site**
    - >1 kg of acute HW or
    - >100 kg of HW

- **Manifesting** laboratory clean-out waste
  - Use Box 14 on the manifest titled, “Special Handling Instructions and Additional Information”
  - Indicate that a portion or all the waste on the manifest is from a Subpart K laboratory clean-out
Laboratory Clean-out Example

Subpart K

Squeaky Clean University (SCU) is a normally a CESQG

Squeaky Clean University conducts a laboratory clean-out:

- Generates 5 kg P-listed acute HW (unused commercial chemical products)
- This amount is >1 kg of acute HW/month weight limit for CESQGs
- Normally, SCU would become an LQG for the month
- But, SCU does not count the 5 kg of unused commercial chemical product towards generator status
- SCU remains a CESQG for purposes of on-site accumulation
  - SCU does not have to do Biennial Reporting, contingency plans, training
- For off-site management, since the CESQG limits have been exceeded, all HW must be managed as HW when sent off-site (e.g., manifested, LDRs, TSDF, etc.)
Laboratory Management Plan (LMP)

Satellite Accumulation Area

LMP is not required

Subpart K

Two-part LMP is required

1. Contents of Part I are enforceable
   - 2 elements
     - Identify options for container labeling
     - Identify option for regular removal of unwanted material from laboratories

2. Contents of Part II are not enforceable
   - 7 elements
     - Best intended practices for laboratory HW management
Laboratory Management Plan (LMP)

Contents of Part I of LMP are **Enforceable**
- you can be held in violation if your practices vary from the LMP procedures you develop

Contents of Part II of LMP are **Not Enforceable**
- you can NOT be held in violation if your practices vary from the LMP procedures you develop

You can be held in violation if all 9 required elements are not reasonably addressed in your LMP
Laboratory Management Plan (LMP)

- One LMP covers all laboratories at an EPA ID # (or site) that opts in

- If you have multiple EPA ID #’s (or sites) that opt in
  - One LMP can cover multiple sites

- LMP can be incorporated into another plan
  - e.g., OSHA’s Chemical Hygiene Plan

- LMP includes procedures many of you have already developed
Recordkeeping

Subpart K

- Laboratory clean-outs must be documented
  - Identify laboratory cleaned out
  - Start and end date of laboratory clean-out
  - Volume of laboratory clean-out hazardous waste

- Training records must be kept by LQGs for
  - Laboratory workers (but not for students)
  - Trained professionals (as required by existing generator regulations)
Questions???
NCDENR - Division of Waste Management
Hazardous Waste Section
Compliance Branch

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Eastern Region Compliance Supervisor
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Raleigh, NC 27605
Phone: 336-767-0031
Fax: 336-767-0031
Email: jenny.patterson@ncdenr.gov