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| Fayetteville State University  Laboratory Management Plan  *Hazardous Waste Compliance* |
|  |
| Environmental Health & Safety |

**A logo for a university

AI-generated content may be incorrect.**

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| J. Daniel Core & Andrea Cortez  4-1-2024 |

A building with a lawn in front of it

AI-generated content may be incorrect.

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# **Purpose & Scope**

This Laboratory Management Plan (LMP) establishes policies, procedures, and responsibilities for the **safe management of hazardous waste** generated in **academic laboratories** at Fayetteville State University (FSU), in compliance with **40 CFR Part 262 Subpart K**.

This plan applies to all:

* Teaching laboratories
* Research laboratories
* Associated stockrooms and prep areas
* Teaching hospitals and affiliated non-profit research institutes (if applicable)

# **Definitions**

Refer to 40 CFR §262.200 for full regulatory definitions. Key terms include:

* **Trained Professional** – Individual with RCRA hazardous waste training responsible for waste determinations.
* **Hazardous Waste** – As defined by 40 CFR §261.3, including listed and characteristic waste.
* **Laboratory User** – Any person who generates or manages waste in a laboratory setting, including students, faculty, and research staff.
* **Laboratory** – A location where hazardous chemicals are used on a laboratory scale (e.g., teaching or research spaces).

1. **Roles & Responsibilities**

## **Chemical Hygiene Officer (CHO):**

* Serve as the primary hazardous waste authority
* Designate and train “Trained Professionals”
* Make waste determinations
* Maintain records and manage regulatory compliance
* Perform routine lab audits and inspections
* Coordinate waste pickups and manifesting
* Perform weekly inspections (looking for leaks and corrosion) of hazardous waste container in less than 180 day in Central Accumulation Area (CAA) and maintain documentation.
  1. **Trained Professionals:**
* Perform RCRA-compliant waste determinations
* Review labeling and accumulation practices
* Approve requests for unknown or complex waste characterization
* Provide guidance on segregation and storage.
* Train students and researcher under their supervision **(Appendix D- Train Roster Log)**
  1. **Lab managers / Principal Investigators**
* Perform weekly inspections of hazardous waste containers. (Refer to Chemical Hygiene Plan – Appendix 3. Laboratory Inspection Guidelines and Form)
* Ensures all staff, faculty, principal investigators, students who generated hazardous waste has completed the Hazardous Waste Training.
  1. **Laboratory Users:**
* Comply with storage and labeling policies
* Complete assigned hazardous waste and lab safety training
* Maintain good housekeeping
* Identify chemicals no longer needed and submit them for removal
* Do **not** dispose of chemicals via drains, trash, or evaporation
  1. **Environmental Health & Safety (EHS):**
* Ensure compliance with CHP
* Ensure EPA, RCRA, and regulatory agency compliance within labs
* Conduct safety assessments of laboratory settings
* Coordinates with CHO to ensure violations in LMP are corrected

1. **Hazardous Waste Identification and Determination**
   1. **Process Overview:**
2. Laboratory users identify material no longer needed.
3. Label the container as **“Non-Waste – Pending Review”** with chemical name and date.
4. Submit the item for waste review through the waste tracking system.
5. A Trained Professional will:
   * Evaluate waste characteristics (ignitability, reactivity, corrosivity, toxicity)
   * Classify waste under RCRA regulations
   * Issue a formal **Hazardous Waste label** (if applicable)
   * Assign a **hazardous waste profile** and ensure compliance
6. **Labeling Requirements** (Appendix 1. Waste Label Template)
   1. **Pending Review (Non-Waste) Containers:**

* “Non-Waste – Pending Review”
* Full chemical names (no formulas or abbreviations)
* Date container was identified
  1. **Hazardous Waste Containers:**
* “Hazardous Waste”
* Contents: Specific chemical names
* Accumulation start date (date first drop added)
* Associated hazards (e.g., flammable, corrosive, toxic) Picture 1. NFPA 704 Hazard Diamond.
* Generator name and lab location

**A diamond shaped sign with different colors

AI-generated content may be incorrect.**Picture 1. NFPA 704 Hazard Diamond

1. **Container Management**

* Keep containers **closed at all times**, except when adding/removing material
* Use containers compatible with the waste type
* No overfilling – maintain **10% headspace**
* Secondary containment required for liquids
* Maintain clean and readable labels
* No leaking or deteriorated containers allowed

1. **Segregation of Incompatibles**

Chemicals and waste must be separated by hazard class:

* Acids vs. bases
* Oxidizers vs. organics
* Flammables vs. oxidizers
* Reactive materials stored under inert conditions (as needed)

Use compatibility charts **(Appendix 2. Chemical Segregation Chart)** e.g., NFPA, DOT and EHS guidance.

1. **Accumulation Time Limits**

* **All hazardous waste must be removed from labs at least once every 180 days as a small quantity generator.**
* Waste may be removed earlier depending on volume, hazard, or program needs
* Accumulation start dates must be monitored via CHO database

1. **Waste Collection and Removal**

* Laboratories must submit pickup requests **(Appendix 3. Waste Pick Up Request Form)** to CHO.
* CHO schedules waste removal and performs a final inspection
* Waste is transferred to a **Central Accumulation Area (CAA)** within 180 days of start date of accumulation.
* All manifests, shipping papers, and waste profiles are maintained in accordance with **40 CFR Part 262 Subpart K and 40 CFR 262.40**

1. **Unknown Waste Identification Procedures**

If a chemical or waste is unknown:

* Label as: “**Hazardous Waste – Unknown**”
* Submit for review through CHO
* CHO may:
  + Conduct in-house screening (pH, oxidizer/peroxide strips, water solubility)
  + Coordinate external lab analysis
  + Consult manufacturer or MSDS archives

1. **Training**
   1. **Laboratory Users:**

* Must complete Hazardous Waste & Lab Safety Training before working in labs
* Refresher training is required **annually.**

**Training includes:**

* + Waste handling procedures
  + Spill response
  + Labeling requirements
  + Emergency contact procedures

## **Trained Professionals:**

* Must complete RCRA training per **40 CFR 265.16**
* Documented **annually (Appendix D. Training Roster Log)**
* Includes chemical compatibility, DOT shipping, contingency plans, and waste profiling

1. **Emergency Response Procedures**

* Labs must have emergency spill kits and eyewash stations (Refer to Chemical Spill Prevention and Response Plan)
* SDS and evacuation routes posted
* Larger spills or involving unknowns, reactive, or P-list chemicals must be reported to CHO/EHS (Refer toChemical Spill Prevention and Response Plan)
* In case of fire, explosion, or serious exposure: CALL 911 -1911 and notify CHO/EHS

1. **Recordkeeping and Documentation**

CHO will maintain:

* Waste tracking logs and pickup records
* Waste determinations and profiles
* Annual training records
* Waste manifest copies and Land Disposal Restrictions (LDRs)
* Laboratory inspections and compliance reports

Note: Hazardous waste must be manifested properly (complete with LDRs and signed, returned copy from designated disposal facility must be retained on site for **at least 3 years**, as required by EPA. Exception reports on file if signed manifest is not returned from disposal facility within 60 days of receipt from transporter.

1. **Laboratory Cleanouts**

Planned cleanouts must be coordinated with CHO:

* Schedule at least **two weeks in advance**
* Identify and remove all hazardous materials
* Dispose of obsolete chemicals
* Update chemical inventories and labeling

Large-scale cleanouts (renovation, PI departure) may require additional waste services and contractor involvement.

1. **Plan Review and Updates**

* This LMP is reviewed **annually** by the Environmental Health & Safety Office
* Updates are made to reflect changes in:
  + EPA/OSHA regulations
  + University operations
  + Campus construction or personnel shifts

1. **Appendices**
   1. **Appendix 1. Waste Label Template**

**⚠️ HAZARDOUS WASTE LABEL TEMPLATE**

⚠️ HAZARDOUS WASTE ⚠️

**Contents:**

[Full Chemical Names – No abbreviations]

[List each component and % concentration]

**Physical State:** [Liquid / Solid / Sludge / Other]

**Hazards:** [Flammable / Corrosive / Reactive / Toxic / Oxidizer]

**Date Waste First Added:** [MM/DD/YYYY]

**Generator:** [Name of Lab PI or Staff]

**Building/Room #:** [Location where waste is generated]

**Emergency Contact**: [Name and Phone #]

***DO NOT MIX INCOMPATIBLE CHEMICALS. KEEP CLOSED WHEN NOT IN USE.***

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* 1. **Appendix 2. Chemical Segregation Chart**

| **Group** | **Examples** | **Keep Separate From** |
| --- | --- | --- |
| **Acids (Inorganic)** | Hydrochloric, Sulfuric, Nitric | Bases, cyanides, sulfides |
| **Bases** | Sodium hydroxide, Potassium hydroxide | Acids |
| **Flammables** | Ethanol, Acetone, Methanol, Hexane | Oxidizers, acids |
| **Oxidizers** | Hydrogen peroxide, Nitric acid, Bleach | Flammables, organics, reducing agents |
| **Toxics** | Arsenic compounds, cyanides, pesticides | Acids (some release toxic gases) |
| **Reactive Materials** | Sodium metal, Peroxides, Picric acid | Water, air, flammables |
| **Compressed Gases** | CO₂, O₂, Ethylene, Hydrogen chloride | Store upright, secured, by compatibility |
| **Metals & Salts** | Lead nitrate, Chromium salts | Keep labeled and segregated by hazard class |

**Storage Tips:**

* Use secondary containment
* Segregate based on chemical compatibility, not alphabetically
* Label storage cabinets clearly (e.g., Acids, Flammables)
  1. **Appendix 3. Waste Pickup Request Form**

**Hazardous Waste Pickup Request**

Fayetteville State University  
1200 Murchison Rd, Fayetteville, North Carolina

**Date Submitted:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Requested By:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Email / Phone:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Department:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Building/Room #:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Container #** | **Chemical Name(s)** | **Physical State** | **Volume** | **Accumulation Start Date** | **Hazards** |
| 1 |  | [L/S] |  |  |  |
| 2 |  | [L/S] |  |  |  |
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**Notes:**

* Submit completed forms to: irittenhouse@uncfsu.edu
* Attach photos of containers if possible
* CHO will follow up within 48 hours to coordinate pickup
  1. **Appendix 4. Training Roster Log**

**Training Roster Log**

Fayetteville State University  
1200 Murchison Rd, Fayetteville, North Carolina

| **Trainee**  **Name** | **Department** | **Lab**  **Number** | **Date of**  **Training** | **Trainer**  **Name** | **CHP** | **Waste**  **Mgmt** | **Labeling** | **Spill**  **Response** | **PPE** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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**Trainer’s Signature:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date:** \_\_\_ / \_\_\_ / \_\_\_\_\_\_\_

**Training Notes:**

* Keep this log for **a minimum of 3 years**
* Training is required **annually** and when job duties change
* Attach training materials or sign-in sheets for EHS records