



UNIVERSITY POLICY

SUBJECT:	HEALTH AND SAFETY	TITLE:	HAZARDOUS WASTE MANAGEMENT		
CATEGORY: Check One	Board of Trustees <input type="checkbox"/>	Presidential <input checked="" type="checkbox"/>	Functional <input type="checkbox"/>	School/Unit <input type="checkbox"/>	
Responsible Executive:	Senior Vice President for Administration		Responsible Office:	Emergency Management and Occupational Health and Safety	
CODING:	00-01-45-35:00	ADOPTED:	07/26/93	AMENDED:	04/15/10

LAST REVIEWED: 04/15/10

I. PURPOSE

The purpose of this policy is to protect life, health, and property, as well as the surrounding communities and local environments by conducting hazardous waste management safely and responsibly. This policy provides UMDNJ faculty, staff, and students with the tools and information to safely and appropriately manage hazardous chemical waste generated throughout University facilities in an environmentally sound manner.

II. ACCOUNTABILITY

Under the direction of the President, the Senior Vice President for Administration shall ensure compliance with this policy. The Executive Director of Emergency Management and Occupational Health and Safety (EMOHS), in collaboration with the Director of Environmental and Occupational Health and Safety Services (EOHSS), shall implement this policy and provide guidance and technical assistance to all UMDNJ Departments in complying with the UMDNJ Hazardous Waste Management Program (HWMP).

III. APPLICABILITY

- A. This policy applies to all employees, including faculty, staff, and volunteers, as well as students; employees are accountable to both the relevant law and this policy, while students are accountable to the policy.
- B. The HWMP covers the following chemical waste categories:
 1. Ignitable Wastes (flammable and combustible materials that are liquid, solid, or gaseous)
 2. Corrosive Wastes (strong acids or bases)
 3. Reactive Wastes (explosive or unstable materials)
 4. Toxicity Characteristic Leaching Procedure (TCLP) Wastes (subject to testing using the toxicity characteristic leaching procedure)
 5. Toxic Wastes (materials that contain heavy metals and other organic constituents)
 6. Acute Hazardous Waste (one of 500 chemicals listed by the USEPA in the regulations for the Resource Conservation and Recovery Act (RCRA)).

- C. The HWMP does not cover radioactive or medical waste. Separate policies are in place to address these requirements.

IV. BACKGROUND

The University of Medicine and Dentistry of New Jersey (UMDNJ) generates various hazardous chemical waste streams because of laboratory research, health care activities, and other facility operations. This policy is for the management of all hazardous chemical wastes generated University-wide as carried out under the UMDNJ Hazardous Waste Management Program (HWMP). Under this program, Environmental and Occupational Health and Safety Services (EOHSS) has established procedures for all UMDNJ academic, research and health care facilities for:

- waste minimization,
- waste determination, accumulation and storage,
- risk minimization,
- transportation and disposal, and
- training and education.

These procedures are consistent with the requirements of the United States Environmental Protection Agency (USEPA) regulations covering the "Resource Conservation and Recovery Act" (RCRA, 40 CFR Parts 260-268). The policy and procedures are shared with all departments generating hazardous chemical waste. EOHSS reviews the regulations annually and updates the applicable University documents as necessary.

V. REFERENCES

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|----|---|--------------------------------|
| A. | Resource Conservation and Recovery Act (RCRA) | 40 CFR Parts 260-268 |
| B. | New Jersey Uniform Fire Code | NJAC 5:70 et seq. |
| C. | Emergency Operations Management | 00-01-10-17:00 |
| D. | Regulated Medical Waste | 00-01-45-15:00 |
| E. | NJ Worker and Community Right to Know Act | 00-01-45-25:00 |
| F. | Laboratory Safety | 00-01-45-55:00 |
| G. | Fire and Life Safety | 00-01-45-60:00 |

VI. POLICY

- A. Requirements:

The University is obligated to comply with all relevant requirements of the Resource Conservation and Recovery Act (RCRA) and its associated regulations for the appropriate management of chemical waste. In conjunction with these requirements, UMDNJ faculty, staff, and students shall adhere to the following guidelines.

1. Waste Minimization

All activities that generate hazardous chemical waste covered under this program shall be conducted in a manner to minimize unnecessary generation of such hazardous wastes. General principles for waste minimization are:

- a. Eliminating the use of a hazardous substance.
- b. Substitution of the hazardous substance with a less or non hazardous material.

- c. Reducing the amount of a hazardous material used in a process.

All chemical waste streams shall be considered for recycling, reuse, detoxification, neutralization, or otherwise rendering non-hazardous as part of the process generating the waste, whenever possible. Used, expired, or unwanted hazardous materials shall be characterized by hazard category and disposed of in a proper and timely manner.

In research laboratory settings, employees should use techniques that require minimal volumes of hazardous materials for analytical procedures, whenever possible.

2. Hazardous Waste Determination

A chemical waste may be considered hazardous due to a general characteristic (e.g., toxic, corrosive, etc.), the process by which it was generated (e.g., lab experiment, spill cleanup, etc.), or because it is specifically listed by name in the RCRA regulations. UMDNJ uses a systematic approach to decide whether a chemical waste is hazardous. The University's procedure for hazardous waste determination is outlined in the HWMP. Contact EOHSS for a copy of this document or access the document online at <http://www2.umdj.edu/eohssweb/eohss.htm>.

3. Accumulation of Hazardous Waste

- a. Risk Minimization

All laboratory personnel shall observe safe work practices, outlined in the University Policy on Laboratory Safety, when working with hazardous materials and accumulating hazardous wastes; all non-laboratory personnel should consult their departmental Standard Operating Procedure (SOP). **Hazardous chemicals SHALL NEVER be poured into laboratory or other drains, or disposed in the regular trash or a regulated medical waste "red bags"** (see the University policy on Regulated Medical Waste).

- i. Segregation

Hazardous chemicals shall be used, stored, and handled in accordance with requirements of New Jersey Uniform Fire Code. Incompatible waste chemicals, e.g., chemicals that may react with each other, shall not be mixed in the same waste container (contact EOHSS or consult the HWMP for guidance, if necessary).

- ii. Inspections

Personnel responsible for hazardous chemical waste management within their respective departments shall inspect satellite accumulation areas weekly. A logbook is not required; however, the HWMP outlines the inspection process.

- iii. Emergency Response

EOHSS staffs a 24-hour emergency response on-call schedule for all campus locations. EOHSS has developed and maintains contingency plans for all UMDNJ campuses. This emergency response system is activated by calling the University's Public Safety Communications Center.

Departmental personnel shall follow the Emergency Response Guide, COOP Plan and Department-specific Disaster Plan (DSDP), and other appropriate plans, procedures, and protocols in the event of a spill or release of a hazardous chemical substance or waste.

iv. Inventory Control Measures

EOHSS maintains a database of the chemical inventories and conducts annual inventories to keep the database current. Departments must take the necessary steps to ensure proper and timely disposal of old, expired, or unwanted chemicals. In addition, departments and individuals shall:

- a) Keep chemical purchases to a minimum.
- b) Employ elimination, substitution, and source reduction procedures.
- c) Retain a chemical inventory for each area of responsibility (as required by the New Jersey Worker Right to Know Act policy).
- d) Ensure that all containers have a label that meets the New Jersey Worker Right to Know Act policy or Hazard Communication Standard requirements. (Refer to University policy, NJ Worker and Community Right to Know Act for labeling requirements.)
- e) Label reactive materials and materials with expiration dates when received and opened to ensure proper disposal before the expiration date.
- f) Adhere to laboratory vacating procedures when relocating, leaving, or renovating to ensure an area is free of old chemicals and is properly decommissioned.

b. Container Management

i. Whenever hazardous chemical wastes are placed into a proper container for disposal, the generator of the waste must immediately label the container with the words “**Hazardous Waste**” using labels provided by EOHSS. The generator of the waste must ensure that all waste containers are kept closed unless adding or removing waste. When filled, the generator must date the container label with the current date and arrange for EOHSS to move the container to the Main Accumulation Area (MAA) for that campus within three (3) working days.

ii. Empty Containers

- a) Typical hazardous wastes - the container must be completely emptied through pouring, etc., and no material shall remain in the container.
- b) Acute hazardous wastes – all such containers must be disposed through EOHSS as hazardous waste.
- c) Empty compressed gas cylinders shall be returned to the vendor or owner for re-use or disposal whenever possible.

4. Requests for Hazardous Waste Disposal

- a. A “Chemical Waste Disposal Request” form (available at <http://www2.umdj.edu/eohssweb/publications/wastedisposal.htm>), listing the

chemical name/constituents and percentage for each chemical added to the container, must be maintained for all hazardous waste containers.

- b. Waste generators shall fax a photocopy or email a completed disposal request form approximately one (1) week before the container is full.
- c. Once EOHSS confirms a drop-off date, the generator shall transport the waste, along with the original Disposal Request form for each container to the MAA, using a wheeled cart with raised sides, at the time scheduled by EOHSS.

5. Budgetary Considerations

- a. Prior to final disposal, unknown ingredients in unlabeled or improperly labeled containers must be determined; any such analytical costs will be the responsibility of the department generating the waste material.
- b. Disposal costs for the following atypical waste types shall be charged directly to the department generating the waste. EOHSS will work with the department to achieve this through the IDT process.
 - i. Containers of hazardous chemicals earmarked for disposal due to a laboratory closure;
 - ii. Any amount of a potentially explosive, peroxide-forming compound whose expiration date has passed;
 - iii. Certain highly toxic or otherwise highly hazardous materials essential to a special research project (e.g., PCB wastes, mixed wastes, etc.);
 - iv. Quantities of non-lab materials (e.g., cleaning materials, dental applications, pharmaceuticals, etc.) that have accumulated over time and cannot be disposed of as non-hazardous solid waste; and
 - v. Hazardous chemical spills that require the assistance of an outside contractor to cleanup.

6. Storage of Wastes in Main Accumulation Areas (MAA)

- a. EOHSS has jurisdiction over all MAAs University-wide and manages all activities conducted in and associated with these areas.
- b. Only properly trained EOHSS staff and qualified vendors shall conduct activities in the MAA.
- c.. MAAs shall be outfitted with the following items, including but not limited to:
 - i. Standard or intrinsically safe electrical features
 - ii. General ventilation
 - iii. Local exhaust ventilation
 - iv. Impervious flooring
 - v. Secondary containment
 - vi. Fire suppression
 - vii. Portable fire extinguisher
 - viii. Fire alarm system
 - ix. Standard or spark proof telephone
 - x. Shower and eye wash
 - xi. Poly-coated storage shelves
 - xii. Flammable storage cabinets
 - xiii. Bench top and sink

7. Disposal of Wastes via Licensed Disposal Vendor

- a. No wastes shall be stored in the MAA beyond the waste accumulation limit allowed by law (90 days for Large Quantity Generator - LQG; 180 days for Small Quantity Generator - SQG). Dates will be tracked by EOHSS using the container full date on the UMDNJ Hazardous Waste label.
- b. The vendor shall be scheduled to conduct pick-ups and dispose of wastes from the MAA to ensure that the designated waste accumulation limit is not exceeded.
- c. The vendor shall be responsible for packing, labeling, and shipping all wastes to a designated treatment, storage, and disposal facility (TSDF) with an appropriate EPA ID Number. The vendor shall also prepare relevant hazardous waste manifests and "Land Ban" forms for EOHSS to review.
- d. As instructed by EOHSS, the vendor must properly placard the transportation vehicle before leaving the premises. Hazardous waste manifests and all other transportation and disposal related documents should only be signed by an authorized EOHSS representative.
- e. The vendor must ensure that the TSDF copy of the manifest is returned to UMDNJ within 30 days from shipment, as required by RCRA regulations.

8. Mandatory Training

- a. EOHSS provides on-line training for individuals with hazardous waste-related duties. All individuals (faculty, staff, students, etc.) with hazardous waste-related duties must complete annual training. Supervisors are required to ensure that such individuals participate in the training. Individuals with hazardous waste-related duties shall be trained as follows:
 - i. EOHSS will provide initial and annual refresher training to all LQG and SQG site personnel.
 - ii. Conditionally Exempt SQG sites do not require personnel training; however, EOHSS will provide introductory training to all such personnel.
- b. EOHSS staff members acting as campus waste managers will be trained as required by 40 CFR Part 265.16-56 (Subparts B, C, and D).
- c. EOHSS and each department will retain a copy of all such training records including those of former employees for a minimum of three (3) years. These records are transferable throughout UMDNJ.

B. Responsibilities:

The Hazardous Waste Management Program specifies areas of responsibility for Deans, Presidents/CEOs of Healthcare Units, waste generators, personnel responsible for hazardous waste management in each department (including investigators, laboratory managers and supervisors, technologists/technicians, Physical Plant and Support Services Managers/Supervisors, and others as applicable), and EOHSS staff members. While students are not directly responsible for hazardous waste management, and are never given responsibility to manage hazardous waste, they may generate waste within the laboratory in which they work. As such, they are responsible for following the guidance of the personnel within their workplace who are responsible for hazardous waste management as well as all applicable provisions of this policy and the HWMP.

In general, departments/personnel generating hazardous waste must follow all applicable SAA requirements guiding waste generation. EOHSS ensures that SAA and MAA procedures are followed, including proper hazardous waste disposal and record keeping.

1. Deans, Vice Presidents, and Presidents/CEOs of Healthcare Units shall ensure compliance with this policy to the extent applicable to the departments/schools/units under their authority. Personnel responsible for hazardous waste management for their department shall be appointed by the Director or PI of the respective department or area. All UMDNJ employees generating hazardous chemical waste shall comply with the provisions of the UMDNJ Hazardous Waste Management Program (HWMP).
2. UMDNJ employees who are responsible for managing hazardous waste (including investigators; laboratory managers and supervisors; technologists/technicians; Environmental Services and Physical Plant Managers/Supervisors, and others as applicable) shall adhere to the following responsibilities:
 - Inspecting hazardous waste containers in satellite accumulation areas weekly.
 - Using a container that is compatible with the waste generated.
 - Keeping the container closed (with a screw-top cap, not a funnel) at all times, except when adding or removing waste.
 - Ensuring containers are in good condition and free of precipitate and drips.
 - Storing containers on an impervious surface with no active floor drains nearby.
 - Only storing bottles on the floor with secondary containment.
 - Storing containers where the waste is generated; the person generating the waste must manage the area.
 - Ensuring every container has a properly filled out hazardous waste label.
 - Dating containers when full.
 - Contacting EOHSS for a pick-up within three (3) days of the container becoming full.
 - Completing annual refresher training.
3. EOHSS Staff Members (who have received hazardous waste training) are responsible for:
 - Collecting chemical waste from waste generators University-wide and transferring it to the local MAA.
 - Segregating hazardous chemical waste in accordance with federal regulations.
 - Inspecting MAAs weekly.
 - Maintaining an electronic database of SAA locations throughout the University.
 - Disposing of accumulated waste through a licensed vendor under contract with the University.
 - Ensuring that waste is disposed in accordance with RCRA accumulation time limits, depending on generator status.
 - Facilitating the process to test, deactivate, and/or identify waste streams prior to disposal.
 - Reviewing and signing shipping documents for all hazardous waste manifests.
 - Maintaining records for a minimum of three (3) years.
 - Completing and submitting Biennial Hazardous Waste Generator reports for all Large Quantity Generator (LQG) sites every odd calendar year (e.g., 2007, 2009, etc.).
 - Providing training to individuals generating hazardous chemical waste throughout UMDNJ facilities.

C. Enforcement:

1. Compliance with the provisions of the USEPA RCRA regulations and the guidelines set forth in this policy by all members of the faculty, staff, and administration is mandatory. Violations of the provisions of RCRA may result in civil or criminal actions against an individual or the University. Disciplinary action, up to and including termination, may be

taken and/or an unfavorable performance appraisal may be issued by the applicable Dean, Vice President, or President/CEO of a Healthcare Unit (or designee) against individuals or groups of individuals determined to have violated this policy.

2. Noncompliance will result in EOHSS issuing a "Notice to Comply," requiring corrective actions on the part of the violator; EOHSS does not issue discipline to individuals.
3. Fines and other sanctions for violations are the responsibility of the department whose employee's actions incurred the violation.

VII. EXHIBIT

DEFINITIONS

By Direction of the President:

Senior Vice President for Administration

EXHIBIT

DEFINITIONS

- A. Accumulation Limit – The amount of time, designated by law, that a chemical waste can be stored on site, prior to disposal.
- B. Acute Hazard Waste – As defined by the U.S. Environmental Protection Agency (EPA) listed in 40 CFR 261.33, for example sodium azide and osmium tetroxide, two such waste commonly generated within UMDNJ laboratories.
- C. Conditionally Exempt Small Quantity Generator (CESQG) – Exempt from USEPA RCRA regulations due to minimal quantities of waste generated per month. UMDNJ operates a few CESQG sites, including Scotch Plains and Somerdale Dental Clinic.
- D. Laboratory Personnel – faculty, staff, students (undergraduate, graduate), postdoctoral fellows, visitors, volunteers, and others regularly working, studying, or conducting research in UMDNJ laboratories.
- E. Large Quantity Generator (LQG) – Fully regulated by USEPA RCRA based on the amount of pounds of waste generated per month. UMDNJ operates two LQG sites, the Newark and Piscataway campuses.
- F. Main Accumulation Area (MAA) – A controlled area managed by EOHSS, where chemical waste is stored until disposed through a licensed vendor to a state permitted facility.
- G. Mixed Waste – A combination of hazardous chemical waste and radioactive or medical waste.
- H. Non-Laboratory Personnel – faculty, staff, students (undergraduate, graduate), postdoctoral fellows, visitors, volunteers, and others who regularly work in an administrative or facility capacity in or on UMDNJ- owned or operated buildings or campuses, and under no circumstances work in a UMDNJ laboratory.
- I. Satellite Accumulation Area (SAA) – An area controlled by a department, where hazardous chemical waste is generated and temporarily stored in an appropriate container. Once the container is full, the department transfers the waste to EOHSS for storage at an MAA prior to final disposal.
- J. Small Quantity Generator (SQG) – Partially regulated by USEPA RCRA based on the amount of pounds of waste generated per month. UMDNJ operates several SQG sites, including ICPH, CAB, MEB, CINJ, CHI, and the Stratford and Camden campuses.
- K. Toxicity Characteristic Leaching Procedure (TCLP) – USEPA test method for determining whether a given toxic chemical exhibits a concentration causing it to be considered hazardous. Chemicals regulated under this test method include heavy metals such as cadmium and lead; chlorinated solvents such as chloroform and vinyl chloride; and pesticides such as Endrin and Lindane.
- L. Typical Hazardous Waste – Common acid, caustic, or solvent; excludes acutely hazardous chemicals, explosive materials, and carcinogens. Chemicals in these categories include hydrochloric acid, ammonium hydroxide, xylene, formaldehyde, and alcohols, to name a few.
- M. Waste Coordinator – A UMDNJ employee who has completed the appropriate waste management training and is designated by a Principal Investigator (PI) or Director as having responsibility for managing hazardous wastes for a specific department or area.
- N. Waste Generator – Any individual (faculty, staff, students (undergraduate, graduate), postdoctoral fellows, visitors, volunteers, and others) or group of individuals (e.g., Department/Division) who creates a chemical compound or mixture of chemicals determined to be a hazardous waste.