



UNIVERSITY OF
NORTHERN COLORADO

Environmental Health and Safety

Universal Waste Management Plan

April 2024



UNIVERSITY OF
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Environmental Health and Safety

Universal Waste Management Plan

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Universal Waste Management Plan

I. Introduction

The University of Northern Colorado collects and disposes of Universal Waste in accordance with the United States Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE) regulations. Universal Wastes are a sub-category of Hazardous Wastes, but the Universal Waste rule provides for reduced management and record keeping requirements for those specific wastes. While the majority of hazardous waste is generated by industry and laboratories, universal wastes are generated by nearly every business as well as private residents. Although the regulation of Universal Wastes is simplified and streamlined, Universal Waste materials cannot be placed in regular trash, tossed on the ground, or poured down the drain.

The Universal Waste Management Plan provides one process for written documentation of Universal Waste records for the University of Northern Colorado (UNC). It will also inform interested persons, including university and contracting employees, of UNC's compliance with the EPA requirements for Universal Waste generators.

II. Regulatory Authority

Universal waste is regulated by the EPA under 40 CFR 273 (Standards for Universal Waste Management) and the CDPHE Universal Waste Rule [Colorado Hazardous Waste Regulations 6 CCR 1007-3 Part 273].

Campus Policy

UNC Board of Trustees has adopted a policy (1-1-507 Hazardous Materials) which states:

Employees who handle toxic or hazardous substances on behalf of the University are required to maintain, use and dispose of such substances in accordance with applicable UNC Hazardous Material Management Plan procedures, state, federal and local laws/regulations as a condition of their employment. The employee should obtain assistance in ascertaining his/her obligations under these laws and regulations from the Director of Environmental Safety or his/her designee. Any employee who violates any such laws or instructions given by the University Environmental Health and Safety Office shall be deemed to have acted outside the scope of his/her authority.

III. UNC Universal Waste Handler Status

The University of Northern Colorado is a large quantity handler of universal waste. Large quantity handlers are those that accumulate a volume of 5,000 kilograms (11,023 pounds) or more of universal waste items annually. Elemental mercury shall not exceed a volume of 35 kilograms (77 pounds) at one time.

IV. Universal Waste Accumulation Area

Universal wastes must be stored in a designated waste storage area with sufficient space to accumulate and store the quantity of Universal Wastes generated. UNC's Universal Waste Accumulation Area is located at Cogen Building. The accumulation and storage of universal wastes must be managed in a manner that prevents the release of waste or waste constituents. All waste should be immediately containerized into the appropriate designated vessel when placed in the Universal Waste Accumulation Area. Materials that do not have a designated vessel/storage location should never be left in this area, contact EHS for proper disposal.

V. Universal Waste Types

Universal waste that is handled at UNC Cogen Building includes: batteries, mercury containing devices, lamps, pesticides, aerosol cans, and Light Emitting Diode, better known as LED.

A. Batteries

Batteries collected at the University of Northern Colorado have a battery chemistry that includes lead acid, Nickel Metal Hydride (NiMH), and Nickel Cadmium (NiCd). Varying shapes, sizes, and styles can include cylindrical, rectangular, flat cells, button cells, lanterns, nine volts, and battery packs. A battery becomes universal waste when it is removed from service. Automotive lead acid batteries must be handled as universal waste and shall be disposed of through Facilities Management. For proper documentation see Section VII, Proper Labeling of Containers.

Batteries that are not regulated as a Universal Waste include Alkaline, zinc carbon, zinc chloride, lithium-ion and non-automotive lead acid. These types of batteries are disposed of through recycling. A picture guide of the various types of batteries that are recycled as universal wastes can be found in Appendix D.

B. Mercury Containing Devices

Thermostats, thermometers, manometers, barometers, sphygmomanometers, relays, and switches are all examples of devices that may contain mercury. These devices can be managed under the universal waste rule provided they are intact.

C. Lamps/Bulbs

Lamps, bulbs, or tube portions of electrical lighting devices, may contain small amounts of mercury. There may also be small amounts of cadmium in some types of lamps. Lamps considered to be universal waste can be fluorescent, metal halide, or mercury vapor. Small compact, U-tube, straight, and standard light bulb shapes are all very commonly found in universal waste.

Non-mercury containing lamps that are utilized by the University campus can be disposed of in the solid waste dumpster. Always verify that the bulb is a non-mercury or low-level mercury bulb before disposal. See Appendix E for a pictorial reference guide of the low-level mercury containing bulbs that may be found on campus. Low-level mercury bulbs that could be used on campus may include the following:

- General Electric Bulbs
 - Ecolux
 - Ecolux Starcoat
 - Ecolux UltraMax
 - Ecolux Biax
 - Ecolux Lucalox
 - Ecolux Mod-U-line
- Sylvania Bulbs
 - Ecologic
 - OCTRON Ecologic
 - PENTRON Ecologic
 - Lumalux (Plus) Ecologic
 - ICETRON Ecologic
 - Powerball CRI Ecologic
- Phillips Bulbs
 - ALTO
 - Ceramalux ALTO
 - Universals ALTO
 - U Bent ALTO
 - PL-C Cluster ALTO
 - PL-S Short ALTO
 - PL-T Triple ALTO
 - MasterColor CDM ALTO
 - Dim Alto

In the case of a Universal Waste spill, see Section XIII, Emergency Procedures.

D. Light Emitting Diode

Light Emitting Diode (LED) is recognized and categorized as e-waste (Colorado Hazardous Waste Regulation Part 273.2) and are considered Universal Waste.

LED's will be disposed of through Facilities Management. For proper documentation see Section VII, Proper Labeling of Containers. Colorado Hazardous Waste Regulations Part 273 states that all LED's will be disposed as e-waste because of the electronic component in the lamp. Regulations are designed to reduce the regulatory burden on facilities that generate these wastes while at the same time reducing the amount of hazardous waste illegally sent to municipal solid waste landfills.

E. Pesticides

Pesticides that have been recalled or banned from use, are obsolete, have become damaged, or are no longer needed due to changes in procedures or other factors, are considered a universal waste.

F. Computers and Electronic Devices

Electronic devices considered to be universal waste include computer monitors and circuit boards. University computers that are no longer in service should be turned in to the Information Management and Technology (IMT) department. IMT will assess electronic and computer equipment prior to disposal. Proper recycling and disposal will be coordinated through Facilities Management.

VI. Accumulation Time Limits

Universal waste can be accumulated for up to one year from the date it became a waste. The amount of time that a universal waste has been accumulated must be demonstrated, in any one of the following ways:

1. Directly marking the universal waste with the date that it became a waste.
2. Marking the container with the earliest date that waste began accumulating in that container.
3. Marking a designated accumulation area with the earliest date that waste began accumulating in that area.
4. Keep an inventory that identifies the date that each universal waste became waste
5. Keeping an inventory that identifies the earliest date that a universal waste became a waste in the designated accumulation area.

VII. Proper Labeling of Containers

All Universal Waste containers must be labeled at the time the first waste is generated in the container. If you have Universal Wastes that need to be disposed of, fill out a UNC waste tag (See Appendix A), and attach it to the container of materials being disposed of. These tags allow EHS to know exactly what the waste is so it can be placed in the correct container in the central Universal Waste Storage Area in the Parsons Hall Garage.

Containers in the central Universal Waste Storage Area should each have a purple, universal waste label stuck on in a visible location, the label shall display the accumulation start date for each specific container. Appendix B shows the universal waste label and describes how it is to be filled out.

VIII. Inspections

Environmental Health and Safety will monitor the central Universal Waste storage area to ensure the waste is properly segregated, containers are in good condition, the area is organized, and good housekeeping is being maintained. If a container is full or damaged notify the EHS Department. A monthly inspection will be done for best management practices. Appendix F shows the inspection sheet.

IX. Hazardous Materials Release

Spills or residues from universal waste may be considered hazardous materials / waste if any or all the released material or residue is hazardous. Spills should be reported to UNC Police Department (970) 351-2245 or the Facilities Management Service Center (970) 351-2446 immediately. If the materials released in the spill are considered hazardous, it must be managed as hazardous waste rather than universal waste.

X. Offsite Shipment/Transportation

Universal waste can only be shipped to a certified universal waste handler, or a Transfer, Storage, Disposal, or Recycling Facility (TSDRF). Prior to shipping universal waste off-site, the generator of the waste must obtain approval from the destination facility. The EHS department is responsible for scheduling and approving all waste shipping documents.

XI. Record Keeping

All universal waste management activities shall be documented. The following are documentation requirements that will be maintained by EHS.

- All universal waste documentation related to transportation, shipment, regulatory reporting, etc.
- Hazardous Material / Waste tags
- Universal Waste Management release records
- Initial / Annual universal waste management training records
- All other universal waste management documentation

These records must be kept for a minimum of three years.

XII. Training

As a large quantity waste handler of universal waste, UNC must ensure that employees who manage or handle universal waste are thoroughly familiar with waste handling methods and emergency procedures applicable to the waste they are handling, and relative to their responsibilities during normal University operations and emergencies. All training records must include the dates of training sessions, contents or a summary of the training session, name of the trainer, and names of the individuals attending the training session. Training that is conducted by departments should send a copy of the training roster to EHS.

XIII. Emergency Procedures

The University is committed to the management of Universal Waste to minimize the possibility of an accidental release into the environment. As part of this commitment, UNC maintains equipment on-site to facilitate spill cleanup.

The University has a Spill Prevention, Control, and Countermeasure (SPCC) Plan and Hazardous Materials Incidents Emergency Response Plan that is maintained by the EHS department. These plans support spill response and emergency situations related to the Universal Waste Management Program. In case of a spill or release immediately contact UNC Police Department at 351-2245 immediately. The Hazardous Materials Incident Emergency Response Plan shall be used as a guide during any release, spill, or incident.

Appendix A

Hazardous Material / Waste Tag

** – Information that is **not** required for Universal Wastes

UNIVERSITY of
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HAZARDOUS MATERIAL/WASTE

Environmental Health & Safety | Parsons Hall 351-2446 | Fax 351-1170

PRESS HARD USING INK – MULTIPLE COPIES

Dept. _____ Bldg. _____ Rm# _____

Generator Name _____ Phone _____

Exact Container Location _____

% (must total 100)	Container Contents Use Complete Chemical Names

Continued next tag? No Yes (tag _____ of _____) Do not write on back

How was the product(s) used? _____

Type of container _____

Size of container _____

Actual volume _____

Material Type: Liquid Solid

How the material was used _____

Special Instructions _____

Generator Signature _____ Date _____
(I certify the accuracy of this record)

Container Tracking # **010000**

Submit top copy to EHS and attach bottom card to container

- Your Department
- Building & Room Number (if applicable)
- Person or lab that generated the waste & their contact number **
- Location Where Material is Being Stored **
- Material or Chemical being Disposed of
- Approximate (%) of each type of material or component **
- Container size & type (i.e. 1L metal, 5gal plastic) **
- For Universal Wastes, write approximate quantity of each type of waste
- Generator's signature & Date

Please attach the bottom copy of the tag to the waste container.

The top copy of each waste tag can be sent to the EHS Department at **Campus Box 57**, or dropped off at the Parsons Hall Service Center, located at **501 20th Street**.

Appendix B Universal Waste Label Information

Parsons Hall - Universal Waste Storage Area

- Waste Label Information -

UNIVERSAL WASTE

CONTENTS “Waste Batteries” or “Waste Bulbs”

Labels should indicate materials are “spent” or “waste”

ACCUMULATION START DATE Date should reflect when the first
Item was placed in container

SHIPPER University of Northern Colorado

ADDRESS 411 20th Street

CITY, STATE, ZIP Greeley, CO 80639

For Any Questions Contact:

Mary Nguyen, EHS

Parsons Hall, Room 2020

Phone: 970-351-1270

Email: mary.nguyen@unco.edu

Appendix C

Picture Guide - Cogen Universal Waste Storage Area



Appendix D

Low-level Mercury Bulb Picture Reference Guide

Batteries Should be Sorted by Type –
If you don't have time, please leave them on the pallet

Lead Acid (Pb-Acid) – 55 Gal. Drum



Alkaline Batteries – 5 Gal. Container



Nickel-Cadmium (Ni-Cad) – 5 Gal. Container



Lithium Batteries – 5 Gal. Container



Appendix E Low-level Mercury Bulb Picture Reference Guide

General Electric Bulbs



Ecolux



Ecolux Starcoat



Ecolux Ultramax



Ecolux Biax



Ecolux Lucalox



Ecolux Mod-U-line

Sylvania Bulbs



Ecologic/OCTRON Ecologic



PENTRON Ecologic



Lumalux (Plus) Ecologic

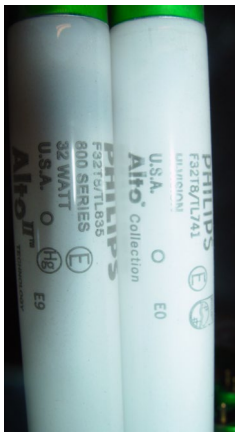


ICETRON ecologic



Powerball CRI Ecologic

Phillips Bulbs



ALTO



Ceramalux ALTO



Universals ALTO



U Bent Alto



PL-C ALTO



PL-S ALTO



PL-T ALTO



MasterColor Alto



Dim Alto

LED BULBS



Philips LED lamps

Appendix F

Universal Waste Area Monthly Inspection Sheet

Universal Waste Area Monthly Inspection Form



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Instructions: Inspect waste containers holding universal waste once a month for leaks, signs of corrosion, swelling, and proper labeling. If a container is found to be leaking, immediately transfer the waste to a new container. Containers must be closed at all times except when adding wastes. Incompatible wastes must not be stored next to each other unless they have a separate secondary containment.

Date of Inspection												
Inspector Initial												
All containers closed?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
All containers properly labeled, legible and complete?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
All containers undamaged, free of leaks/spills	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Containers free of debris?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Container is compatible with other materials within close vicinity?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Proper access/isle space available?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Waste date is less than 365 days	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Corrective action taken/comments												

**Circle Y for YES or N for No for each question
All NO responses require immediate corrective actions.**

Accumulation Area Location: _____ Inspector Signature: _____ Date: _____