



# UNIVERSAL WASTE PROCEDURES

## 1. DEFINITION OF UNIVERSAL WASTE

The United States Environmental Protection Agency 40 CFR Part 273 and the State of Connecticut Department of Energy and Environmental Protection RCSA Section 22a-449(c)-113 have identified certain waste streams to be potential hazardous to the environment if disposed of through normal trash collecting methods and placed in a sanitary landfill. This class of waste is identified as Universal Waste and includes the following categories of items:

- Batteries**
- Pesticides**
- Thermostats/Mercury Containing Devices**
- Lamps**
- Used Electronics**

The following definitions apply to potentially hazardous waste streams falling into the category of Universal Waste:

<b>Batteries</b>	Means a device consisting of one or more electrically connected electrochemical cells which is designed to receive, store and deliver electric energy. An electrochemical cell is a self-contained system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed. UConn Health also identifies common batteries such as D cells, C cells, watch batteries, AA, AAA, etc. as wastes that should not be discarded in normal trash.
<b>Pesticides</b>	Means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant. Certain drugs and animal feed compounds may be exempted.
<b>Thermostats/ Mercury Containing Devices</b>	Means a temperature control and/or pressure sensing device that contains metallic mercury in an ampoule attached to a bi-metal sensing element, and mercury containing ampoules that have been removed from these temperature/pressure control devices.
<b>Lamps</b>	Are defined as the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.



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<b>Used Electronics</b>	Means a device or component thereof that contains one or more circuit boards or a cathode ray tube and is used primarily for data transfer or storage, communication, or entertainment purposes, including but not limited to, desk top and lap top computers, computer peripherals, monitors, copy machines, scanners, printers, radios, televisions, compact disc players, digital video disc players, MP3 players, telephones, including cellular and portable telephones, and stereos.
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Another category or waste material included in this policy, which is NOT a Universal Waste, is Used Oils. The EPA and the State of Connecticut DEP define used oils as:

<b>Used Oils</b>	Means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.
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## 2. REGULATORY REQUIREMENTS FOR UNIVERSAL WASTE DISPOSAL

Federal and State regulations are very specific concerning the method by which Universal Waste may be disposed. It should be noted that all of the items in this category contain potentially hazardous materials, which if handled improperly, could pose a risk of exposure and/or contaminate the environment. Regulation specifically prohibits the disposal of universal waste, treating or diluting such waste. Universal Waste must be transferred to a licensed universal waste handler or a universal waste destination/processing facility. A universal waste destination facility is a facility that treats, disposes of, or recycles a particular category of universal waste. The primary method of disposal of Universal Waste at UConn Health is recycling, with disposal being a final option. The regulations also specify time limits for which universal waste may be accumulated onsite. UConn Health must be able to demonstrate that universal waste collected has been onsite no longer than one year. This necessitates an inventory system be in place for tracking. There are also requirements for labeling of all the universal waste types, storing them properly, spill response procedures, and training of staff that are involved in picking up, transporting and packaging of such wastes.

The intent of this policy is to ensure compliance with Federal and State regulations for handling Universal Waste. To this end, various Departments have been assigned responsibility and procedures for each waste stream.



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## 3. ASSIGNMENT OF RESPONSIBILITIES

The following UConn Health Departments have agreed to manage each Universal Waste stream and will ensure this policy is implemented.

<b>Batteries</b>	Facilities Development & Operations, Telecommunications, Environmental Health & Safety, Clinical Engineering, Logistics Management/Property
<b>Thermostats</b>	Facilities Development & Operations, Environmental Health & Safety
<b>Pesticides</b>	Facilities Development & Operations, Environmental Health & Safety
<b>Lamps</b>	Facilities Development & Operations
<b>Used Electronics</b>	Logistics Management/Property, Telecommunications, Clinical Engineering, Environmental Health & Safety
<b>Used Oils</b>	Facilities Development & Operations, Environmental Health & Safety

Each Department has agreed to their responsibilities described in this policy and have signed this policy in agreement with it.

## 4. DEPARTMENTAL POLICIES

### A. ELECTRONIC PRODUCTS

The UConn Health Community shall be informed of the Electronic Product disposal requirements through various established communication systems. The primary accumulation point for ALL used electronic products generated at UConn Health is Logistics Management/Property. Used Electronic equipment shall be transferred to another Universal Waste Handler for recycling (if possible) or transferred to members of the general public through established procedures. Transfers of electronic equipment to the public will be done solely for the reuse of such equipment and with the buyer’s signature indicating they are aware of the Universal Waste Disposal requirements. Logistics Management/Property will document on hand inventory, transfers to waste handlers and transfers to the general public. Records will be maintained by Logistics Management/Property.

### GENERAL PROCEDURE FOR COLLECTING ELECTRONIC PRODUCTS



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1. If electronic products were involved with hazardous materials work, such as radioactive, biological and/or hazardous chemicals the **Environmental Health & Safety** shall certify these items free of contamination prior to release. Call Environmental Health & Safety at x2723 for information.
2. If UConn Health owned electronic product has outlived its usefulness, the owner must use a LM2 Form that is available on the [Logistics Management/Property Web-Site](#).
3. Electronic equipment shall not be disposed in the normal trash stream, this includes personal items (including batteries) which are not UCHC property.
4. Electronic products collected for possible transfer to the public shall be segregated and identified as "Reusable Electronics". When **Logistics Management/Property** determines that used electronics are a waste and not immediately usable, they shall be segregated and labeled as "Universal Waste- Used Electronics".
5. **Facilities Development & Operations Custodial** workers shall be instructed to remove any electronic equipment from the normal trash stream, and **Logistics Management/Property or Environmental Health & Safety** shall be called for pickup of such items.
6. **Facilities Development & Operations** shall ensure that electronic equipment and other forms of Universal Waste (lamps, thermostats and batteries) are collected by contractors and delivered to the appropriate department (see section #3) for proper handling.
7. **Clinical Engineering** shall arrange for electronic equipment transfer to **Logistics Management /Property**. Clinical Engineering shall contact **Environmental Health & Safety** for pick-up of batteries or electronic equipment that is not UConn Health property.
8. **Telecommunications** shall arrange for transfer of used electronic equipment to Logistics Management/Property. **Environmental Health & Safety** shall be contacted for used battery pick-up at x2723.
9. **Environmental Health & Safety** will periodically inspect universal waste accumulation sites to verify compliance.
10. **Environmental Health & Safety** can assist with the department's training efforts.
11. **Logistics Management/Property** shall arrange for final transfer of electronic products to the general public or an authorized contractor.
12. **Logistics Management/Property** specific procedures for handling and storing Universal Waste Electronic Products (RCSA 22a-449 (c)-113, (d)).
  - a. Manage used electronics in a way that prevents the release of any universal waste, component of a universal waste, or component of a universal waste, or constituent of a universal waste to the environment;
  - b. Store all used electronics inside a building with a roof and four walls or in the cargo-carrying portion of a truck, such as in a trailer, in a manner that prevents used electronics from being exposed to the environment and shall ensure that all used



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electronics are handled, stored and transported in a manner that maintains the reuse or recyclability of any such used electronic or component thereof;

- c. Immediately clean up and place in a container any broken used electronic and shall place all such waste in a container. Any such container shall be closed, structurally sound, and compatible with the constituents and shall be capable of preventing leakage, spillage or releases of hazardous constituents from such broken devices to the environment. Environmental Health & Safety shall be consulted or contacted prior to any clean-up actions;
- d. Do not shred, crush, heat or otherwise treat used electronics or any component thereof. In addition, a handler of universal waste shall not disassemble used electronics without first obtaining a permit issued by CT DEEP (***UConn Health has committed to DEEP that disassembling of any electronics is prohibited***); and
- e. Clearly label or mark each used electronic device or container, package or pallet containing used electronics, with one of the following phrases: **UNIVERSAL WASTE-USED ELECTRONICS**, or **WASTE USED ELECTRONICS**, or **USED ELECTRONICS**.

### **B. BATTERIES**

Another category of Universal Waste is “Used Batteries”. Technically, used batteries are those containing an electrolytic material, such as lead-acid automotive car batteries. Although not part of the Universal Waste stream, the Health Center also attempts to collect dry cell batteries such as C, D cells, AA, AAA and similar batteries. There are multiple battery collection sites located throughout the campus. Contact EH&S x2723 to locate the site closest to you. At the present time, the UConn Health Maintenance Garage and **Clinical Engineering** have been identified as the two major sources of Universal Waste Batteries. It should be noted that as other locations are identified similar procedures for collection and recycling will be implemented. **Clinical Engineering and Facilities Development & Operations** are assigned the primary responsibility for collecting and properly handling used batteries generated from clinical Engineering and/or vehicle/equipment maintenance operations. **Environmental Health & Safety** will then consolidate and ultimately coordinate the disposal of all batteries generated on the campus. The following procedure must be followed by **Clinical Engineering and Facilities Development & Operations** (and other identified departments) when handling used batteries.

#### **GENERAL PROCEDURE FOR COLLECTING AND DISPOSING USED ELECTROLYTE CELL BATTERIES**

- a. Used batteries must be stored with compatible materials.
- b. Batteries must be stored and handled to prevent leakage of electrolytes, case breakage and short circuits. Non-alkaline batteries (Lithium, Ni-Cd, Ni-Mh) battery terminals must be taped by the user prior to placement into collection bin.



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- c. Batteries must be stored on secondary containment to prevent leakage into the environment.
- d. Batteries must be recycled and/or transferred to an authorized contractor/recycler.
- e. A battery storage area must be **INSPECTED WEEKLY** and a log kept of the inspection results.
- f. The battery inspection log must contain the following information:
  - 1. Date battery placed into storage
  - 2. Total battery accumulated weight, name of inspector, any problems found and corrective actions taken
  - 3. Date indicating battery pickup by an authorized vendor.
- g. Each battery or container must be labeled "**UNIVERSAL WASTE-BATTERIES**"
- h. Used batteries must be removed and recycled within one year of placing them in storage. This is documented by the log described in step e.
- i. All individuals handling used batteries must receive training on the requirements and safety concerns.

### C. LAMPS

Examples of universal lamp wastes include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium and metal halide lamps. Such items must not be disposed into the normal trash but must be recycled by an authorized vendor. Lamp change outs at UConn Health are the responsibility of **Facilities Development & Operations**. The following procedure for collected used lamps will ensure compliance with State and Federal requirements regarding this waste stream.

#### GENERAL PROCEDURE FOR COLLECTING USED LAMPS

- a. Lamps must not be disposed into normal trash.
- b. Lamps must be handled to avoid breakage.
- c. Lamps must be stored in such a way that breakage is not likely.
- d. Once removed, a used lamp must be properly packaged, usually in original new lamp boxes or containers.
- e. Lamp containers must be labeled "**UNIVERSAL WASTE-LAMPS**".
- f. Drum top lamp crushers are not permitted in the State of Connecticut.
- g. Transportation of used lamps between UConn Health locations is permitted provided the precautions noted above are taken.



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- h. Employees transporting “Used Lamps” must be trained in proper handling and emergency procedures.
- i. Used lamps must be removed and recycled within one year of pickup. Vendor recycling shipping papers must be signed by an Environmental Health & Safety representative and will be used to document this requirement.
- j. Facilities Operations & Development shall ensure that contractors are aware of the Universal Waste requirements and will inform contractors not to dispose of lamps into normal waste streams, including construction debris.

### **D. PESTICIDES AND THERMOSTATS**

**Facilities Development & Operations** shall collect used thermostats as they are generated from service or renovation procedures. Facilities Development & Operations shall notify Environmental Health and Safety that used thermostats need to be picked up. Thermostats must not be placed into the normal trash and/or construction waste streams. This is a minor source of Universal Waste at the UConn Health. Facilities Development & Operations shall attempt to eliminate mercury containing thermostats from proposed new construction and/or renovation projects.

Pesticides are applied by contractors at this time. Facilities Development & Operations shall ensure that all pesticide waste is not disposed on UConn Health property, and that the contractor removes all such materials. **Facilities Development & Operations**, should a change in the current program occur, will ensure pesticides are disposed as required by Environmental Health & Safety.

### **E. USED OILS**

As previously stated, “Used Oils” are not a Universal Waste. However, similar requirements exist for recycling of such material and it is therefore included in this policy. Used oil must be properly collected, stored and recycled for compliance with EPA and State DEEP regulations. Facilities Development & Operations is the primary generator of used oils at UConn Health.

#### **GENERAL PROCEDURE FOR COLLECTING AND STORING USED OIL**

- a. Used oil must be collected in a manner that avoids spills and potential contamination of the environment.
- b. The collection container must be in good condition.
- c. The collection container must not be leaking.



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- d. The collection container should be kept closed when not filling, and stored on or in a secondary containment area.
- e. Each container must be labeled "**USED OIL**".
- f. Used oil collection centers and haulers must be licensed by the State of Connecticut and have an EPA ID number.
- g. The State of Connecticut requires that proof be provided that used oil does not contain any impurities. This can be done by having a sample of the oil sampled for total halogen content, which must be less than 1000 ppm to assume no such contamination exists. Facilities Development & Operations shall provide Environmental Health & Safety a sample of used oil prior to pick up for such analysis. Environmental Health & Safety shall arrange for testing for total halogen content.
- h. Environmental Health & Safety or delegate shall provide training to individuals responsible for used oil collection and disposal.

### **F. STAFF TRAINING**

Supervisory staff will ensure that all staff involved in Universal Waste handling are trained as appropriate. The attached certification of training forms will be used for training and documentation purposes. Copies of training certification forms must be forwarded to Environmental Health & Safety at MC1514.

Attachments:

#### **Certification of Training Forms**

1. Used Electronics
2. Batteries
3. Used Oil
4. Lamps