
Document Name: Regulated Waste Management Program	Approval Date: 9/10/12
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FMC Division: Risk Management	Approved By: AVP, FMC

Regulated Waste Management Program



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Definitions

Acute Hazardous Waste – Waste that contains such dangerous chemicals that it could pose a threat to human health and the environment even when properly managed. These wastes are fatal to humans and animals even in low doses.

Conditionally Exempt Small Quantity Generators (CESQG) – Anyone who generates 220 lbs (100 kilograms) or less per month of hazardous waste, or 2.2 lbs (1 kilogram) or less per month of acutely hazardous waste

Central Accumulation Area – Sites designated by TWU Risk Management to be used for the storage of hazardous wastes prior to shipment to authorized disposal facilities.

EPA Identification Number – The number assigned by the Environmental Protection Agency to each generator, transporter, and processing, storage or disposal facility.

Generator – Any person, by site, who produces hazardous waste or industrial solid waste; any person who possesses hazardous waste or industrial solid waste to be shipped to any other person; or any person whose act first causes the solid waste to become subject to regulation. *Person* refers to an individual, trust, firm, corporation, Federal Agency, State, political subdivision of a State, municipality, or any interstate body.

Hazardous Material – Any substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.

Hazardous Waste - Any solid waste material listed or identified in Title 40 Code of Federal Regulations, Part 261, Subpart C and D or exhibiting the characteristics of ignitability, corrosivity, reactivity, or toxicity also defined in Part 261.

Large Quantity Generators (LQG) – Anyone who generates more than 2,200 lbs (1,000 kilograms) of hazardous waste per month.

Manifest – A legal document containing required information, which must accompany shipments of Hazardous Waste or Texas Class 1-Industrial Solid Waste transported on public roads or thoroughfares.

Mixed Waste – A radioactive waste that is also a hazardous waste.

Recyclable Materials – Wastes that are recycled. Recycled material is used, reused, or reclaimed.

Reclaimed Material – Material that is processed or regenerated to recover a usable product. Examples: Recovery of lead from spent batteries, or regeneration of spent solvent.

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Satellite Accumulation Area – An area, system, or structure used for temporary accumulation of hazardous waste prior to transport to a central accumulation area. For an area to be considered to be a satellite accumulation area, the area must be at or near the point of generation, and under the control of the person generating the waste.

Small Quantity Generators (SQG) – Anyone who generates more than 220 lbs (100 kilograms), but less than 2,200 lbs (1,000 kilograms), of hazardous waste per month.

Solid Waste – Any garbage, refuse, sludge from a waste treatment plant, water treatment plant, or air pollution control facility or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, municipal, commercial, mining and agricultural operations, and from community and institutional activities.

Storage – The holding of solid waste for a temporary period, at the end of which the waste is processed, disposed of, recycled, or stored elsewhere.

Transporter – Any person who conveys or transports municipal hazardous waste or industrial solid waste by truck, ship, pipeline or other means.

Universal Waste – Any hazardous waste subject to 40 CFR Part 273 and TAC 335.261 to include:

- A. **Batteries** including lead-acid that are not managed under 40 CFR 266, Subpart G;
- B. **Pesticides** managed as part of a waste pesticide program;
- C. **Mercury** containing equipment (such as thermometers and thermostats);
- D. **Mercury containing lamps** (e.g. fluorescent, mercury vapor, sodium vapor, and metal halide);
- E. **Paint and Paint Related Material** in accordance with TCEQ regulations.

Used Oil – Used oil is oil derived from crude or synthetic oil which has been used as a lubricant, coolant, heat transfer or hydraulic fluid, or similar; and has become contaminated through use.

Waste – Any material for which there is no use and is to be discarded as valueless

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Introduction

The purpose of this document is to inform faculty, staff, and students at Texas Woman's University (TWU) of Federal and State waste disposal regulation and to define the TWU Regulated Waste Management Program. This program applies to all TWU operations.

The Federal Resource Conservation and Recovery Act of 1976 (RCRA) sets strict standards for the "cradle-to-grave" management of hazardous wastes. These standards are written and enforced by the U. S. Environmental Protection Agency (EPA). The EPA has delegated to the Texas Commission on Environmental Quality (TCEQ) the responsibility of tracking hazardous waste generation and disposal within the state of Texas. Hazardous wastes must be shipped by licensed waste transportation companies to permitted treatment, storage and disposal facilities (TSDf). The regulations require the generator maintain detailed documentation concerning the generation, composition, and fate of all hazardous wastes. In 1984, the Hazardous and Solid Waste Amendments (HSWA) to RCRA tightened the hazardous waste rules. It also brought the concept of waste minimization to the forefront as the preferred method of controlling hazardous waste production.

In order to comply with the various environmental laws, good safety practices, and to avoid future liabilities, the University will follow a conservative approach in the handling of all hazardous materials and wastes produced on campus. The person, laboratory, shop, studio, or any other work area that produces an unwanted material is responsible for ensuring that the material is properly identified, handled and labeled in accordance with this program. Risk Management is charged with determining the classification of the material and then ensuring that all regulated wastes generated on campus are disposed of in a proper and responsible manner.

TWU's Denton campus is classified as a "Small Quantity Generator" of hazardous waste; the Dallas and Houston campuses are classified as "Conditionally Exempt Small Quantity Generators" and must comply with the State and Federal regulations for waste disposal associated with those classifications.

As a SQG, a generator must:

- Notify the TCEQ and EPA of hazardous waste generation;
- Identify all hazardous waste generated;
- Send the hazardous waste to an approved hazardous waste facility;
- Store hazardous waste no more than 180 days;
- Not accumulate more than 13,200 lbs (6000 kg) of hazardous waste on site at any time;
- Submit annual summary reports to the State of Texas.

As a CESQG, a generator must:

- Identify all hazardous waste generated;
- Not accumulate more than 2,200 lbs (1000 kg) of hazardous waste on site at any time;
- Send the hazardous waste to an approved hazardous waste facility.

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Both the TCEQ and the US Environmental Protection Agency (EPA) have the authority to inspect TWU's hazardous waste management program for compliance.

All hazardous or otherwise regulated waste must be transported to an authorized off-site facility for further storage, treatment, and/or disposal. It is illegal to dispose of hazardous chemical waste by dilution, evaporation, or dumping it into the sanitary sewers, storm water drains, or into the local landfill. Risk Management personnel will collect, transport, and store hazardous chemical waste on campus prior to final disposal. In addition, Risk Management will provide technical information and assistance to individual generators and maintain permanent records of all hazardous chemical waste transportation and disposal.

Hazardous/Regulated Waste Disposal Program

Individuals or departments generating wastes are responsible for following this procedure, including properly identifying the wastes generated with assistance from Risk Management, and for assuring that their employees are trained in and follow proper waste procedures. The following procedures are intended to assure compliance with applicable Federal and State regulations for the proper management of hazardous/regulated wastes and to reduce adverse effects to human health and the environment.

Hazardous Waste Determination

Prior to disposal of any wastes, generators (with assistance from Risk Management) must determine whether the material meets the definition of a hazardous waste, or other regulated waste.

A material is "hazardous waste" if it meets one or more of the following:

1. It is a material listed on the [EPA Hazardous Waste Lists](#) (see below).
2. It is a mixture or solution containing a listed material and a non-hazardous chemical.
3. It has one or more of the following characteristics:
 - A. Ignitability (flashpoint <140 F or supports combustion);
 - B. Corrosivity (pH ≤2 or ≥12.5);
 - C. Toxic (wastes that contain chemicals identified in the [EPA Hazardous Waste Lists](#) with waste codes D004-D043 in concentrations above certain regulatory limits. The concentration of these chemicals in a waste is determined through the "Toxicity Characteristic Leaching Procedure" or TCLP);
 - D. Reactivity (e.g., responds violently to air or water, cyanides, explosives, unstable chemicals);

Electronics are commonly overlooked as potential hazardous waste. Electronics regularly fail the TCLP testing due to the solder and other circuit board components. Therefore, TWU will assume that electronics are hazardous unless TCLP testing is conducted. However, many of the hazardous waste management rules do not apply to materials that are sent for recycling/reclamation. Contact Risk Management for additional assistance.

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Other Regulated Waste

Even if a material is not determined to be a hazardous waste under EPA regulations, it may be regulated under Texas regulations or local landfill disposal prohibitions and need to be disposed of through a licensed facility. Applicable wastes Texas regulates include the following:

- Containers that contained hazardous/regulated waste greater than 5 gallons in size that have not had all residues removed and rendered unusable;
- Asbestos-containing material;
- Polychlorinated biphenyls (PCBs);
- Some petroleum wastes containing more than 1,500 ppm of total petroleum hydrocarbons;
- Solids that might cause fires or pose other hazards;
- Wastes containing toxic chemicals over certain Texas-specific thresholds (via TCLP testing)

Texas classifies waste they regulate above and beyond the federal regulations as Class 1, 2 & 3; Class 1 which has the highest health and/or environmental risk and Class 3 has the least.

In addition, waste streams that are non-hazardous and not regulated under the Texas rules, **but contain any free liquids are not permitted to be disposed of as municipal waste** (i.e. normal trash), and must be disposed of through Risk Management.

General Requirements

1. Most waste materials fall under the applicable waste regulations as soon as they are generated. However, unused products become a "waste" when the individual generator determines that it is no longer useful and should be discarded.
2. Non-hazardous/non-regulated waste may be disposed of using the sanitary sewer or regular trash. Additional information about non-hazardous waste disposal can be obtained from Risk Management.
3. Hazardous chemicals can be treated to reduce the hazard or the quantity of waste in the laboratory **ONLY IF** the treatment procedure is a **necessary component** of the experimental protocol. Otherwise the chemicals must be disposed of as is.
4. Gas cylinders should be returned to the manufacturer or distributor whenever possible. Contact Risk Management for disposal of non-returnable cylinders as hazardous waste.
5. Photographic processing waste containing silver (generally the fixer waste) must be disposed as hazardous waste. Alternately, the fixer waste can be treated to remove the silver from the waste prior to discharge into the sanitary sewer (contact Risk Management for assistance). Photographic lab effluent that does not contain silver and is not otherwise hazardous/regulated may be discarded via the sanitary sewer system.

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6. Chemical waste that is of an "unknown" composition must be analyzed to determine the chemical identity, or disposed of a hazardous waste. The container must be labeled "unknown" for the chemical description.
7. "Mixed Waste" (includes both radioactive material and hazardous chemicals) will be initially routed through the Radiation Safety Officer.
8. Hazardous/regulated waste which is also a biomedical waste must be disposed of in accordance with both this procedure and the [Bloodborne Pathogens Exposure Control Plan](#).

Classification and Segregation of Hazardous Waste

All hazardous waste that is generated in the work area shall be segregated according to the hazard class and type of chemical waste.

1. Hazardous waste can be divided into the following hazard classes:
 - A. Halogenated solvents
 - B. Non-halogenated solvents
 - C. Acids (inorganic or organic)
 - D. Bases (inorganic or organic)
 - E. Heavy metals (silver, cadmium, lead, mercury, etc.)
 - F. Poisons (inorganic or organic)
 - G. Reactive (cyanides, sulfides, water reactive chemicals, peroxides, etc.)
 - H. Petroleum oil
 - I. Paint and Paint Related Material
2. Different classes of hazardous waste must not to be disposed of in the same waste container unless combination of the chemical waste is a necessary part of the process generating the waste.
3. Do not combine inorganic heavy metal compounds and organic waste solvents.
4. Do not combine non-hazardous waste with hazardous waste.
5. Dry materials (paper, rags, towels, gloves, or Kim Wipes™, etc.) contaminated with flammable or toxic chemicals must be double bagged in heavy-duty plastic bags and must be treated as hazardous waste. Do not use **biohazard bags** unless the waste is actually biomedical waste (refer to the [Bloodborne Pathogens Exposure Control Plan](#)).

Containment and Storage of Hazardous Waste

All containers used for hazardous waste must be constructed of appropriate material and all containers must be stored properly.

1. Individual waste generators shall assure that their hazardous wastes are accumulated in safe, transportable containers, properly labeled (see below), and stored to prevent human exposure or environmental release of the waste materials.

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2. Waste generators shall provide their own waste containers that are **compatible with the chemical contents (e.g., do not use metal containers for corrosive waste or plastic containers for organic solvent)**. Containers must be in good condition and not leak. All containers must have suitable screw caps or other means of secure closure. When large waste containers (>10 gallons, total volume) are required, contact Risk Management for assistance on selection and placement of appropriate container type and size.
3. Never overfill hazardous waste containers. Expansion and excess weight can lead to spills, explosions, and extensive environmental exposure.
 - A. Containers of solids must not be filled beyond their weight and volume capacity.
 - B. Jugs and bottles should not be filled above the shoulder of the container.
 - C. Cans (5 gallons or less) should have at least two inches of headspace between the liquid level and the head of the container.
 - D. Drums (larger than 5 gallons) should have at least four inches of headspace.
4. Containers must be closed or sealed to prevent leakage. ***All waste collection containers must be kept closed except when adding or removing material.*** This includes latching of funnels with lids that are installed in drums and similar arrangements. If the waste container is receiving waste from an automatic process the container must still be sealed in an appropriate manner (e.g. tubing from equipment that discharges into a container through an appropriate cap with an orifice for the tubing).
5. In addition to the above, generators must ensure that Satellite Accumulation Areas:
 - A. Are adequately secured to prevent unauthorized personnel from tampering with the waste containers.
 - B. Be accessible to Risk Management personnel.
 - C. Have hazardous waste separated from non-waste chemicals.
 - D. Contain less than 55 gallons of any one hazardous/regulated waste or one quart of acutely hazardous waste. If more than 55 gallons of waste is generated at a satellite area, the excess of 55 gallons must be dated and moved to a designated Central Accumulation Area within 3 days.
 - E. Containers may only be removed from a Satellite Accumulation Area if they are moved **directly** to a Central Accumulation Area designated by Risk Management.
 - F. Spill control equipment is available and accessible.
6. Central Accumulation Areas (<180-day storage) must meet the following requirements:
 - A. Central Accumulation Areas shall be designated and reported to the TCEQ by Risk Management.
 - B. All containers of hazardous/regulated waste in the Central Accumulation Areas must be marked with the TWU hazardous/regulated waste label (see below) including the date accumulation began. NOTE: The start date is when the first waste is poured/placed into the waste container at the Central Accumulation Area OR the date when the filled

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- container is moved from a Satellite Accumulation Area to a Central Accumulation Area.
- C. Waste may only leave the Central Accumulation Area if it is being accepted by an appropriately licensed waste hauler for transportation to an appropriate disposal or recycling facility.
 - D. Weekly inspections must be conducted at the Central Accumulation Areas by Risk Management personnel.
 - E. There must be sufficient aisle space to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the Central Accumulation Area.
 - F. Required equipment must be easily accessible and in working condition and is tested to ensure it is in working condition.
 - G. There must be a telephone or hand-held two-way radio in the Central Accumulation Area or nearby capable of contacting TWU Department of Public Safety dispatchers or other emergency responders.
 - H. There must be portable fire extinguishers and fire control equipment, including special extinguishing equipment (foam, inert gas, or dry chemicals) as necessary.
 - I. There must be spill control equipment available in the area or nearby.
 - J. There must be fire hydrants or other source of water (reservoir, storage tank, etc.) with adequate volume and pressure, foam producing equipment, automatic sprinklers, or water spray systems.

Labels and Labeling

All containers of hazardous waste must be labeled appropriately. The label pictured below is available from Risk Management and must be affixed to the container **prior to placing any hazardous waste in the container**. The label must be completed fully.

TWU HAZARDOUS/REGULATED WASTE
TEXAS WOMAN'S UNIVERSITY
DENTON • DALLAS • HOUSTON TWU Denton Campus EPA ID #TXR000079816

Waste ID: Dept: Contact:
Accum. Start Date: Quantity:
Waste Description:

Federal Law Prohibits Improper Disposal. If found, contact TWU Risk Management at 940-898-2924, the nearest police or public safety authority or the U.S. EPA

1. The date field does not have to be filled in immediately if the container does not leave the Satellite Accumulation Area. **However, once the container is full or is moved from the Satellite Accumulation Area, the label must be dated!** If it is a product that is no longer

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needed, the Accumulation Start Date is the date the item was deemed to no longer be needed.

2. Complete the "Waste ID" blank with a letter and sequential number. The letter should correspond to the department generating the waste; so items from the Chemistry department will begin all number designations with the letter C, Biology-B; Visual Arts-V; Kinesiology-K, etc. For example, Chemistry might have bottles of waste numbered from C-1 through C-25.
3. The "Contact" blank should list someone with knowledge of the waste who can answer questions if necessary.
4. List full chemical names of the waste(s) in the container on the "Waste Description" blank, **not** just the process that created the waste. If you cannot fit all of the chemical names on the label, insure that you have a basic description and the full description is maintained in a spreadsheet or similar corresponding to the Waste ID listed on the label. If you need to dispose of an unknown material, write "Unknown" on the item description.
5. For "Quantity" list the weight and/or total volume of the container, not the estimated amount currently in the container, i.e., a 4 liter container which is only half full is listed as 4 liters, not 2 liters.

Disposal

All hazardous and regulated waste generated at TWU must be disposed of according to state and federal regulations through Risk Management.

1. Waste containers that are full and/or ready for disposal must be properly labeled as per the above.
2. Provide Risk Management with a list of the wastes that are in the Satellite Accumulation Areas. Contact Risk Management to receive a copy of the waste inventory log. Upon receiving the inventory log, Risk Management will schedule a time to collect the waste. This will generally occur at the end of each semester unless it is necessary to move the waste sooner due to health and safety concerns.
3. Risk Management will not pickup containers with improper caps, leaks, outside contamination, improper labeling, or improperly logged or unlogged containers.
4. It is **illegal** to dispose of hazardous/regulated waste in any of the following ways:
 - A. Disposal through the sanitary or storm sewers (some wastes are permitted to be disposed of through the sanitary sewer, but only in accordance with our wastewater discharge permits and/or local regulations – contact Risk Management to ensure you meet these requirements).

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- B. Intentional evaporation or solidification.
 - C. Any treatment or neutralization that is not a necessary step of the waste generating process.
 - D. Disposal in the regular trash.
5. Contact Risk Management to pick up empty containers that are no longer needed. Broken containers must be placed in a broken glass container or other sturdy container that will prevent injury to custodial and trash handling personnel.

Universal Waste

Universal Waste is a category of hazardous waste that includes materials that are very common and represent a lower human health risk. The regulatory requirements for these materials have been reduced as a result. Materials that can be managed as universal waste include:

- A. Batteries (that meet the hazardous waste criteria, other than lead-acid batteries that are being recycled)
- B. Pesticides
- C. Mercury Containing Equipment (such as thermometers and thermostats);
- D. Mercury Containing Lamps (e.g. fluorescent, mercury vapor, sodium vapor, and metal halide);
- E. Paint and Paint Related Material

The general requirements for managing Universal Waste are as follows:

- 1. Store waste in a way that prevents releases to the environment
- 2. Containers must be closed, structurally sound, compatible with the contents, and no sign of leaks/spills or wastes on the outside of the containers
- 3. Containers must be labeled "Universal Waste" and the name of the waste (e.g. Universal Waste Lamps)
- 4. Containers must be dated when the first waste was placed in the container, or other records indicating that the waste has **not been on site for longer than one year.**
- 5. Universal Waste must be disposed of through properly licensed hazardous or universal waste transporter and disposal or recycling firms.

Light bulbs represent the highest volume of Universal Waste at TWU. Waste bulbs are collected at the Electrical/Plumbing Shop within the Facilities Management Service Center on the Denton campus, and in the Facilities Management areas of the Dallas and Houston Campuses. Lamps must not be accumulated at any other locations. At the Denton campus electricians generally carry a box of waste lamps with them in their vehicle, and then deposit the box at the accumulation area in the electrical shop in the FMC Service Center. The boxes in their boxes must be labeled and dated when the first bulb is placed in the box, and kept closed. The Dallas and Houston campuses will have a similar procedure, but the bulbs will be immediately placed in the accumulation area within the Facilities Management area.

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Used Oil

Requirements for management of used oil are as follows:

1. Containers of used oil must be in good condition
2. Containers must be labeled "Used Oil"
3. Used oil must be disposed of via appropriately licensed used oil management firms
4. Used oil must not be mixed with other wastes or it must be managed in accordance with the rules applicable to the other waste
5. Additional requirements for oil (including used oil) management are listed in the TWU [Spill Prevention, Control, and Countermeasures Plan](#).

Used oil filters are also generally disposed of through licensed used oil management firms due to the difficulty of completely draining the filters. Rags and other sorbent materials containing used oil may be disposed of as general refuse if there are no free liquids. Contact Risk Management if there is any question about proper disposal of oil containing materials.

Source Reduction and Hazardous Waste Minimization

Hazardous waste regulations have evolved from emphasis on reduction to the prevention of environmental pollution. The Pollution Prevention Act of 1990 (Federal Regulation) made the prevention of pollution and reduction of waste generation, a national priority. The Texas Waste Reduction Policy Act (Senate Bill 1099 of 1991) required TWU to prepare and implement a [Pollution Prevention \(P2\) Plan for the Denton campus](#). The P2 Plan lists the specific commitments to reduction of hazardous waste generation that TWU has made, and projects that will be implemented to fulfill them.

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Emergency Procedures

TWU's [Hazard Communication Program](#) requires that TWU employees be informed of hazardous materials that they might use or be exposed to at work. In addition, the program includes training on handling spills and other emergencies. Safety Data Sheets (SDS) are a source of this information and must be maintained for all chemicals used or stored within a workplace. Special cleanup supplies shall be available and employees will be trained on how to use these supplies. Contaminated clothing, rags, absorbent materials, or other waste from cleanup of spills or leaks must be properly disposed of with the assistance of Risk Management.

Campus Emergency Contact Information

Dial Extension from Any Campus Phone:

TWU Department of Public Safety: x2911 (81-2911)

Risk Management: x2924 (81-2924)

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EPA HAZARDOUS WASTE LISTS