

# CAMPUS-WIDE WASTE MANAGEMENT PLAN

**Presented to:**



**Drew University  
36 Madison Avenue  
Madison, NJ 07940**

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## ACRONYM LIST

AICUNJ	Association of Independent Colleges and Universities of New Jersey
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
DIY	Dot-It-Yourselfer
DOT	Department of Transportation
EHS	Environmental Health and Safety
EPA	Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
HWMP	Hazardous Waste Management Plan
ICR	Ignitable, Corrosive or Reactive
LDR	Land Disposal Restriction
LQG	Large Quantity Generator
LQHUW	Large Quantity Handler of Universal Waste
NJ-DEP	New Jersey Department of Environmental Protection
RCRA	Resource Conservation and Recovery Act
SAA	Satellite Accumulation Area
SQG	Small Quantity Generator
SQHUU	Small Quantity Handler of Universal Waste
RCRA	Resource Conservation and Recovery Act
TCLP	Toxicity Characteristic Leaching Procedure
TSDF	Treatment, Storage or Disposal Facility

## GLOSSARY OF TERMS

- Abandoned*** Materials that are disposed of or thrown away; burned or incinerated; or accumulated, stored or treated (but not recycled) before or in lieu of being disposed of, burned or incinerated.
- Biohazardous Waste*** See Medical Waste
- Corrosivity*** This characteristic identifies solid wastes that have either of the following properties:
- it is aqueous and has a pH  $\leq 2$  or  $\geq 12.5$ ; and
  - it is a liquid and corrodes steel at a rate greater than 0.25 inches per year at a test temperature of 130°F (55°C).
- Hazardous Waste*** A waste, when not properly handled or disposed, may present an unreasonable or substantial risk to human health or the environment. A solid waste qualifies as a hazardous waste if it falls under any one of the four (4) categories listed below and does not qualify for any of the exemptions or exclusions listed under Federal and/or State regulations.
- 1) A waste or waste generation process which has been specifically identified by EPA to be "**listed**" hazardous waste. Included under this category are products in their pure or off-specification form which are discarded and contain specific hazardous constituents.
  - 2) Those solid waste and waste generation processes that have not been specifically listed by EPA but exhibit one or more of the four **characteristics** of hazardous waste irrespective of the manufacturing produces from which it is generated. The four characteristics are: ignitability (I), corrosivity (C), reactivity (R), or toxicity (T).
  - 3) It is a **mixture** of a listed hazardous waste and any other material, or is a **mixture** of a characteristic waste and any other material, provided the mixture still exhibits the characteristic (i.e., mixture rule).
  - 4) It is a residue that is "**derived from**" the treatment, storage, or disposal of a listed waste.
- Ignitability*** This characteristic identifies solid wastes that are capable of causing a fire or exacerbating a fire once it has started during routine handling of material. These waste include:
- *Liquids*: Other than an aqueous solution containing less than 24% alcohol by volume and has a flashpoint of less than 140°F (60°C);
  - *Non-Liquids*: Capable under standard temperature and pressure of (1) causing fire through friction, absorption of moisture or spontaneous chemical changes and (2) when ignited burn so vigorously and persistent that it creates a hazard;
  - *Ignitable Compressed Gases*: As defined under 49 CFR 173.300; and
  - *Oxidizers*: As defined in 49 CFR 173.151.
- Inherently Waste-Like*** Materials that are inherently waste-like are materials that pose significant threats to human health and the environment if mismanaged (i.e., too hazardous to be unregulated). These materials have been designated with the EPA Hazardous Waste Codes F020 to F023 and F026 to F028, and secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed hazardous waste.
- Medical Waste*** "Medical waste" means any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, in the production or testing of biologicals, that is not excluded or exempted under N.J.A.C 7:26-3A6(b) or in home self-care. The term does not include any hazardous waste identified or listed under 40 CFR Part 261.
- Cultures and Stocks  
Cultures and stocks of infectious agents and associated biologicals: cultures from medical or pathological labs; cultures and stocks of infectious agents from research labs; wastes from the production of biologicals; discarded live and attenuated vaccines; culture dishes and devices used to transfer, mix, or inoculate cultures

#### Pathological Wastes

Human pathological wastes including tissues, organs, and other body parts and fluids that are removed during surgery or autopsy or other medical procedures; specimens of body fluids and their containers

#### Human Blood & Blood Products

Liquid waste human blood; items saturated, dripping or caked with human blood (including serum, plasma and other blood components) which were used or intended for use in either patient care, testing and laboratory analysis, or the development of pharmaceuticals. Intravenous bags, soft plastic pipettes and plastic blood vials are also included in this category.

#### Sharps

Sharps that were used in animal or human patient care or treatment in medical research or industrial laboratories. Includes hypodermic needles, all syringes to which a needle can be attached (with or without the needle), Pasteur pipettes, scalpel blades, blood vials, carpules, needles with attached tubing, and broken or unbroken glassware (slides and coverslips) that were in contact with infectious agents.

#### Animal Waste

Contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research, production of biologicals, or testing of pharmaceuticals.

#### Isolation Waste

Biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans or animals that are isolated to protect others from certain highly communicable diseases.

#### Unused Sharps

Unused, discarded sharps that were intended to be used. Includes hypodermic needles, suture needles, syringes and scalpel blades

**Reactivity** This characteristic identifies wastes that are unstable and may react violently or explode during stages of their management. Solid wastes that exhibit any of the following properties are classified as reactive wastes:

- normally unstable and readily undergoes violent change without detonating;
- reacts violently with water;
- forms potentially explosive mixtures with water;
- generates toxic gases, vapors or fumes in a sufficient quantity to pose a danger when mixed with water;
- cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or environment;
- capable of detonation or explosive reaction if it is subjected to a strong initiations source or if heated under confinement;
- readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; and
- forbidden explosive as defined by DOT regulations or is a Class A explosive, or a Class B explosive as defined in DOT regulations.

**Recycled** Reused or reclaimed according to the following Table.

RECYCLED MATERIALS WHICH ARE SOLID WASTES				
Secondary Material Categories	Use Constituting Disposal [§261.2(c)(1)]	Energy Recovery/Fuel [§261.2(c)(2)]	Reclamation [§261.2(c)(3)]	Speculative Accumulation [§261.2(c)(4)]
Spent Materials	* <sup>1</sup>	*	*	*
Sludge (listed in 40 CFR Part 261.31 or 261.32)	*	*	*	*
Sludge exhibiting a characteristic of hazardous waste	*	*	--- <sup>4</sup>	*
By-products (listed in 40 CFR Part 261.31 or 261.32)	*	*	*	*
By-products exhibiting a characteristic of hazardous waste	*	*	--- <sup>4</sup>	*
Commercial chemical products <sup>2,3</sup> listed in 40 CFR 261.33	*	*	--- <sup>4</sup>	--- <sup>4</sup>
Scrap metal other than excluded scrap metal (see 40 CFR 261.1(c)(9))	*	*	*	*
Notes: <sup>1</sup> Solid wastes are noted with an "*". <sup>2</sup> Commercial chemical products are not solid wastes if land disposal is their ordinary manner of use. <sup>3</sup> Commercial chemical products are not solid wastes if they are themselves fuels. <sup>4</sup> Materials noted with a "---" are not solid wastes.				

**Solid Waste** A solid waste, which can be a solid, liquid, semi-solid or gaseous material, is defined as any discarded material that is not specifically excluded. A "discarded material" is any material which is either:

- abandoned (i.e. thrown away or disposed of);
- inherently waste like;
- military munitions; or
- recycled in a manner constituting disposal, burning for energy recovery, reclaimed or over accumulated.

**Toxicity** This characteristic measures the potential of a waste to leach toxic constituents into ground water when land disposed assuming mismanagement or co-disposal in an unlined, municipal solid waste landfill. Compounds which are analyzed under the current Toxicity Characteristic Leaching Procedure (TCLP) test and their regulatory levels are listed in Appendix A.

## 1.0 INTRODUCTION

This plan was originally developed by HRP Associates, Inc on behalf of Drew University and subsequently modified by Drew University to establish a program to comply with the regulations set forth in 40 CFR Subchapter I: Solid Waste and New Jersey Hazardous waste regulations N.J.A.C. 7:26G-6 et seq., which reference 40 CFR Part 262 of the Federal hazardous waste regulations with some exceptions and/or changes.

Drew University is a large quantity generator (LQG) of hazardous waste with EPA ID #NJ002561868. A LQG is one who generates 1000 or more kilograms (2200 pounds) of hazardous waste in a calendar month or 1 kilogram or more of acute hazardous waste in a calendar month. Additionally, a LQG generates 100 kilograms (220 pounds) or more of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill of any acute hazardous waste in a calendar month.

Drew University manages some of its applicable hazardous waste as Universal Waste. This allows for longer storage times and the reduced burden of regulations on wastes such as spent fluorescent tubes, batteries and mercury containing equipment, and waste consumer electronics or E-waste. Drew University is a Large Quantity Handler of Universal Waste (LQHUW) as defined as generating universal wastes, not treating or recycling on site, in amounts more than 5000 kilograms per year.

This Waste Management Plan (WMP) addresses the total life cycle of hazardous waste, universal waste, medical waste, and unknown waste generated at and disposed by Drew University. Within this plan is guidance on classifying and analyzing waste, storing hazardous waste, inspecting hazardous waste storage areas, disposing hazardous waste, complying with a waste minimization program, training employees on hazardous waste, establishing contingency plans, and preparing any state or federal required reporting.

This plan is to be administered by employees Drew University and by contractors working on their behalf.

### 1.1 LIMITATIONS

This plan is not intended to address the safe handling of chemicals in laboratories as required under 29 CFR Part 1910.1450. Drew University has prepared a Chemical Hygiene Plan under a separate cover which addresses the safe handling, storage and usage of chemicals in laboratories.

### 1.2 LOCATIONS

Copies of this WMP are located in the following areas on campus.

1. Facilities Department (Pepin);



2. Art Department Chair's Office (Dorothy Young Center for the Arts)
3. Chemistry Chair's Office (Hall of Sciences).
4. An electronic version is available on the Drew Environmental Health and Safety Webpage

## **2.0 RESPONSIBILITIES**

It is the responsibility of all employees, students, and contractors working on behalf of Drew University to handle, store, and dispose of hazardous waste in a manner that is in compliance with all applicable state and federal regulations.

### **2.1 PROVOST**

Drew University's Provost has the ultimate responsibility for proper waste handling at Drew University and provides, along with other officers and administrators, support for efforts to minimize waste generation and comply with all applicable waste regulations. The Provost supervises and authorizes the faculty and staff to take steps necessary to carry out the objectives of the WMP including the following:

1. Approving the Waste Management Plan (WMP),
2. Monitoring the implementation of the WMP at all applicable levels of administration with Drew University.
3. Reviewing and adopting any proposed changes to the WMP.
4. Obtaining any required licensing, permits, or approval from local, state, and federal agencies to purchase, store, use, synthesize, administer, and/or dispose of any hazardous material, prescribed medication, or controlled substance.

### **2.2 ENVIRONMENTAL HEALTH AND SAFETY (EHS) OFFICER**

The Environmental Health and Safety Officer of Drew University is responsible for the day-to-day activities associated with hazardous waste management including, but not limited to:

1. Working with the appropriate personnel to evaluate, implement, and update the WMP on a routine basis.
2. Providing technical expertise and administrative support to the faculty and staff and direct inquiries to appropriate resources.
3. Aid in hazardous waste stream determinations.
4. Assisting the departments in ensuring that hazardous waste containers are appropriately labeled, handled, stored, and managed.
5. Conducting, or designating the conducting of, weekly inspections of centralized storage areas for Hazardous Waste (identified as the "Q-room" in the chemistry department), the Dorothy Young Art Center Loading Dock, Storage Cabinet in the Biology Dept Central Storage. the Inspection Form has been provided in Appendix C.

6. Acting as a liaison between campus hazardous waste operations and the Provost's office. Bring unresolved and potentially serious waste related issues to the Provost's attention.
7. Maintaining records and making them available to employees, administrative personnel, and state or federal officials.
8. Monitor use and disposal of laboratory chemicals.
9. Train, or coordinate the training of, all Drew University employees and other personnel who may handle, generate or prepare hazardous waste for shipment. This includes both RCRA Hazardous Waste Management Training and DOT Hazardous Materials Training.
10. Coordinating waste pickups, from all departments, and with off-site vendors.
11. Familiarizing oneself with the Chemical Hygiene Plan (CHP), which has been maintained under separate cover.

### 2.3 FACULTY AND STAFF

Faculty and staff, who have the responsibility of Environmental Health & Safety of a campus operations or the responsibility of instruction of students at Drew University, participate in the implementation of this WMP and overall proper waste practice by:

1. Informing and training students and workers on waste procedures as it applies to activities in their areas.
2. Aiding in waste stream determinations for waste generated by their activities.
3. Ensuring student and lab worker compliance with the WMP.
4. Before each lesson, teaching students about proper waste disposal as it applies to that day's activity.
5. Ensuring that all containers of hazardous waste are properly labeled, closed, and stored, and
6. Requesting assistance, if needed, from the Environmental Health and Safety Officer.

## 2.4 STUDENT AND LAB WORKERS

Students and lab workers participate in the implementation of this WMP and overall proper waste disposal:

1. Following all rules and procedures established in the WMP as communicated by staff and faculty.
2. Aiding in waste stream determinations for waste generated by their activities.
3. Requesting information and training if not sure about proper waste procedures.

### 3.0 HAZARDOUS WASTE GENERATOR STATUS

Each generator of hazardous waste must determine their generator status for each calendar month. This exercise is necessary to identify those regulatory requirements in which Drew University must comply. The generator status is determined by the sum of hazardous waste *generated* on site, not the amount shipped, in one calendar month.

There are three generator categories for hazardous waste and two categories for universal waste as defined in Table 1. Drew is a LQG of hazardous waste and its definition has been bold-faced in the table below.

**Table 1: Generator Status Defined**

Generator Category	Amount of Hazardous Waste Generated in a Month (unless otherwise noted)	Amount of Acute Hazardous Waste Generated in a Month	Amount of Residue or Contaminated Debris from a Spill of Acute Hazardous Waste
Conditionally Exempt Small Quantity Generator (CESQG)	< 100 kilograms (< 220 pounds)	< 1 kilogram (<2.2 pounds)	< 100 kilograms (< 220 pounds)
<i>Small Quantity Generator (SQG)</i>	< 1000 kilograms (< 2200 pounds)	< 1 kilogram (<2.2 pounds)	< 100 kilograms (< 220 pounds)
<b>Large Quantity Generator (LQG)</b>	<b>≥ 1000 kilograms (&lt; 2200 pounds)</b>	<b>≥ 1 kilogram (&lt;2.2 pounds)</b>	<b>≥ 100 kilograms (&lt; 220 pounds)</b>
<i>Small Quantity Handlers of Universal Waste (SQHUW)</i>	< 5000 kilograms of Universal Waste (< 110,000 pounds) Per Year	N/A	N/A
<b>Small Quantity Handlers of Universal Waste (SQHUW)</b>	<b>≥ 5000 kilograms of Universal Waste (≥ 110,000 pounds) Per Year</b>	N/A	N/A

### 3.1 REQUIREMENTS

Drew University is a registered Large Quantity Generator (LQG) of hazardous waste. By operating as a LQG, Drew University must:

1. Make hazardous waste determinations on all solid wastes and maintain those records for at least 3 years from the date the waste was last shipped (see Section 4.0 of this plan);
2. Obtain an EPA Identification number (see Section 3.2 of this plan);
3. Use a manifest for all off-site shipments of hazardous waste (see Section 7.0 of this plan);
4. Mark (label) each container of hazardous waste with appropriate labels including the words “hazardous waste” and “other words that identify

the contents of the containers such as the chemical name” (see Section 5.0, and Appendix B of this plan);

5. Not accumulate waste on site for more than 90 days, unless in a designated satellite accumulation area (see Section 5.0 of this plan);
6. Place the waste in appropriate containers, tanks, drip pans or containment buildings (see Section 5.0 of this plan);
7. Establish and document emergency preparedness procedures and contingency plans (see section 10.0 of this plan);
8. Conduct annual hazardous waste management training for those employees who handle and manage the handling of hazardous waste (see section 9.0 of this plan); and
9. Perform weekly inspections of the 90day hazardous waste storage area (see section 6.0 of this plan).

Drew University is a small quantity handler of universal waste and as such must:

1. Store universal waste in containers or packages that are structurally sound and adequate to prevent breakage;
2. Select containers compatible with the universal waste;
3. Ensure containers are closed except when adding or removing waste;
4. Label containers with the words “Universal Waste” and other descriptive words such as “Universal waste – lamps,” “Universal Waste – batteries,” or “Universal Waste – mercury containing devices;” or “Universal Waste – electronic devices” and
5. Store waste for no more than 1 year from the date waste was first placed in the container.

### 3.2 EPA ID NUMBER

Drew University has notified the state of New Jersey of its waste status by email and also by submitting EPA Form 8700-12.

The EPA ID number for the campus of Drew University is:

Campus	EPA ID Number
Drew University	NJD002561868

### 3.3 MANIFESTING

Prior to any off-site shipment of hazardous waste from Drew University, a hazardous waste manifest is completed and accompanies the off-site shipments.

The hazardous waste manifest is presented on 8½” x 11” paper and contains six (6) copies. Once the waste is loaded on the truck for

shipment, the designated appointee from Drew University prints his/her name, signs his/her name and dates the manifest. At that time, the truck driver transporting the waste prints his/her name, signs his/her name and dates the manifest. Drew University maintains one copy of the manifest. The six (6) copies of the manifest are distributed as follows:

- Copy 1: When the manifest is completed by the Treatment, Storage and Disposal Facility (TSDF), he mails this copy to the state where the TSDF located.
- Copy 2: When the TSDF has completed this section of the manifest, he mails this copy to the state where the waste was generated.
- Copy 3: When the TSDF has completed this section of the manifest, he mails this copy back to Drew University for their records.
- Copy 4: When the TSDF has completed this section of the manifest, he keeps this copy for his records.
- Copy 5: When the Transporter has completed his section and transfers the waste to the TSDF, he keeps this copy for his records.
- Copy 6: When Drew University and the Transporter have completed their sections of the manifest (including signatures) and the hazardous waste has been transferred to the vehicle, Drew University keeps this copy of the manifest for their records.

When Copy 3 of the manifest is returned to Drew, it is attached to Copy 6 and any other records associated with the shipment (i.e. LDR, emergency response information, etc) and must be retained on-site for a minimum of three (3) years. The original manifest must be retained by the EHS officer with a copy retained by the generating department.

If Copy 3 is not returned to Drew within forty-five (45) days, Drew University must submit an Exception Report to the NJ-DEP including a legible copy of the manifest (Copy 6) with a note stating the signed TSDF manifest (Copy 3) is missing. Legal council should be consulted if an exception report is necessary.

*Note: For an off-site shipment of medical waste and universal waste a uniform manifest can be used, but at a minimum a bill of lading, vendor manifest, or shipping paper must be used to document the off-site shipment.*

### 3.4 LAND DISPOSAL RESTRICTIONS (LDR)

Hazardous waste that is restricted from land disposal (see 40 CFR Part 268.7(a)(4)), must comply with the following:

1. If a hazardous waste is subject to LDR and does not meet applicable treatment standards, Drew University must submit a one-time written notice to each treatment, storage, or disposal facility which receives the initial shipment of waste. This one-time notice accompanies the manifest and must include the information listed below. No additional notices are required unless the waste or receiving facility changes.
  - EPA hazardous waste code(s)
  - Identification of the waste as a wastewater or non-wastewater
  - Manifest number associated with the waste shipment
  - Waste analysis data (if available)
  - For certain wastes, any additional hazardous constituents present
  - Where hazardous debris is to be treated by an alternative technology under Section 268.45, a statement to that effect and the contaminants subject to treatment.
2. If the waste meets the applicable treatment standards, Drew University must submit a notice one-time and signed certification stating that the waste meets the required treatment standards to each treatment, storage or disposal facility which receives the initial shipment of waste. The notice must include the items listed above and the certification, which must be signed by an authorized representative.

Records of the LDR must be retained with the copy of the waste manifest by the EHS Officer. Typically, the hazardous waste vendor used by Drew University generates the LDR. However, Drew University is ultimately responsible to ensure that the LDR is completed and maintained with the manifest in University files.



## 4.0 WASTE IDENTIFICATION, CHARACTERIZATION, AND ANALYSIS

### 4.1 HAZARDOUS WASTE

Drew University has identified all known hazardous waste streams which have been generated on campus. Table 2 identifies a general description of the waste, the EPA waste code associated with the waste and a list of where on campus that waste is generated.

**Table 2: List of Routine Hazardous Waste Generated at Drew University**

General Hazardous Waste Description	EPA Waste Code	Process/ Department Generating Waste
Waste Alkali Metals Amides	D001, D003	Chemistry – routine or lab clean-out
Waste Amines Liquid Corrosive, Flammable	D001, D002	Chemistry – routine or lab clean
Waste Butylamine	D001, D002	Chemistry – routine or lab clean
Waste Caustic Alkali Liquids, N.O.S.	D002	Chemistry – routine or lab clean
Waste Corrosive Liquid Toxic, N.O.S.	D002, D008	Chemistry – routine or lab clean
Waste Corrosive Liquid, Basic, Inorganic	D002	Chemistry – routine or lab clean
Waste Corrosive Liquid, Flammable	D001, D002, F003	Chemistry – routine or lab clean
Waste Corrosive Liquid, Inorganic	D002	Chemistry – routine or lab clean
Waste Corrosive Liquid, N.O.S	D002	Chemistry – routine or lab clean
Waste Corrosive Liquid, Toxic, N.O.S.	D002, D008, D011	Chemistry – routine or lab clean
Waste Ethylene Diorite	U067	Chemistry – routine or lab clean
Waste Flammable Liquid Toxic, N.O.S.	D001, F003, F002	Chemistry – routine or lab clean
Waste Flammable Liquid, Corrosive, N.O.S	D001, D002, F003, F005	Chemistry – routine or lab clean
Waste Flammable Liquid, N.O.S.	D001, D038, F003, F005	Chemistry – routine or lab clean
Waste Flammable Liquid, Toxic	D001, D038, F005	Chemistry – routine or lab clean
Waste Flammable Liquid, Toxic Corrosive	D001, D002	Chemistry – routine or lab clean
Waste Flammable Liquids, Corrosive, N.O.S.	D001, F003, D002	Chemistry – routine or lab clean
Waste Flammable Liquids, N.O.S.	D001, U108, F003, F005	Chemistry – routine or lab clean
Waste Flammable Solid, Inorganic, N.O.S.	D001	Chemistry – routine or lab clean
Waste Hydrochloric Acid	U134, D002	Chemistry – routine or lab clean
Waste Mercuric Nitrate	D009	Chemistry – routine or lab clean
Waste Mercury Compounds, Solid, N.O.S.	D009	Chemistry – routine or lab clean
Waste Nitric Acid	D002	Chemistry – routine or lab clean
Waste Oxidizing Liquid, Toxic	D001, D008, D011	Chemistry – routine or lab clean
Waste Oxidizing Liquid, Toxic,	D001, D007,	Chemistry – routine or lab clean

General Hazardous Waste Description	EPA Waste Code	Process/ Department Generating Waste
N.O.S.	D008, D009	
Waste Oxidizing Solid, N.O.S.	D001	Chemistry – routine or lab clean
Waste Perchloric Acid	D001, D002	Chemistry – routine or lab clean
Waste Potassium Cyanide	P098	Chemistry – routine or lab clean
Waste Sodium Hydroxide Solution	D002	Chemistry – routine or lab clean
Waste Sulfuric Chloride, Poison by Inhalation	D002	Chemistry – routine or lab clean
Waste Toxic Liquid, Organic	D005, D007, D011, D022, D070, D079, U188	Chemistry – routine or lab clean
Waste Toxic Solid, Organic, N.O.S.	P075, P119	Chemistry – routine or lab clean
Waste Water Reactive Solid N.O.S.	D001	Chemistry – routine or lab clean
Waste Paint Related material and aerosol cans	D001, D003	Art and Theater Dept Department
Waste Flammable material, solid, N.O.S.	D001	Art Department, rags and absorbent material soaked in thinner and flammable substances
Waste Paint Related materials and aerosol cans	D001, D003	Facilities

If a new waste is generated at the college, then a determination must be made as to whether the waste is hazardous. Faculty and staff knowledge of the process generating the waste, any associated material safety data sheets (MSDS), and lab analysis are tools that can be used in this determination.

Solid Waste (see definition in glossary) is a hazardous waste when it is:

1. Listed (P-list, U-list, F-list, K-list)
2. Characteristic of hazardous waste (ignitable, corrosive, toxic, reactive),
3. Derived from hazardous waste
4. Mixed with hazardous waste

The P-list, U-list and F-list is available in Appendix A. The K-list is not included as it typically does not apply to college campuses. Definitions of the characteristics of hazardous waste are found both in the Glossary of Terms as well as incorporated into Figure 1, located in Appendix A.

Figure 1, Located in Appendix A, includes a flow chart and instructions to aid in waste determination and analysis. Complete waste stream determinations records should be forwarded to the EH&S Officer.

Rags, paper towels, and other absorbent material will be evaluated according to Figure 1 to determine if that material meets the definition of hazardous waste. (See Section 4.7 also.)

## 4.2 UNIVERSAL WASTE

According to NJAC 7:26A-7 the following hazardous waste streams may be managed as Universal Waste.

- Hazardous waste batteries (i.e. nickel-cadmium, lead-acid, silver, magnesium, mercury, or thermal batteries);
- Waste or recalled pesticides;
- Mercury containing thermostats;
- Universal waste lamps (i.e. fluorescent lamps, exit sign lights, street lights);
- Mercury containing devices (i.e. mercury switches and mercury thermometers);
- Oil based finishes (i.e. oil-based paints, lacquers, stains, and aerosol paint cans); and
- Waste consumer electronics.

Drew University generates universal waste from the following locations/operations on campus, as identified in Table 3.

Table 3: List of Routine Universal Waste Generated at Drew University

Campus Operation/Location	Medical Waste(s) Generated
Pepin Service Center Sheds (facilities)	Used fluorescent bulbs, Used Ni-Cd batteries, used lead-acid batteries, waste mercury switches, Oil based finishes, waste pesticides
Media Resource Center (collection point for campus wide generation)	Computer related e-waste (monitors, CPU's, keyboards, printers)
Hall of Sciences	Mercury containing devices and mercury thermometers
Campus wide, lighting	Spent fluorescent lamps, spent exit sign lamps
Campus wide, batteries	Used Ni-Cd batteries, used lead-acid batteries

All generated universal waste on the Drew campus is shipped off-site to a regulated collection point or disposal facility. Waste manifests are provided for record retention by the EHS officer, with copies maintained by the generating department and or the EH&S Dept..

## 4.3 MEDICAL WASTE (BIOHAZARDOUS WASTE)

State regulation NJAC 7:26-3A.1 governs the management of medical waste. Drew University generates medical waste from the following locations/operations on campus, as identified in Table 4.

Table 4: List of Routine Medical Waste Generated at Drew University

Campus Operation/Location	Medical Waste(s) Generated
Health Services	Sharps, bagged medical waste
Hall of Sciences, (stock rooms and labs) Biology Microbiology and Psychology	Bagged waste including any item contaminated with Biosafety Level 2 or higher (as defined by CDC/NIH) organisms, including cultures/stocks, pathological wastes, Human blood and blood products, Animal waste/bedding (which may also be contaminated with pathogens or pharmaceutical products)
Hall of Sciences, chemistry and biology labs	Sharps, waste to be autoclaved
Athletic Center	Sharps and bagged waste

All Class 2 or higher generated medical waste or biohazard waste on the Drew campus is decontaminated and shipped off-site to a regulated facility. Waste manifests/tracking forms should be forwarded for record retention to the EHS officer, with copies maintained by the generating department. Only personnel with appropriate training may sign medical waste tracking forms.

#### 4.4 UNKNOWN WASTES

Occasionally, unknown wastes are generated. This may occur when waste is generated from a new process and the waste has not yet been analyzed as to its hazards or during inventory clean-outs when the original product label is no longer legible. Unknown waste presents a particularly dangerous threat since the hazards are not known. Unknown waste should be treated as hazardous waste until the waste can be characterized.

Professor or student knowledge of the process generating the waste as well as laboratory analysis can be used to identify the waste (Refer to Figure 1 in Appendix A). Lab analysis, and the associated cost, to perform on the unknown waste may include, but not necessarily include all of the following:

- Flashpoint/Ignitability (approximately \$50 per analysis)
- pH/Corrosivity (approximately \$10 per analysis)
- TCLP Volatiles (approximately \$110 per analysis)
- TCLP Semi-volatiles (approximately \$160-\$195 per analysis)
- TCLP Pesticides (approximately \$75-\$110 per analysis)
- TCLP Herbicides (approximately \$105-\$140 per analysis)
- TCLP Metals (approximately \$65-\$100 per analysis)

As with any hazardous waste, unknown waste must be labeled and stored properly. Unknown waste labels are available in Appendix B. Refer to Section 5.0 for the storage of hazardous waste. For unknown waste, the 90 day clock will start as soon as the waste is identified, not when it is confirmed hazardous. Typically, a waste stream determination can be completed by a commercial laboratory within 15 days.

#### 4.5 EMPTY CONTAINERS

Empty containers may be considered hazardous waste if not managed properly. For containers that have been utilized for the storage of acute hazardous waste (P-listed waste), the container must be *triple rinsed* to be considered empty and no longer hazardous waste. For non-acute hazardous waste (U-listed, F-listed, K-listed and characteristic waste) the container is considered empty if:

- All waste have been removed that can be removed;
- Less than 1 inch of residue remains in the container;
- No more than 3% by weight of the total capacity of the container remains in the container sized less or equal to 110 gallons; or
- No more than 0.3% by weight of the total capacity of the container remains in the container sized more than 110 gallons.

If containers are not “empty” per the requirements listed above, they must be treated as hazardous waste. Containers should be identified as “empty” to ensure proper disposal. Empty labels are provided in Appendix B.

#### 4.6 AEROSOL CANS

An aerosol can typically becomes waste when 1) the can has lost its spray nozzle before the contents have been completely used, 2) the aerosol can runs out of propellant before the contents have been completely used, 3) the generator no longer has a use for that product, or 4) the product has been completely used and the empty can remains.

Aerosols cans pose a unique hazardous waste determination problem due to the fact that they consists of three materials, each of which could be classified as a hazardous waste:

- The can itself;
- The liquid product contained in the can (characteristic or listed); and
- The gaseous propellant (reactive, that is, it is capable of detonation or explosive reaction if it is subjected to a strong initiating source *or it is heated under confinement*).

They can be managed in one of two ways:

- Recycled as a scrap metal (see below for requirements prior to meeting this exemption); or
- Disposed waste.

Drew has chosen to manage their waste spray cans as both a D001 hazardous waste by collecting the waste aerosol cans at strategic locations on campus including the DYAC and pepin Service Center. In the Theater shop there is a puncturing device and satellite containers for contents of the cans. (see next section)

#### 4.6.1 RECYCLING

In order to be able to recycle an aerosol can under the Scrap Metal Exemption, it must be free of significant liquid and propellant content. The can must be punctured using a specifically designed unit.

- a. Liquid content removal: the can must be punctured so that most of any liquid remaining in the can may flow from the can and drain (e.g. with punctured end down) and be collected. Then a waste determination must be performed on this collected liquid prior to disposal (i.e. a flammable paint would need to be collected in a container when punctured and identified as D001).
- b. Propellant removal: the puncturing unit must be fitted with a coalescing/activated-carbon filter which will vent the propellant. Because the propellant releases are no longer “contained gases”, they are not subject to RCRA but may be subject to CAA standards.

Since emptying aerosol cans that are to be recycled is part of a recycling process, the puncturing would not be considered as a treatment requiring a permit.

Once the above is accomplished, the punctured can can be sent off for recycling under the scrap metal exemption.

#### 4.6.2 DISPOSAL

Disposal of an aerosol can as a non-hazardous waste can only happen if:

- The can is empty according to 40 CFR 261.7 (or that the product it contains is non-hazardous), and
- The can itself is not reactive.

*Note: The reactivity characteristic of a can can only be removed by puncturing it and if a can is going to be punctured for disposal, it may require a treatment permit.*

Therefore, if it is determined that aerosol cans are to be disposed of and they do not meet the two requirements above, it is easier to assume them to be a hazardous waste and containerize them, dispose of them and manifest them appropriately.

Aerosol can puncturing devices may be used to completely empty aerosol cans and make them non-reactive. Punctured and drained aerosol cans meet the definition of an empty container and are exempt from management as hazardous waste management requirements. The contents of the aerosol can need to be evaluated to see if they need to be collected as hazardous waste when punctured.

#### 4.7 CONTAMINATED RAGS

Industrial rags (also called wipes, wipers, and rags) are leased fabric rags or disposable wipes used for general equipment cleaning and to clean oil, grease and dirt from parts.

Whether soiled wipes or rags are considered a hazardous waste as defined by the federal Resource Conservation and Recovery Act (RCRA) depends on the type of residues left on the wipe or rag after use. As with any other waste it is up to the generator to determine the regulatory status of each waste generated and manage them appropriately.

##### 4.7.1. DISPOSABLE WIPES

Used wipes destined for disposal are considered a RCRA hazardous waste if they contain any residue that is a RCRA hazardous waste such as many solvents. Disposals of wipes that are determined to be a RCRA hazardous waste must be managed in the same manner as any other RCRA hazardous waste. As with other wastes you generate, you retain liability for environmental contamination caused by soiled rags.

##### 4.7.2. LEASED RAGS

Leased rags which are not saturated (i.e., do not yield even one drop of free liquid solvents), are laundered, and are reused may be returned to an industrial laundry for cleaning. If you determine your leased rags are not a hazardous waste they do not have to be managed as a hazardous waste. If you determine your leased rags

are a hazardous waste they must be managed as a hazardous waste until picked up for laundering.

#### 4.7.3. REDUCING SHOP RAG CONTAMINANTS

It is important to minimize contamination of rags for the following reasons: to reduce health risks to workers, to reduce emissions of volatile organic compounds to the air, to improve effluent discharge from industrial laundries if you sue launderable rags, to decrease liability risks, and to save money by eliminating excessive solvent use. Repairers of Equipment can ease shop rag management concerns through minimizing solvent use and recycling waste solvent. Consider the following measures:

##### Reduce

- Scrape excess dirt and grime from parts before using solvents and rags.
- Reduce the need for cleaning – how clean is clean enough for your process?
- Reduce the amount of solvent used in cleaning through improved work practices.
- Some parts washers include a filter to extend solution life.

##### Substitute

- Use safer cleaners such as detergents wherever possible. Only use solvents when absolutely necessary.

##### Recycle

- Remove excess solvent from rags by wringing or in a press. Collect spent solvent for recycling.

#### 4.8 RECYCLING ON-CAMPUS

Currently Drew is actively recycling white paper, cardboard, plastic and glass on-campus. Receptacles have been placed in all campus buildings, including residence halls to aid in the collection of recyclables. The Facilities Department is responsible for the recycling programs on campus, and as such are responsible for collecting the smaller receptacles into larger on-site dumpsters or containers prior to final disposal disposition.



## 5.0 WASTE STORAGE

Hazardous waste must ultimately be placed in closed containers or tanks in containment structures, bins, or buildings. For the purposes of Drew University, the majority of waste is collected in containers, typically is small scale laboratory bottle (1 ounce to 5 gallons), but also 5, 30 and/or 55-gallon drums or pales. Drew University maintains both satellite accumulation areas (SAAs) and less than 90 day storage areas as identified in Table 5. Most SAAs are maintained within fume hoods.

**Table 5: Satellite Accumulation Areas for Collection of Hazardous Waste**

Location of Storage Area	SAA Or 90 Day	Types of Hazardous Waste Accumulated	SAA Responsibility
Hall of Sciences – “Q-room”	90 day	Various	Chemistry Dept Operations Manager or EHS Director
Dorothy Young Art Center Loading Dock	90 day	Various Paint Related Materials	Studio Art Technician & Gallery Coordinator/EHS Director
Biology Stock Room	90 Day	Various lab waste	Central Area Manager/EHS Director
Pepin Courtyard Sheds	90 Day	Various facility wastes	Facilities Staff/EHS Director
Chemistry Prep Room Hood (S219)	SAA	Various lab waste	Lab faculty & staff
First year chemistry lab (S221, hood #27)	SAA	Various lab waste	Lab faculty & staff
Organic Lab (S226, hood #9)	SAA	Various lab waste	Lab faculty & staff
Advanced Lab (S229, hood#14)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S334)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S333)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S332)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S331)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S330)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S329)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S328)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S324)	SAA	Various lab waste	Lab faculty & staff
R.I.S.E. (S322)	SAA	Various lab waste	Lab faculty & staff
Chemistry (207)	SAA	Various lab waste	Lab faculty & staff
Chemistry (209)	SAA	Various lab waste	Lab faculty & staff
Chemistry (213)	SAA	Various lab waste	Lab faculty & staff
Chemistry (224)	SAA	Various lab waste	Lab faculty & staff
Chemistry (225)	SAA	Various lab waste	Lab faculty & staff
Chemistry (227)	SAA	Various lab waste	Lab faculty & staff
Chemistry (234)	SAA	Various lab waste	Lab faculty & staff
Chemistry (236)	SAA	Various lab waste	Lab faculty & staff
DYAC – Paint Making Studio, Room 003	SAA	Paint related material	Art faculty & staff
DYAC – Paint Studio, Room 202	SAA	Paint related material	Art faculty & staff
DYAC Theater Shop	SAA	Paint related material	Art faculty & staff
Pepin Building Paint Shop	SAA	Paint Related Material	Facilities Staff
Hall of Sciences basement HVAC area	SAA	Paint related materials, boiler chemicals	Facilities Staff
Embury Boiler House/Grounds office	SAA	Various Facility Waste	Facilities Staff

## 5.1 SATELLITE ACCUMULATION AREAS

All SAA areas at Drew are maintained according to the regulations. It is recommended by not required by NJ State Regulations to inspect these areas weekly. However, if the owner does wish to inspect these areas, Examples of the weekly inspection logs to be performed and maintained are located in Appendix C.

Management of these SAA's include:

- Accumulating no more than 55 gallons of hazardous waste or 1 quart of acutely hazardous waste at any one time;
- Locating the SAA at or near the point of generation;
- Controlling the containers by the operator(s) of the generating process;
- Marking the containers with the words "hazardous waste" and other words identifying the contents of the container (example: Hazardous Waste – Used Halogenated Organic Solvents);
- Moving containers to the less than 90day storage area within 72 hours (3 days) of when the container is full;
- Closing containers except when adding or removing waste;
- Maintaining containers in good condition; and
- Ensuring containers compatible with the waste enclosed within.

Appropriate labeling of SAA's is an important component of hazardous waste compliance. Located within Appendix B, please find the approved labels to be used on all accumulated wastes stored in SAA's throughout Drew University's campus. If the satellite container is too small or oddly shaped to accommodate the labels provided, ensure that the same information is displayed by other means such as a hang tag.

## 5.2 LESS THAN 90 DAY STORAGE AREA

*Note: As a LQG, the regulations allow waste to be maintained on site for less than 90 days.*

Drew University maintains less than 90-day storage areas as identified in Table 5. These areas are clearly identified with signs indicating their function. These storage areas are maintained according to the regulations and are inspected on a weekly basis. An example of the monthly inspection performed is located in Appendix C.

Management of the less than 90 day storage area includes:

- Providing containment free of cracks, gaps and sufficiently impervious to contain leaks or spills;
- Elevating container or sloping containment base;
- Providing capacity to contain 10% of the volume of containers or volume of the largest container, whichever is greater;
- Preventing run-off into the containment system;

- Removing spilled or leaked waste in a timely manner;
- Posting “no smoking” signs;
- Maintaining adequate aisle space for inspections and movement of emergency equipment;
- Maintaining containers in good condition;
- Storing waste in compatible containers;
- Closing containers except when adding or removing waste;
- Locating ignitable or reactive waste a minimum of 50 feet from property line; and
- Separating incompatible waste by means of a dike or wall and not storing in the same container. (See Appendix E for Compatibility Chart)

### 5.3 UNIVERSAL WASTE STORAGE

Benefits of utilizing universal waste regulations for the management of some hazardous waste included less stringent regulatory requirements and longer storage times.

Drew University is large quantity handler of universal waste. Universal waste is collected in various areas around campus. Members of the Drew Community may place a work order in Facilities to have waste items removed. Additionally for removal of computer related materials the Media Resource Center should be contacted. On a routine basis, waste is moved by Facility Operations or MRC Personnel to either storage sheds behind the Pepin Service Center in the waste management area (Universal waste may be staged in the Pepin Service Center Courtyard sheds, Hannon House garage or Media Resource Center). Labels to be used for collection units of universal waste are available in Appendix B. Containers of universal waste should be closed except when adding or removing wastes. Dating the label as soon as the first item of waste is placed within the container is imperative as there is a one year storage limit on universal wastes. For batteries or mercury devices a clipboard with an accumulation log denoting periodic additions to storage bins is a good way to track the date requirements.

### 5.4 MEDICAL WASTE STORAGE

Biomedical waste will not be mixed with other wastes. Biomedical waste on Drew University is stored in a manner and location as to minimize exposure to the public; protect the waste from animals, wind and rain; and as to not provide a food source for insects and rodents.

Sharps are stored in rigid containers which are red or orange in color and identified with either the word “biohazard” or the universal symbol for biohazard (☠). These containers are to remain closed except when adding or removing wastes.

Biomedical waste, except for sharps, are placed in containers which are impervious to moisture and have the strength sufficient to preclude ripping, tearing or bursting under normal conditions. These containers remain closed except when adding or removing waste. These containers are red or orange in color and identified with either the word “biohazard” or the universal symbol for biohazard (☠). Class 1 (as defined by the CDC/NIH) medical waste should be decontaminated in a manner appropriate to the material and disposed in clear plastic bags in regular trash. Biomedical wastes consisting of recognizable human anatomical remains are not disposed of by landfilling.

Medical waste collection areas are located in the Biology Prep area near the autoclave (room 144), the outside medical Waste Collection room HSC loading dock.

## 6.0 WASTE STORAGE AREA INSPECTIONS

Drew University, or persons acting on behalf of Drew, perform weekly inspections and Central Accumulation Areas (less than 90 day storage areas). These inspections are performed by one knowledgeable in the regulations pertaining to hazardous waste and who has participated in annual RCRA Hazardous Waste Training.

Examples of the inspections performed are located in Appendix C of this plan. Completed inspections are maintained in the local area or building where the waste is stored copies may be sent to EHS Officer's environmental files for storage for three (3) years.

At the time of the weekly inspection of the Central Accumulation Storage areas (less than 90-day storage areas), all waste in the storage area will be accounted on the Hazardous Waste Accumulation Log (Appendix C). The accumulation date and the type of waste will be listed on the Accumulation Log. When the waste is shipped off site for disposal the date will be entered into the Accumulation Log. Use of this log will help ensure that waste is not accumulated for more than 90 days and to aid in counting waste as appropriate to determine the college's generator status.

## 7.0 WASTE DISPOSAL

All hazardous waste that is shipped off site is accompanied by a manifest, and as appropriate, a land disposal restriction (see Section 3.3 and 3.4). The manifest will list the names of the generator, the transporter, and the receiving facility along with their addresses, telephone numbers, and EPA ID numbers.

The generator's copy of the manifest which has the signatures of the generator and transporter will be retained by Drew University when the waste is shipped. Within 35 days, Drew University should receive the final copy of the manifest which contains the signature of the receiving facility. The original copy and the copy returned by the receiving facility is filed on site in the Drew University for three (3) years.

If Drew University does not receive the copy of the manifest back from the receiving facility within 35 days, Drew University will call the receiving facility to check the status of the waste shipment. After 45 days, if the waste has not been received by the receiving facility, an exception report must be filed with New Jersey Department of Environmental Protection.

Drew University uses an outside contractor to containerize, mark, label, manifest and ship hazardous waste. Drew University understands that they are ultimately responsible for their waste and that using the contractor does not relinquish them of their responsibilities as a generator of hazardous waste.

The activities of the outside contractor will be supervised and managed by the Drew EHS officer. The current vendors utilized by Drew University for waste disposal are:

Hazardous Waste:                   AWT Environmental Services Inc.  
  PO Box 128 Sayerville NJ  
  Mr. Timothy Roper 973 714 4537

  Veolia Environmental Services  
  1 Eden Lane, Flanders NJ 07836  
  Ms Beth A. Csipkay 973 691 7359

Medical Waste:                   SteriCycle  
  (973) 680-4840

  Veolia Environmental Services  
  1 Eden Lane, Flanders NJ 07836  
  Ms Beth A. Csipkay 973 691 7359

Universal Waste (pesticides, oil based paint, mercury containing materials):

Veolia Environmental Services  
1 Eden Lane, Flanders NJ 07836  
Ms Beth A. Csipkay 973 691 7359

Computers  
(E-waste):

Veolia Environmental Services  
1 Eden Lane, Flanders NJ 07836  
Ms Beth A. Csipkay 973 691 7359

AERC Recycling Solutions  
Eden Lane, Flanders, NJ 07836  
Toni Koenigsberg 973 691 3300

Monmouth Wire and Computer Recycling  
3250 Shafto Rd  
Tinton Falls, NJ 07753  
732 922-3320

URC Urban Renewall Corp  
224 Sussex Ave  
Newark, NJ 07103

Erevival, Gardfield , NJ

## 8.0 WASTE MINIMIZATION PROGRAM

Since 1984, LQGs of hazardous waste have been required to certify on their hazardous waste manifests that they have a “waste minimization program.” This certification reads as follows:

*I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transportation according to applicable international and national government regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgement of Consent.*

*I certify that the waste minimization statement identified in 40CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.*

40 CFR 262.27 Waste Minimization Certification reads:

*A generator who initiates a shipment of hazardous waste must certify to one of the following statements in Item 15 of the uniform hazardous waste manifest:*

*(a) “I am a large quantity generator. I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment;” or*

*(b) “I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.”*

Drew University will make every effort to reduce the amount of non-hazardous, universal, medical, and hazardous waste on campus. This will include, but not be limited to, maintaining an inventory control system to avoid the unnecessary accumulation of chemicals.

EPA has established guidance recommending six key elements that should be incorporated into a waste minimization program. These key elements are:



- Top management support;
- Characterization of waste generation and waste management costs;
- Periodic waste minimization assessments;
- Cost allocation system;
- Encourage Technology transfer; and
- Program implementation and evaluation.

Complying to regulations associated with being a large quantity hazardous waste generator, Drew University practices the key elements recommended by EPA in the following ways.

Key Element	Implementation
1. Top management support	<ul style="list-style-type: none"> <li>• This Waste Management Plan was requested by and submitted to the upper management of Drew University</li> <li>• Drew University trains appropriate employees annually on the waste generated and associated impacts resulting from the way associates conduct their work procedures.</li> </ul>
2. Characterization of waste generation and waste management costs	<ul style="list-style-type: none"> <li>• Waste is characterized according to Section 4 of this Plan.</li> <li>• Waste generation is accounted in the Waste Accumulation Log as described in Section 6 of this Plan.</li> <li>• Waste costs are maintained by the purchasing department of Drew University. Waste agreements and contracts are maintained in the Environmental Files.</li> </ul>
3. Periodic waste minimization assessments	<ul style="list-style-type: none"> <li>• Drew University continuously strives for process improvement and optimization to reduce waste and thus reduce costs.</li> <li>• Drew University recycles waste when possible.</li> </ul>
4. Cost allocation system	<ul style="list-style-type: none"> <li>• Drew University maintains invoices for not only the cost to dispose of hazardous waste, but also the cost of contractors to manage their hazardous waste activities.</li> </ul>
5. Encourage Technology Transfer	<ul style="list-style-type: none"> <li>• Drew University is a member of the Association of Independent Colleges and Universities of New Jersey (AICUNJ). Through the association, Drew University participates in a peer audit program where peers not only audit each other's campus, but also share best management practices, success stories, and opportunities for improvement.</li> </ul>
6. Program implementation and evaluation	<ul style="list-style-type: none"> <li>• As appropriate, opportunities to reduce waste and optimize efficiency are implemented. This element combines the principals of each of the elements listed above.</li> </ul>

## 9.0 HAZARDOUS WASTE TRAINING

*Note: Drew University, as a LQG, employees engaged in the handling of hazardous waste must be knowledgeable of hazardous waste procedures.*

RCRA hazardous waste training is conducted annually to those employees who manage and/or handle hazardous waste. A written description of the training provided along with the roster of the personnel attending the training is maintained on site for three (3) years or the time of the individual's employment, whichever is longer. The roster of attendees should include the trainee's name, job title as well as job description. Appendix D contains the roster to be used during training. Note that the regulations require written job descriptions for those trained. Job descriptions are available in the college's Human Resource Department. Copies of all training materials and classes completed will be maintained by the EHS officer.

Elements of the hazardous waste training will include:

- Hazardous waste determination;
- Manifests;
- Container labeling and securing;
- Waste storage;
- Waste inspections;
- Emergency procedures;
- Emergency equipment; and
- Emergency systems.

## **Hazardous Waste/Hazardous Material Contingency Plan**

### **10.0**

Drew University maintains a campus-wide Emergency Response Manual (ERM) which was prepared by the Risk Management Committee and last revised September, 2008 and is currently being update (Ocotober 2010) which contains the following sections:

- Reporting Emergencies;
- Evacuation Procedures;
- Civil Disturbances/Demonstrations;
- Explosions;
- Earthquakes;
- **Hazardous Waste/Hazardous Material Contingency Plan (Section I-to be added)**
- Electrical Power Loss;
- Inclement Weather (snow);
- Bomb Threats;
- Violent/Criminal Behavior;
- Fire;
- Psychological Crisis;
- Suicide/Death of Student.

The Hazardous Waste/Hazardous Material Contingency plan is maintained by Environmental Health & Safety section of the Facilities Dept. This plan is regularly reviewed and revised as necessary.

### **Hazardous Waste/Hazardous Material Contingency Plan Section I of Drew University's Emergency Response Manual (ERM) (October, 2010)**

#### **PURPOSE:**

Drew University has developed this section of Emergency Response Manual (ERM) to provide supplemental information relating to the preparation for responding to emergencies involving the release of hazardous waste, hazardous materials and oil in accordance with 40 CFR 112 and 40 CFR 265. This section, in conjunction with Drew's Spill Prevention Countermeasures and Control (SPCC) plan provides an organizational and procedural framework for the management of these types of emergency incidents. The Drew ERM covers several other emergencies that impact upon this specific section, including provisions for emergencies specifically related to fires, evacuations and response to other potential emergency situations.

#### **COMMUNICATIONS:**

A comprehensive communication plan in has been established for alerting the Drew Community to emergency incidents and is described in detail in Section C, "Communications" of the Drew ERM. Emergency communication information (phone numbers) are posted in all Hazardous Waste Central Accumulation Areas indicating contact information and 24 hour emergency phone numbers for the designated Emergency Response Coordinator.

**CONTENT:**

A description of emergency actions with respect to releases of non hazardous oil and hazardous waste that have the potential to impact soil and other parts of the environment are described in Drew's Spill Prevention, Control and Counter measures (SPCC) Plan. The SPCC plan includes facility descriptions, detailed responsibilities, and notifications and reporting requirements, inspections and responsibilities. Please refer to that manual for details in response to releases to oil and hazardous waste. Additionally, under EPA's "One Rule Plan", the information provided here and in the Drew SPCC plan will serve to provide much of the required information related to the emergency spill contingency plan response procedures.

The following additional information is provided to supplement the SPCC plan with respect to incidents involving hazardous waste/materials in order to ensure compliance with the requirements of 40 CFR 265.50-56 (Contingency Plans).

**SUMMARIZED RESPONSE PLAN:**

In the event of a sudden release of Oil, Hazardous Waste or Hazardous Material that results in an injury, fire or a volume of released material that exceeds the capability of those trained personnel to effectively and safely contain the spill, the response plan must be initiated and implemented in accordance with this Manual and the Drew SPCC plan. The basic response plan is summarized in the attached flow chart from the Drew SPCC Plan and Attachment #1 of this Section:

"EMERGENCY PROCEDURE SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL". Additionally the plan outlines the specific notification of the Fire Department/EMS in the event of a fire or related injury AND IMMEDIATE notification of the Public Safety Office x 4444 (973- 408- 4444), the Primary Emergency Response Coordinator (ERC) or his/her designees and the 24 hours New Jersey Department of Environmental Protection NJDEP Spill Hotline at **1-877 WARN DEP (1 877 927-6337)**.

The following Drew University Personnel are also designated for notification:

**Hazardous Waste/Hazardous Material Contingency Plan Emergency Response Coordinators and Contact Phone Numbers:**

**Primary - Chief Robert Lucid, Director Public Safety: 973 408- 3378**

**Alternate - Mike Kopas, Executive Director Facilities: 973-408-3580**

**Alternate (SPCC Plan Primary) - Mark Ostapczuk, Director Environmental, Health and Safety: 973-408-3079**

If the spill is of a small nature and trained personnel are available and they can safely do so, they should take the following immediate defensive actions to contain the spill, including, but not limited to diking, use of sorbent materials, solidification and blocking drains and protection of the surrounding environment. Spill response equipment and materials are available near all Central Accumulation Areas and oil storage locations. In accordance with Drew's SPCC plan portable spill kits should be immediately available during all oil tank filling operations. See Attachment # 2 for a listing of all Emergency Equipment locations and description

**IMMEDIATE/SPECIFIC ACTION IN RESPONSE TO A NON HAZARDOUS OIL RELEASE.** As described above, if the nature and volume of the oil spill allows, and it can be done safely, oil spill cleanup should be initiated immediately. Please refer to the Drew SPCC plan for detailed procedures.

## **PRE PLANNING/ARRANGEMENTS WITH OUTSIDE LOCAL RESPONDERS**

Drew University has a long standing relationship with both the Madison Police Department and Fire Department. Drew is part of the local 911 system and response time is normally several minutes. Both the Police Department and Fire Department are familiar with Drew's campus and have responded to numerous medical and other non hazardous material emergencies. The local hospital is Morristown Memorial a Level I trauma center and it is also only several minutes away. An update ERM will be sent to the local agencies when it its finalized. (See Attachment #3 for addresses and contact information and letters of agreement).

## **AGENCY NOTIFICATION PROCEDURES**

In the event the volume of the hazardous waste or other hazardous material release exceeds threshold quantities and or if oil is released to drains or the environment, the ERC shall report the incident to the New Jersey Dept of Environmental Protection (NJDEP) using the 24 Hour Spill Hotline **877 927 6337 (877 WARN DEP)**.

The following information shall be provided in the verbal report:

Name, title, affiliation, street address and telephone number (of reporter)

Location of release

Date/Time of release and when it was discovered and ended if applicable

Quantity (if known) Common name of material involved to the extent known

Action taken to contain/clean up release

Extent of any injuries

Name/Address of any person responsible for the release

If additional resources are required, the ERC or his representative shall contact the following Commercial Spill Clean-up Contractors: (Agreement with these vendors should be in place and updated as needed):

AWT Environmental Services (Agreement letter on file)

PO Box 128 Sayreville, NJ 732-613-1660

Veolia Environmental Services (Agreement letter pending)

1 Eden Lane

Flanders, NJ 07836

Phone: 800/426-2382

Fax: 973/691-7359

## **REPORT DOCUMENTATION**

All actions should be documented using the "Spill Incident Form" (Attachment #4)

## **ADDITIONAL/ATTACHED INFORMATION**

In accordance with the requirements of the 40 CFR 265 the following information/attachments are provided as a supplement to this section in the ERM:

- A. Emergency Procedure Spill and /or Release of Hazardous Material Flow Chart
- B. Listing and Description of Emergency Equipment located in buildings where hazardous waste is handled (fire extinguishers, spill control, etc).
- C. Outside Authority Contact Information and Letter of Agreements with Outside Responders
- D. Spill Incident Form
- E. Hazardous Waste Related Job Descriptions

## Outside Authority Contact Information and Letters of Agreement

In the event the Emergency Coordinator or designated alternate determines that the release of materials threatens human health outside the facility and evacuation may be necessary, he/she must also report his findings to the local authorities:

Authority	Phone Number
Director of Public Safety	Extension 3378
Drew University Office of Public Safety (i.e. Campus Security)	(973) 408-3379 or extension 4444 (Emergency)
Madison Police Department	(973) 593-3000 or 911
Madison Fire Department	(973) 593-3020 or 911
New Jersey State Police	(609) 882-2000
New Jersey DEP Spill Hotline	<b>877 927 6337 (877 WARN DEP)</b>
Borough of Madison Sewer Department	(973) 593-3045
Borough of Madison Water Department	(973) 593-3045



## **11.0 HAZARDOUS WASTE REPORTING**

### **11.1 EXPORT NOTIFICATIONS**

Drew University does not export hazardous waste so all associated reporting to the export of hazardous waste do not apply.

### **11.2 EXCEPTION REPORTS**

If hazardous waste shipped is not received by the receiving facility within 45 days of the ship date, then an exception report must be submitted to NJ-DEP. Exception reports should be maintained on site for 3 years. At the time that this Plan was being prepared, there has not been a need for an exemption report to be filed on Drew's behalf.

### **11.3 NEW JERSEY SPECIFIC REPORTS**

The state of New Jersey only requires a biennial report for LQGs of hazardous waste each even year for manifest activity during the previous odd year. A Biennial Report was submitted for 2009. Guidance for this report is available through the NJ DEP web site.



## 12.0 USED OIL

Used Oil is defined as *any oil that has been refined from cured oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities*. Used oil that is recycled is regulated under 40 CFR Part 279 and New Jersey State Code N.J.A.C. 7:26A-6.

Used oil generated at Drew includes lubricating oil, hydraulic fluid, compressor oil, mineral oil, coolants, cutting oils and metal working fluid resulting from maintenance activities associated with boilers, compressors, and generators as well as vehicles. Used oil under this regulation does *not* include antifreeze, kerosene, vegetable oil, animal oil, kitchen grease, and petroleum distillates.

Used oil may be considered hazardous waste and must be managed in accordance with the previous sections of this plan if:

- The used oil has been mixed with a listed hazardous waste;
- The used oil has been mixed with a characteristic hazardous waste and still meets the characteristics of the hazard; and
- Contains greater than 1,000 ppm (0.1%) of total halogens and the presumption of being mixed with a listed hazardous waste cannot be rebutted.

Used oil that is not hazardous must meet the following requirements.

### 12.1 STORAGE

Used oil must be stored in containers or tanks that are in good condition and not leaking.

### 12.2 LABELING

Containers and any associated fill pipes must be labeled with the words “used oil.”

### 12.3 RESPONSE TO RELEASE

Drew University maintains a Spill Pollution Prevention Control and Countermeasure Plan under separate cover in accordance with 40 CFR 112. Upon detection of a release of used oil, Drew will:

1. Stop the release,
2. Contain the released used oil,
3. Clean up and manage properly released used oil and associated cleaning and absorbing materials; and
4. Repair or replace any leaking used oil storage container or tanks prior to returning them to service.

#### 12.4 ON-SITE BURNING IN SPACE HEATERS

Drew University does not burn used oil in on-site oil fired space heaters.

#### 12.5 OFF-SITE SHIPMENTS

Drew University transports used oil by way of only using transporters who have an EPA identification number. The current transporter currently being used by the University is:

Lorco Petroleum Service  
(908) 820-8800

**13.0 EMERGENCY SERVICES CONTACT INFORMATION**

<b>Name</b>	<b>Phone Number Off-site</b>
Campus Security (Robert Lucid, Director of Public Safety) Non-Emergency Emergency	X 3379 X 4444
CHEMTREC Transportation Spill Response	800-429-9300
Madison Fire Department Non-Emergency Emergency	973-593-3020 911
Madison Police Department Non-Emergency Emergency	973-593-3000 911
Borough of Madison Water Department	973-593-3045
PSE&G (Electric)	800-436-7734
PSE&G (Gas)	800-436-7734
National Weather Service	800-754-4633
Poison Control Center	800-936-2034
New Jersey Emergency Management Agency Non-Emergency Hazardous Chemical and Oil Spills	800-262-3400 800-262-3300
New Jersey DEP Spill Hot line	<b>877 927 6337 (877 WARN DEP)</b>

<b>DREW PERSONNEL AND AUTHORITY</b>	
<b>Name</b>	<b>Phone Number Off-site</b>
Director of Public Safety (Emergency Coordinator) Mr. Robert Lucid	X 3378
Chemical Hygiene Officer Mark Ostapczuk	973-408 3079
Executive Director Facilities Mike Kopas	X 3580
Provost: Ms. Pamela Gunter-Smith	X 3037
General Counsel Ms. Marie Suozzo 10 Park Place Morristown, NJ 07960	973-538-8008

## **APPENDIX A**

Figure 1: Waste Stream Determination and Analysis Flow Chart

Insert Figure 1  
(printed front/back on 11\*17)

**TOXICITY CHARACTERISTIC CONSTITUENTS AND REGULATORY LEVELS**

Waste Code	Contaminants	Concentration (mg/l)
D004	Arsenic	5.0
D005	Barium	100.0
D018	Benzene	0.5
D006	Cadmium	1.0
D019	Carbon Tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D007	Chromium	5.0
D023	o-Cresol*	200.0
D024	m-Cresol*	200.0
D025	p-Cresol*	200.0
D026	Total Cresols*	200.0
D016	2,3-D	10.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D012	Endrin	0.02
D031	Heptachlor (and its epoxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D008	Lead	5.0
D013	Lindane	0.4
D009	Mercury	0.2
D014	Methoxychlor	10.0
D035	Methyl Ethyl Ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D010	Selenium	1.0
D011	Silver	5.0
D039	Tetrachloroethylene	0.7
D015	Toxaphene	0.5
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D017	2,4,5-TP (Silvex)	1.0
D043	Vinyl Chloride	0.2

\*If o-, m-, and p-cresols cannot be individually measured, the regulatory level for total cresols is used.

Insert P-list  
Insert U-list  
Insert F-list



## **APPENDIX B**

### **WASTE LABEL EXAMPLES**

Example of blank and completed Universal Waste Label  
Example of blank and completed Non-Hazardous Waste Label  
Example of blank and completed Less Than 90 Day Label and Template  
Example of other Commonly Used Labels

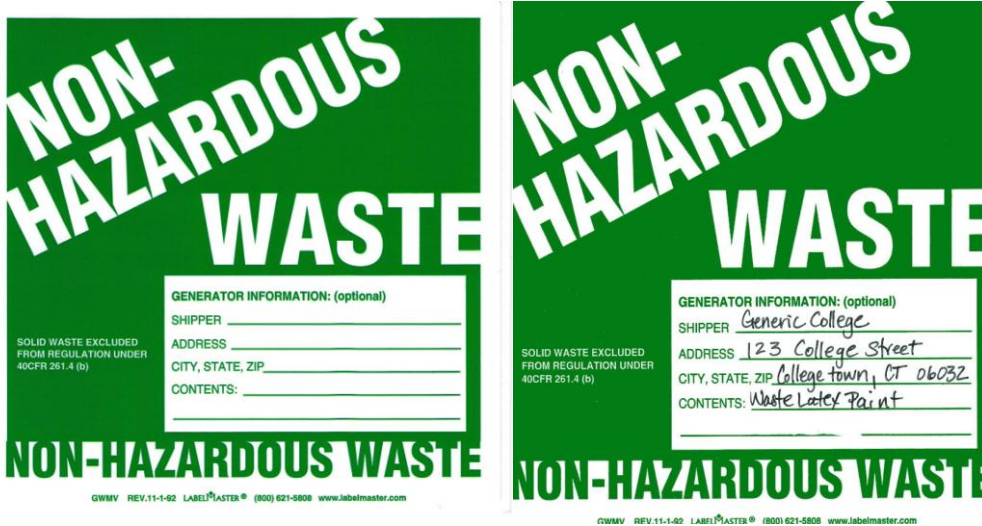
(All labels are formatted to use with Universal Laser Printer Labels, 80108)

SAA Label Template  
Unknown Waste Label Template  
Empty Container Label Template  
Biohazardous Waste Label Template  
Universal Waste Template  
Less Than 90-Day Label Template

Example of blank and completed Universal Waste Label



Example of blank and completed Non-Hazardous Waste Label





Example of other Commonly Used Labels

**THIS CONTAINER ON HOLD  
PENDING ANALYSIS**

CONTENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ORIGIN OF MATERIALS \_\_\_\_\_

ADDRESS \_\_\_\_\_

CONTACT \_\_\_\_\_

**DO NOT TAMPER WITH CONTAINER  
AUTHORIZED PERSONNEL ONLY**

BRADY SIGNMARK® DIV.

**EMPTY**

PREVIOUS CONTENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

DEPARTMENT: \_\_\_\_\_

SUPERVISOR'S SIGNATURE: \_\_\_\_\_

THIS DRUM IS EMPTY BY EPA STANDARDS. NO MORE THAN ONE INCH OF RESIDUE REMAINS IN THE BOTTOM OF THE DRUM. ALL RINGS AND BUNGS ARE TIGHT.

WMTV LABELMASTER® (800) 621-5808 www.labelmaster.com

**USED  
OIL**

SLUO LABELMASTER® (800) 621-5808 www.labelmaster.com

**HEALTH**

**FLAMMABILITY**

**REACTIVITY**

**PROTECTIVE EQUIPMENT**

Lab Safety Supply Inc. Reorder No. 20028

Identidad Quimica

**HEALTH SALUD**

**FLAMMABILITY INFLAMABILIDAD**

**REACTIVITY REACTIVIDAD**

0 Riesgo Mínimo  
1 Riesgo Ligero  
2 Riesgo Moderado  
3 Riesgo Serio  
4 Riesgo muy Grave

**Personal Protection  
Proteccion Personal**

Style ABV62 © 2000 LABELMASTER® (800) 621-5808 www.labelmaster.com

**APPENDIX C**

**INSPECTION LOG (EXAMPLE)**

SAA Weekly Inspections  
Less Than 90 Day Storage Area Weekly Inspection  
Hazardous Waste Accumulation Log



## DREW UNIVERSITY

**Date:** \_\_\_\_\_  
**Time:** \_\_\_\_\_  
**Inspectors Name (Print):** \_\_\_\_\_  
**Inspector (Signature):** \_\_\_\_\_

**HAZARDOUS WASTE CENTRAL  
 ACCUMULATION STORAGE AREA  
 WEEKLY INSPECTION SHEET**  
**Location:** \_\_\_\_\_

INSPECTION ITEMS	YES	NO	If NO, list the discrepancy, how and when was the discrepancy corrected? By whom? Was root cause fixed? Amount of time dedicated to fix the problem? Use additional sheets if necessary.
1. Number of bags/drums stored in area and types of wastes.			
2. Are container(s) in good condition?			
3. Are container label(s) clearly visible?			
4. Are container(s) labeled "Hazardous Waste" AND with other words which identify the contents?			
5. Is hazardous waste accumulation limited to a period of time not to exceed 90 days?			
6. Is the initial accumulation date marked on each container?			
7. Is waste compatible with the container?			
8. Are incompatible wastes kept separate?			
9. Is proper aisle space maintained and drums not stacked >2 high?			
10. Is the area clean (no signs of spillage) and are containers non-leaking?			
11. Is appropriate PPE readily available?			
12. Is a fire extinguisher available (within 50 feet)?			
13. Are container(s) properly closed (i.e. bungs tight)?			
14. Is proper signage posted and easily readable?			
15. Is copy of Emergency Procedures Plan and spill control/emergency equipment (sorbent pads, soda ash, and Speedi-Dri) readily available on-site?			
16. Is floor in good condition with no cracks, erosion, or uneven settlement?			
17. Is the waste stored on pallets?			
18. Is adequate secondary containment provided?			









## **APPENDIX D**

### RCRA Hazardous Waste Training Roster



## **APPENDIX E**

### Chemical Compatibility Chart

Insert EPA chem. Compatibility chart here  
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