

# Central Michigan University

## Biohazardous Waste Management Plan



This document has been prepared to provide guidance to Central Michigan University (CMU) employees in the use and disposal of biohazardous materials in compliance with the regulatory requirements and guidelines established in the:

- Michigan Medical Waste Regulatory Act (Act 368 Part 138)
- Michigan Bloodborne Infectious Diseases Standard (R325.70001-R325.70018)
- 5<sup>th</sup> edition of Biosafety in Microbiological and Biomedical (BMBL) from the United States Department of Health and Human Services
- Guidelines for Research Involving Recombinant DNA Molecules from the National Institute of Health (NIH Guidelines)

# **Biohazardous Waste Management Plan**

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## Introduction

Central Michigan University defines the term “biohazardous waste” as any discarded materials which might include infectious agents or laboratory disposed materials regulated by federal, state, and local authorities. The following waste categories are considered to be biohazardous waste and are covered by the provisions of the CMU Biohazardous Waste Management Plan (BWMP).

- **According to the Michigan Medical Waste Recovery Act (MMWRA), medical waste includes:**
  1. Cultures and stocks of infectious agents and associated biologicals, including laboratory waste, biological production waste, discarded live and attenuated viruses, culture dishes, and related devices.
  2. Liquid human and animal waste, including blood and blood products and body fluids, but not including urine or materials stained with blood or body fluids. Pathological waste: a.) defined as human organs, tissues, body parts other than teeth, products of conception, and fluids removed by trauma or during surgery, autopsy or other medical procedure, and not chemically-fixed (i.e. formaldehyde). b.) animal carcasses, organs, tissues, and body parts.
  3. Sharps: defined as needles, syringes, scalpels, and intravenous tubing with needles attached regardless of whether they are contaminated or not. Additionally, any object that is contaminated and sharp enough to puncture the skin (i.e. microscope slides, lab slides, cover slips, etc.).
  4. Contaminated wastes from animals that have been exposed to agents infectious to humans, these being primarily research animals.
  
- **Regulated waste** as defined by the Michigan Occupational Safety and Health Administration (MIOSHA) Blood borne Infectious Diseases Standard includes:
  1. Liquid or semi-liquid blood or potentially infectious materials;

2. Contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed;
  3. Items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling;
  4. Contaminated sharps which includes any contaminated object that can penetrate the skin and cause infection;
  5. Pathological and microbiological wastes containing blood or other potentially infectious materials.
- **Laboratory waste and regulated waste** as defined in the NIH Guidelines for Research Involving Recombinant DNA Molecules and the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories. In general, this category includes contaminated waste that is potentially infectious and /or hazardous to humans, animals, or plants.

CMU requires that all employees involved in the generation, handling and disposal of biohazardous waste comply with the provisions of the Biohazardous Waste Management Plan. This plan is used in conjunction with the CMU Hazardous Waste Disposal Guide.

## **General Program Management**

### **Areas of Responsibility**

The proper segregation, treatment and disposal of biohazardous waste can only be achieved through the cooperation of all responsible CMU personnel. This division of responsibilities includes:

1. The Biosafety Officer (BSO), Radiation Safety Officer (RSO), and Chemical Hygiene Officer (CHO) in conjunction with the Hazardous Waste Manager and the Animal Facility Coordinators or their designees (refer to Appendix A for contact information).
2. Supervisory Personnel (including Department Chairs, Directors, Principal Investigators, Managers, and Supervisors).
3. Employees.

The CMU Biosafety Officer or designee will:

- Oversee the implementation of the Biohazardous Waste Management Plan;
- Develop, in coordination with administrators, additional biohazardous waste-related policies and procedures as needed to support the effective implementation of this plan and maintain compliance with regulatory requirements;
- Provide biological safety training for CMU employees
- Sign applicable biohazardous waste manifests
- Revise the plan within 30 days each time there is a change in the following:
  - a. A person or site named in the plan;
  - b. The type of waste handled, or the methods of handling waste in a CMU facility;
  - c. Applicable regulations.

#### Supervisory Personnel

- Assure that all employees who generate, handle, treat and /or dispose of biohazardous waste receive biohazardous waste training
- Assure that all employees under their supervision who generate, handle, treat and /or dispose of biohazardous waste follow the procedures outlined in this plan.

#### Employees

Employees who generate, handle, treat, and/or dispose of biohazardous waste are responsible for:

- Following the procedures and practices outlined in this document;
- Receiving appropriate training for handling biohazardous waste.

## **Biohazardous Waste Management Plan Availability**

The Biohazardous Waste Management Plan (BWMP) is available to all CMU employees.

CMU employees can request a copy by calling the Biosafety Officer at 774-3279. A copy will be provided within 2-4 working days of the request. The BWMP is available at this web address:

[www.cmich.edu/cmuehs](http://www.cmich.edu/cmuehs).

## **Biohazardous Waste**

### **Potential Types of Biohazardous Waste Generated and /or Handled by Central Michigan University**

1. Cultures and stocks of infectious agents and associated biologicals, including laboratory waste, biological production wastes, culture dishes, and related devices.
2. Liquid human and animal waste, including blood, blood products and body fluids, but not including urine or materials stained with blood or body fluids.
3. Research or teaching animal carcasses, organs and body parts.
4. Sharps, which means needles, syringes, scalpels, or any item sharp enough to penetrate the skin and is contaminated with potentially infectious material.
5. Wastes generated in recombinant DNA research.
6. Animal carcasses and wastes (i.e. bedding) generated while conducting infectious disease or recombinant DNA research.

### **Segregation, Packaging, Labeling, and Collection of Biohazardous Waste**

#### **A. General Methods**

1. Biohazardous waste is to be packaged, or contained and located in a manner that prevents and protects the waste from release at the producing facility at any time before ultimate disposal.

2. Primary containers (other than approved biohazard bags) used for biohazardous waste collection, storage and disposal are to be labeled with a **biohazard symbol** and/or the words **“BIOHAZARDOUS WASTE”** in letters not less than one inch high. The required background color of all primary containers is red or orange (e.g., biohazard bags). If the biohazard bag is used to collect liquids which may leak out of the bag, it must be placed in a secondary, leak-proof container with a biohazard sticker to meet all regulations.
3. All non-sharps waste containers slated for disposal are required to be labeled with a completed Biohazardous Waste Tag (refer to Appendix B)

## **B. Waste Type-Specific Management Methods**

1. Liquid cultures and stocks of materials contaminated with infectious agents and associated biologicals, including laboratory waste, biological production wastes, discarded live and attenuated viruses and microorganisms, and recombinant DNA waste shall be stored in closable, puncture resistant, containers and decontaminated by autoclaving. After autoclaving, decontaminated liquid waste can be disposed of in a sanitary sewer if no other hazardous materials are present (e.g. chemicals and /or radioactive materials). For information on the special treatment of radioactive or chemical biohazardous waste, contact: The Manager of Risk Management/Environmental Health & Lab Safety.
2. All solid cultures and stocks of materials contaminated with an infectious agent, culture dishes and related devices other than sharps, can be stored in leak-proof, biohazard bags prior to decontamination. If rupture of bags or leakage is possible, the use of a secondary leak-proof container or bag is advised.
3. Biohazardous wastes, with the exception of liquids and sharps, which have been decontaminated by autoclaving, may be disposed of in the dumpster if they are securely packaged in bags or containers and the biohazard warning labels have been removed or the container is clearly labeled

as decontaminated biohazardous waste. Decontaminated waste in biohazardous bags with an “Autoclaved” bag indicator must be placed inside a non see-through (opaque) plastic bag or other secondary non-transparent container (box) prior to disposal in the dumpster. It is imperative that the waste is sufficiently autoclaved (darkening of the indicator) prior to disposal. Only biohazard bags with the “**Autoclaved**” indicator are currently approved. These bags are available through the Biosafety Officer.

4. All blood, blood products and body fluids shall be disposed of by one of the following methods:
  - Chemical disinfection or autoclaving followed by flushing down a sanitary sewer
  - Decontamination by autoclaving followed by disposal in the landfill
5. Disposal of animal waste (carcasses or tissue) is disposed of by incineration through Stericycle. Animal waste will be double bagged and placed in a secondary container provided by Stericycle.
6. Animal carcasses generated in recombinant DNA research will be stored in leak-proof containers labeled with a biohazard sticker and disposed of by incineration through Stericycle.
7. Sharps will be disposed of by incineration through Stericycle. Place discarded needles and syringes into an approved sharps container. An approved sharps container is one that is leak proof, puncture-resistant, closable, bears the biohazard symbol and is manufactured as a sharps container (this does not include plastic bleach bottles, milk bottles, etc.). Do not clip, bend, break, or recap sharps. A sharps container must be permanently closed and then disposed of through Stericycle when:
  - It is  $\frac{3}{4}$  full, or within 90 days of the date that the first sharp was placed in it, whichever comes first. (Label sharps containers with the date that the first sharp is placed in the container as well as disposal date).

- Animal waste and sharps disposal are distributed by the Animal Facility Coordinators who can provide you with additional containers to collect the waste materials.
8. All waste generated in recombinant DNA research will be stored, treated and disposed of in the same manner as comparable waste types (i.e. liquid, solid, sharps) generated in infectious disease research.

### **Methods of Storage**

Biohazardous waste cannot be stored on the premises for more than 90 days. All containers and equipment (e.g. incubators, refrigerators) used for storage shall be labeled with the biohazard sticker and or symbol. The preferable background color of all primary medical waste containers is red or orange fluorescent (e.g., biohazard bags).

### **Methods of Decontamination**

#### Decontamination by Autoclave

1. Biohazardous waste, other than sharps and animal carcasses, may be decontaminated on-site by autoclaving. To use this on-site treatment method, personnel must use an autoclave that has been tested and approved for biohazardous waste decontamination. Routine spore strip (or equivalent) testing will be performed to demonstrate the effectiveness of the decontamination. A log book will be maintained of the test results and the parameters used to demonstrate effectiveness of the decontamination process. These parameters must be followed by all personnel using the autoclave for waste decontamination purposes.
2. For questions or more information, contact the Biosafety Officer at 774-3279.

## **Disposal**

All autoclaved and decontaminated biohazardous waste will be disposed of in a type II sanitary landfill or incinerated.

Central Michigan University utilizes approved and licensed waste disposal companies to transport and dispose of biohazardous waste.

Currently CMU is utilizing:

### **Stericycle**

2695 Elmridge Drive NW  
Grand Rapids, MI 49534  
Phone: 866 382-2851

Original biohazardous waste manifests will be maintained in Risk Management/Environmental Health and Safety office.

## **Exposure Control Plan**

In accordance with MIOSHA regulations, CMU has an Exposure Control Plan (ECP) for blood borne pathogens (BBP). The ECP covers the protocols, training, personal protective equipment, and engineering controls required to prevent or control aerosols of BBP.

Personnel are encouraged to visit the Risk Management and Environmental Health and Safety (RM/EHS) website at: [www.cmich.edu/cmuehs](http://www.cmich.edu/cmuehs) for information regarding BBP training and other safety training programs available at Central Michigan University.

Proposals for work with infectious agents or recombinant DNA must be approved through the Institutional Biosafety Committee (IBC). The IBC will not approve any work that does not comply with applicable regulations.

## Biohazardous Waste Training

- All personnel who generate, handle or dispose of biohazardous waste must complete training in the provisions of this plan. The training topics will include:
- Purpose and overview of the CMU Biohazardous Waste Management Plan
- Types of biohazardous waste generated, treated or disposed of at the work site
- Segregation, packaging, storage and transport of biohazardous waste that is generated, treated or disposed of at the work site
- Treatment and disposal methods for biohazardous waste that is generated treated or disposed of at the work site
- Contact the Biosafety Officer at 774-3279 to receive the appropriate training

In accordance with the Michigan Medical Waste Regulatory Act, new personnel must complete biohazardous waste training before they assume duties that involve the handling of biohazardous waste.

Employees will receive updated information when a change in the Biohazardous Waste Management Plan occurs that directly affects their duties.

### **Training Records**

Training records will be maintained for all CMU personnel completing biohazardous waste training. These records will include:

- Employee's name
- Job classification
- Training date

All training records will be maintained for a minimum of three years through RM/EHS.

## **Appendix A**

### **Contact information:**

Biological Safety and Biohazardous Waste: Tom Schultz, Biosafety Officer: 774-3279

Chemical Safety or Radiation Safety: Jennifer Walton, Manager, Risk Management/Environmental Health & Lab Safety: 774-4189

For information regarding packaging, storage, or pickup of animal waste or sharps contact: Stockroom Manager Jeff Scofield at 774-3459 for the College of Science and Technology or Animal Facility Coordinator Carol Stevens for the College of Health Professions at 774-3015.

Chemical Waste Pickup: Hazardous Waste Manager, Jamie Stock, 774-3378 Hazardous Waste Submission Form is found at [www.cmich.edu/cmuehs](http://www.cmich.edu/cmuehs).

Blood borne Pathogens: Jon Kujat, Manager, Risk Management Environmental Health and Safety & Emergency Management 774-7398

For information regarding disposal post packaging contact Stericycle at 866-382-2851.

### ***Schedule:***

Stericycle pickups are scheduled every 90 days. Items for disposal must be placed in the designated areas no later than the day before the scheduled pickup date in order to be processed, labeled, properly boxed and ready for pickup on the scheduled date.

**Appendix B**

**Biological Waste Tag**

Project Leader\_\_\_\_\_

Dept.\_\_\_\_\_

Building & Room No.\_\_\_\_\_

Phone\_\_\_\_\_

Filled out by\_\_\_\_\_

Date\_\_\_\_\_

**Cultures/Biologicals**

Consistency: Liquid \_\_\_\_ Viscous/Oily/Semi-solid \_\_\_\_ Solid \_\_\_\_

Biohazardous agent (s)

Approximate Volume

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Animals:**

Category

Describe

\_\_\_\_ Biohazardous Agents\_\_\_\_\_

\_\_\_\_ Animals

\_\_\_\_\_

Type:\_\_\_\_\_ #:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_ Bedding, Feces, Feed

\_\_\_\_ Chemically-contaminated animals  
or tissue. List chemical in ppm

\_\_\_\_ Tissue or Blood Specimen

\_\_\_\_ Non-infectious, non-hazardous

\_\_\_\_ Autoclaved

\_\_\_\_ Plastics (syringes, vials,  
gloves, etc)

Please indicate special handling or storage precautions on the back of this form: