



EUREKA MEDICAL
LABORATORIES INC.
EXCELLENCE AND EFFICIENCY FOR EVERYONE

Eureka Medical Laboratories Inc.

PROJECT SUMMARY

25 FEB, 2026



Project Description: Eureka Medical Laboratory

Eureka Medical Laboratory, based in Georgetown, Guyana, is a premier diagnostic facility committed to providing high-quality medical testing services. As an ISO 15189-certified laboratory, it upholds international standards for accuracy, reliability, and patient care.

Specializing in fertility testing, STD testing, cancer screening, clinical chemistry, digital X-rays, and DNA testing, Eureka Medical Laboratory plays a crucial role in supporting healthcare providers with precise diagnostic insights. The lab employs state-of-the-art technology and a highly trained team of professionals to ensure timely and dependable results.

With a strong focus on innovation and patient-centered service, Eureka Medical Laboratory continues to enhance healthcare accessibility and contribute to the wellbeing of individuals and communities across Guyana.

Waste Generation and Pollution Control at Eureka Medical Laboratory (EML) - a Medium-Sized Medical Facility

Types and Volume of Waste Generated by a Medium-Sized Medical Facility

A medium-sized medical facility such as EML produces various types of waste, each requiring proper management to minimize environmental and health risks. The volume of waste generated depends on factors such as patient load, type of medical services offered, and operational efficiency.

1. Types of Medical Waste at EML

- Infectious Waste — Contaminated materials such as used gloves, bandages, blood-soaked dressings, and cultures from lab tests.
- Sharps Waste — Needles, syringes, scalpels, and broken glass that pose injury and infection risks.
- Pathological Waste — Body fluids generated from minor procedures
- Pharmaceutical Waste — Expired or unused medications, vaccines, and antibiotics that require careful disposal.

- Chemical Waste — Laboratory reagents, disinfectants, and solvents used in clinical testing and sterilization.
- General Non-Hazardous Waste Paper, packaging materials, food waste, and administrative waste from offices and cafeterias.

A medium-sized facility such as EML may generate 1-2 kg of hazardous waste per day, depending on patient volume, services offered, and waste segregation practices. Non-hazardous waste can range from 8-10 kg per day, primarily from administrative areas and general operations.

Factors Employed at EML to Reduce Pollution

1. Noise Pollution Reduction

- Use soundproofing materials in diagnostic and imaging rooms.
- Schedule loud activities (e.g., equipment maintenance) during non-peak hours.
- Maintain and upgrade medical equipment to reduce mechanical noise.
- Implement quiet zones in patient care areas to minimize disruptions.

2. Air Pollution Control

- Proper ventilation and air filtration in laboratories and diagnostic rooms to reduce exposure to chemical fumes.
- Use eco-friendly disinfectants and minimize the use of volatile organic compounds (voc).
- Regular maintenance of HVAC systems to prevent emissions from air-conditioning and sterilization equipment.
- Promote the use of digital radiography (X-rays) to reduce reliance on chemical-based film processing.

3. Water Pollution Prevention

- Use biodegradable cleaning agents and minimize the discharge of hazardous chemicals into drainage systems.

- Segregate hazardous liquid waste (e.g., lab reagents, pharmaceutical waste) for specialized disposal rather than flushing into sewers.
- Conduct regular water quality monitoring to ensure compliance with environmental standards.

4. Waste Management Strategies

- Strengthen waste segregation at the source to minimize hazardous waste volumes.
- ' Implement recycling programs for non-hazardous materials like paper, plastic, and
- Partner with certified waste disposal companies to handle hazardous and biomedical waste safely.
 - Train staff on proper waste handling and disposal practices to reduce contamination

By adopting these measures, a Eureka Medical Laboratory will significantly reduce pollution while ensuring a safe and environmentally responsible healthcare environment.

2. Mitigation Measure to Reduce Generator Impacts

With the implementation of additional soundproofing measures that was done and the recommended mitigation actions that are listed below, noise emissions from the standby generator are expected to remain within GNBS regulatory limits and will not result in significant adverse impacts on the surrounding environment or facility occupants.

To further reduce noise impacts from the generator at Eureka Laboratories, the following additional mitigation measures can be implemented alongside the existing soundproofing and operational controls:

Additional Generator Noise Mitigation Measures (Planned)

1. Installation of Acoustic Enclosures or Barriers

Upgrade a purpose-built acoustic enclosure around the generator using high-density sound-absorbing materials such as acoustic foam, or composite sound panels.

2. Installation of Exhaust Silencers (Mufflers)

Fit a high-performance exhaust silencer on the generator exhaust system to reduce engine exhaust noise, which is often one of the major contributors to overall generator sound levels.

3. Vibration Isolation Measures

Install anti-vibration mounts or pads beneath the generator to minimize vibration transmission through the floor and building structure. This helps reduce structure-borne noise and low-frequency rumbling.

4. Preventive Maintenance Program

Implement a regular maintenance schedule for the generator, including lubrication, tightening of loose components, inspection of exhaust systems, and replacement of worn parts. Well-maintained generators operate more quietly and efficiently.

5. Operational Controls and Scheduling

Limit generator operation to essential periods to avoid operation during sensitive times (e.g., early morning, late evening, or night-time) where feasible. Planned testing and servicing will be conducted during normal working hours.

6. Routine Noise Monitoring

Periodic noise measurements will be conducted to confirm that mitigation measures remain effective and that noise levels comply with GNBS standards.

Handling and Disposal of Waste

Eureka Laboratories implements appropriate waste management procedures for hazardous and biohazardous wastes generated during diagnostic and minor surgical activities. Waste is segregated at source, stored in designated labeled containers, and disposed of in accordance with accepted medical waste management practices. Biohazardous wastes are treated prior to disposal, and sharps are collected in puncture-resistant containers. These procedures minimize potential risks to staff, patients, and the surrounding environment.

1. General Waste Management Protocols

Waste Segregation at Source

- Waste must be segregated immediately at the point of generation.
- Use a **color-coded waste segregation system**, such as:
 - **Yellow containers/bags:** Infectious or biohazardous waste

- **Red containers/bags:** Highly infectious waste or pathological waste
- **Black bags:** General non-hazardous waste
- **Sharps containers:** Needles, blades, and broken glass

Labeling Requirements

- All hazardous waste containers should be clearly labeled:
 - "BIOHAZARD" or "HAZARDOUS WASTE"
 - Date of collection
 - Source department or room

Storage

- Waste should be stored in a **designated secure area** with restricted access.
- Storage areas should be:
 - Well ventilated
 - Protected from rain and animals
 - Easy to clean and disinfect
- Biohazardous waste should not be stored for more than **24–48 hours** without treatment or removal.

Personal Protective Equipment (PPE)

Staff handling waste should use:

- Gloves
- Face masks

- Lab coats or protective clothing
- Closed footwear

2. Hazardous Solid Waste

This includes:

- Chemical containers
- Expired reagents
- Contaminated laboratory materials
- Disinfectant residues

Handling Protocols

- Store chemicals in compatible containers with tight-fitting lids.
- Avoid mixing incompatible chemicals.
- Maintain a log of hazardous waste generated.

Disposal

- Dispose through a **licensed hazardous waste contractor** or approved disposal facility.
- Chemical waste should **never be discharged into drains** unless verified as safe.
- Containers should be triple-rinsed if required before disposal.

3. Solid Biohazardous Waste

This includes:

- Blood-soaked gauze and cotton
- Used gloves and swabs

- Tissue samples
- Culture plates
- Disposable medical supplies

Handling Protocols

- Place waste in **leak-proof biohazard bags**.
- Seal bags when they reach about **three-quarters full**.
- Avoid manual compression of bags.

Treatment and Disposal

- Acceptable methods include:
 - Autoclaving prior to disposal
 - Incineration at an approved facility
 - Licensed medical waste collection services
- After treatment, waste may be disposed of as non-hazardous solid waste if permitted by regulations.

4. Liquid Biohazardous Waste

This includes:

- Blood samples
- Body fluids
- Laboratory wash water
- Culture media

Handling Protocols

- Collect liquid waste in **clearly labeled leak-proof containers**.
- Avoid splashing during handling.

Treatment and Disposal

- Disinfect prior to disposal using approved disinfectants such as:
 - Sodium hypochlorite solution (typically 0.5–1% available chlorine)
 - Other approved laboratory disinfectants
- Allow adequate **contact time (typically 30 minutes)** before discharge.
- Treated liquid waste may be discharged into the sanitary sewer where permitted by GNBS standards.

5. Sharps Waste (Critical Category)

This includes:

- Needles
- Lancets
- Scalpel blades
- Broken glass

Handling Protocols

- Dispose immediately after use in **puncture-resistant sharps containers**.
- Do not recap needles.

- Do not overfill containers (maximum $\frac{3}{4}$ full).

Disposal

- Seal containers before removal.
- Dispose through an approved medical waste contractor or incineration facility.

6. Training and Documentation

Staff Training

- Staff should receive regular training on:
 - Waste segregation
 - Safe handling procedures
 - Spill response
 - Infection control

Record Keeping

Maintain records of:

- Waste generation
- Waste collection
- Disposal methods
- Contractor receipts (if applicable)

7. Spill and Emergency Procedures

The facility should maintain a **spill response protocol**, including:

- Immediate isolation of the spill area



- Use of disinfectants
- Proper PPE
- Safe cleanup and disposal of contaminated materials