

# EIAR FOR THE DEVELOPMENT OF A HEALTHCARE WASTE MANAGEMENT FACILITY AT BLARNEY BUSINESS PARK

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## Volume 2- Main Body of the EIAR Chapter 4 – Description of Existing and Proposed Development

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**Prepared for:**

SRCL Ireland Ltd (T/A Stericycle)



**Date:** November 2025

**Document No:**

**P23268-FT-EGN-XX-RP-EN-0004**

Unit 3/4, Northwood House, Northwood Crescent,  
Northwood, Dublin, D09 X899, Ireland

**T: +353 1 658 3500 | E: info@ftco.**

**CORK | DUBLIN | CARLOW**

**[www.fehilytimoney.ie](http://www.fehilytimoney.ie)**



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## 4. DESCRIPTION OF EXISTING AND PROPOSED DEVELOPMENT

### 4.1 Introduction

The proposed development is defined broadly in Chapter 1 Introduction. This Chapter describes the existing development on-site and the proposed development.

#### 4.1.1 Statement of Authority

This chapter was primarily written by Richard Deeney of FT. Richard is Principal Environmental Scientist at FT. He has ca. 13 years of experience. He works in the Circular Economy and Environment group at Fehily Timoney and is vastly experienced in the coordination and completion of planning applications; EIA, including EIA Screening, EIA Scoping and the production of Environmental Impact Assessment Reports (EIARs); Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) of plans and programmes; IE/IPC/Waste Licensing and Compliance; and Sustainability and Climate Action consultancy. He leads an Environmental Science team that delivers projects in these areas. He is an expert project manager who has led and successfully delivered a wide range of strategic and complex projects. He has expertise in assessing the effects of plans and projects on a wide breadth of environmental topics.

### 4.2 The Site and Existing Development

The development site is ca. 1.32 hectares and is located at the centre of the Blarney Business Park.

A light-industrial/warehouse building and associated site infrastructure has been constructed on-site. The development site has been unoccupied and unused since construction and is currently vacant.

Existing site plans depicting the layout, elevations and cross sections of existing development on-site are provided in Volume 4 of this EIAR.

The existing site infrastructure consists of:

- A site entrance and site access/egress;
- site security;
- a light-industrial/warehouse building;
- a yard area;
- parking areas;
- a surface water drainage system;
- a foul water drainage system;
- an electricity supply system;
- a water supply system
- a gas supply system
- external lighting;
- a CCTV security system and,
- boundary treatment/landscaping



#### 4.2.1 Site Entrance and Site Access/Egress

The development site is accessed via an entrance at the south-east of the site boundary. A 7 m wide access roadway is situated at the front of the building on-site and alongside the building to the south. A 4 m wide access/egress roadway is also situated alongside the building to the north. A 2 m wide footpath, which can be used to access the yard area to the rear of the building surrounds the northern, eastern and southern sides of the building on-site.

#### 4.2.2 Site Security

The yard area to the rear of the facility is surrounded by a 2.5 m high security fence. 2.5 m high sliding security gating at the access/egress points is used to securely access and egress the yard area.

A CCTV system is in place at the development site and within the building on-site. A third-party security company monitors and manages the security system on behalf of the site owner.

#### 4.2.3 Light-Industrial/Warehouse Building

There is one existing building on-site. It is 70.6 m long, 57.6 m wide and 17.75 m high. The total footprint of the building is 4,067 m<sup>2</sup>.

The existing building has a steel portal frame structure and a flat roof. The external envelope of the building consists of insulated, profiled cladding panels supported by a wall rail system. An entrance to the building is situated at its south eastern corner. This corner of the building is enveloped by integrated doubled aluminium curtain walling.

The building is subdivided internally into different components comprising:

- An entrance area at the south eastern corner of the building;
- an operational area;
- ancillary office areas and welfare facilities;
- a mezzanine accessed via 2 no stairwells.

The floor of the entire building is concrete. There are 2 no. roller doors situated to the rear of the building facing onto a delivery zone area in the rear yard (4.5 m wide and 5.65 m high). There are 4 station doors/bays situated to the rear of the building facing onto the loading bay ramp (2.5 m wide and 3 m high). There are 9 no. fire escape doors around the perimeter of the building.

Plans for the building have been provided in Volume 4 of this EIAR.

#### 4.2.4 Yard Area

A yard area is situated to the rear of the facility (to the west of the building). This yard is entirely asphalt and is surrounded by a kerbed perimeter. The yard is secured by 2.5 m high fence. 2.5 m high sliding security gates are used to access/egress the yard. The facility building can be accessed from the yard via 2 no. roller doors and 4 no. station doors/loading bays, accessed via a loading bay ramp, present at the rear of the building. There are 4 no. truck parking areas at the loading bay ramp in front of the station doors/loading bays, and 2 no. truck parking areas in front of the roller doors.



#### 4.2.5 Parking Area

There are 61 no. car parking spaces situated at the front of the facility (east of the building) and side of the facility (south of the building). Three of these are disabled parking spaces and six are Electric Vehicle (EV) parking spaces (with suitable EV charging facilities). There are also 6 no. motorcycle bays and 17 no. sheltered bicycle parking spaces situated at the parking area.

#### 4.2.6 Stormwater Drainage System

A surface water drainage system serves the site. Rainwater falling on roof and external areas on-site is collected by the drainage system and discharged to the drainage network serving the overall Blarney Business Park, via a petrol interceptor and a stormwater attenuation tank. The stormwater discharge point is situated at the south-eastern corner of the site. Stormwater discharges from the site are controlled by a hydrobrake, which limits the discharge to 8.55 litres per second.

#### 4.2.7 Foul Water Drainage System

A foul water drainage system is provided at the building on-site. This system drains to a 150 mm diameter foul water pipelines that connects from the building on-site to a 150 mm diameter public foul sewer mains which runs along the road bounding the site to the east.

#### 4.2.8 Water Supply System

A water supply system is present on-site. There is a 150 mm diameter ring water main to supply the site and for firefighting purposes. A water meter is located at the boundary of the site. Firefighting supply hydrants are provided to the east of the site at the landscaped area. This system is connected to the existing 150 mm diameter Blarney Business Park water main south of the site.

#### 4.2.9 Electricity Supply System

An electricity supply system has been installed on-site. This system is connected – via underground connection – to the underground electricity mains serving the business park. An ESB substation and switch room building is situated adjacent to the 7 m access roadway to the south of building.

#### 4.2.10 Gas Supply System

A gas supply system has been installed on-site. This system is connected – via underground connection – to the underground gas mains serving the business park.

#### 4.2.11 External Lighting

External lighting is provided at the site. This lighting covers the site entrance, the parking area to the front of the building, the building entrance, access and egress roads to the rear yard and yard area. The lights are operated on a timer and using photocells. They are in a downward position to mitigate potential light pollution from the site. The purpose of the lighting is to make external areas on-site visible for safety and security.



#### 4.2.12 Boundary Treatment/Landscaping

Boundary treatment/landscaping is present around the perimeter of the site. This consists of the following:

- A pre-existing raised embankment along the southern perimeter of the site.
- A 5 m wide landscaped embankment along the west perimeter of the site, consisting of a mix of native species, including alder, young sessile oak trees, hawthorn and common white birch.
- Boundary treatment along the northern, western and southern perimeters of the site, including grassed areas and boundary planting.

#### 4.2.13 Photos of Existing Development On-site

A series of photos depicting existing development on-site are provided overleaf.



Photo No. 1 - Inside the Existing Building On-site



Photo No. 2 – Station Doors to the Rear of the Building



Photo No. 3 – Rear Yard (with Merck site in the background)



Photo No. 4 – Back of Rear Yard



Photo No. 5 – Existing Building Entrance



Photo No. 6 -Existing Car Park On-site

**Figure 4-1: Photography of Existing Development On-site**





## 4.3 The Proposed Development

### 4.3.1 Proposed Development Overview

The proposed development will comprise the installation and operation of Healthcare Waste Treatment and Transfer Facility at the proposed development site. The facility will accept up to 15,000 tonnes of packaged healthcare waste per annum for management and will provide healthcare waste management capacity for the southern and western regions of Ireland. The proposed development constitutes a change of use of the site.

The following additions/alterations to existing infrastructure on-site will be made to facilitate the proposed development:

1. The installation of plant and facilities inside the existing light-industrial/warehouse building on-site to accommodate healthcare waste management operations and associated commercial activities.
2. The installation of a multi-flue stack (1.5 m x 2.0 m) at the existing roof of the building.
3. Modifications to increase the height of 2 x rear station doors from 3.0 m to 4.0 m.

Waste management activities on-site will be undertaken entirely within the existing building on-site.

A Proposed Site Layout Plan depicting the proposed alterations relating to this proposed development is shown in a drawing which accompanies this EIAR (See Drawing Reference 2896-P-003 Proposed Site Layout Plan contained in Volume 4 of this EIAR).

### 4.3.2 Proposed Healthcare Waste Treatment and Transfer Facility

A Healthcare Waste Treatment and Transfer Facility will be installed inside the existing building on-site. This facility will accept packaged healthcare waste for on-site treatment and/or transfer off-site for recovery/recycling or disposal, as the case may, at third-party waste management facilities. It will also accept packed hazardous waste for transfer off-site for third party waste management facilities. It will have a 50-year lifespan.

This facility will be comprised of the following components:

- A Healthcare Waste Treatment Plant, consisting of a shredder; a steam injection auger, an overband magnet and associated handling, conveyance and water systems;
- a gas fired steam generation boiler to supply the steam auger;
- a Bin Washing System for re-usable containers;
- an air abatement system to treat waste gases arising at the treatment plant. This system will consist of a high efficiency particulate air (HEPA) filter, a coalescing vessel and a carbon filter bed;
- a stack emission point to air (via the roof of the existing building), which will emit waste gases from the treatment process and the gas fired steam raising plant;
- an emission point to sewer, where effluent arising from treatment process condensate and bin washing will be discharged;
- a Waste Re-packaging Facility for healthcare and hazardous waste being subject to re-packaging and transfer;



- designated waste storage areas/facilities for waste pending treatment; waste pending re-packaging and transfer; treated waste residues for transfer; and re-packaged waste for transfer. These storage areas/facilities will have impermeable surfaces and sealed drainage and all waste is stored in fully enclosed, leak-proof containers; and,
- a Sharps Container Management Facility.

#### 4.3.3 Proposed Ancillary Facilities for Existing Building

The following ancillary facilities will be installed inside the existing building on-site to accommodate waste management operations and ancillary commercial activities.

- A main store;
- a cold store;
- a canteen;
- staff welfare facilities;
- office areas;
- a conference room;
- a laboratory;
- a mezzanine storage area
- a server room;
- a cleaners closet;
- a break out area; and
- a staff lobby.

#### 4.3.4 Alterations to Existing Site Infrastructure

Existing site infrastructure described in Section 4.2 of this EIAR chapter will be utilised by the Applicant to operate the proposed Healthcare Waste Treatment and Transfer Facility.

It is not proposed to increase the size of the existing water, gas, electricity, wastewater or stormwater connections to the site. Existing utility connections at the site are sufficient for accommodating the proposed development.

Some further minor alterations will be made to existing ancillary site infrastructure to accommodate the proposed Healthcare Waste Treatment and Transfer Facility. These are described below.

##### 4.3.4.1 *Multi-Flue Stack*

A multi-flue stack (1.5 m x 2.0 m) will be installed at the roof of the existing building. Three flues be housed by this stack – a 600 mm for the proposed treatment process abatement plant, a 300 mm flue from the proposed gas fired steam raising plant, and a 300 mm flue that will serve to ventilate steam from the proposed bin wash process.



#### 4.3.4.2 Modifications to Existing Station Doors

2 no. existing station doors to the rear of the existing building will be increased in height from 3.0 m to 4.0 m to accommodate unloading and acceptance of packaged healthcare waste from vehicles at these doors.

#### 4.3.4.3 Proposed Firewater Retention System

A firewater retention system will be constructed/installed within the existing building on-site for the purpose of containing any firewater that may be generated in the event of a fire on-site. This system is depicted in Drawing Reference 2896-P-101 Proposed Ground Flood Plan, contained in Volume 4 of this EIAR) and will consist of the following:

- A concrete bund wall surrounding the outer perimeter of the facility building. This wall will 375 mm high.
- Automated Hazardous Material and Firewater Containment Barriers at access point gaps in the bund wall. This barrier will raise to a height of 375 mm when activated. It will be automatically triggered in the event of an emergency, spill or fire on-site. The specific systems will be Anhamm Liquid Stop Barriers which are self-closing, stainless steel barriers with chemical and age resistant Polytetrafluoroethylene (PTFE) seals.
- An automatic shut off penstock on a pneumatic valve to the foul drain from the facility.

In the event of a fire, these components will act in combination to ensure the internal area of the building can act as firewater retention structure. The system will provide complete retention of any firewater which could be generated in the event of a fire on-site. It has been designed in accordance with EPA Guidance on Retention Requirements for Firewater Run-off (EPA, 2019), and to retain 'worst-case' firewater volumes that could be generated in a fire at the facility.

The system will be constructed/installed and periodically inspected, tested and maintained in accordance with EPA requirements defined in the Industrial Emissions licence for the operational facility and Best Available Techniques defined for waste management facilities.

### 4.1 Construction of the Proposed Development

The construction works for the proposed development are minor, limited and small-scale in nature.

The installation of plant and facilities inside the existing building on-site will constitute the vast majority of the construction works to take place. Only minor construction works will be undertaken externally as part of the proposed development.

The proposed development does not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks.

#### 4.1.1 Construction Programme

It is estimated that the construction phase of the proposed development will be 6 months in duration.





#### 4.1.2 Construction Hours

Construction work will generally be carried out during daylight hours. Construction work will be confined to the following times (unless otherwise agreed with the Local Authority):

- Between 7:00 AM and 6:00 PM, Monday to Friday, and 8:00 AM to 2:00 PM on Saturdays. No construction work is permitted on Sundays or bank holidays.

#### 4.1.3 Overview of Construction Works

The following construction works will be undertaken on-site as part of the proposed development:

- The installation of a temporary, small-scale construction compound inside the building on-site, including a site office, staff welfare facilities, material/product storage areas, waste storage areas and portable toilets.
- The carrying out of minor additions/alterations to existing ancillary site infrastructure located externally on-site; including the installation of a multi-flue stack at the roof of the existing building, and modifications to 2 no. existing station doors to the rear of the existing building.
- Haulage of plant, equipment and furnishings to the site.
- Temporary storage of plant, equipment and materials for building fit out on-site.
- The installation of the waste processing and handling plant and ancillary plant/equipment/facilities at the operational area inside the building. This will include the carrying out of minor concreting works for the footings for plant supports
- The construction/installation of a bin washing area/system and associated drainage system inside the building.
- The delineation/installation of waste storage areas/facilities.
- The installation of the Sharps Container Management Facility and associated ancillary equipment and facilities.
- The installation of firewater retention facilities inside the building. This will include the laying of a concrete pathway perimeter/bund wall and automatic raising barriers at rear entrances to the facility, and the installation of an automatic shut off penstock on a pneumatic valve to the foul drain from the facility.
- The installation/fit out of ancillary building facilities, including staff welfare facilities, office areas etc.
- The haulage of construction waste arising during the works from the site to off-site waste facilities for management.
- Decommissioning of the construction site, clean-up of the site and facility commissioning.

For the purposes of informing the EIA processes undertaken in subsequent EIA Topic chapters, the above works are broken down into the following principal stages:

1. Minor Additions/Alterations to Existing Ancillary Site Infrastructure located externally on-site.
2. Installation of the Healthcare Waste Treatment and Transfer Facility and Ancillary Building Facilities on-site.



#### 4.1.4 Construction Plant

A combination of the following mobile plant will be used during construction:

- Forklifts
- Mobile Elevated Working Platforms
- Mini-cranes
- Telehandlers

This mobile plant will be operated inside the building on-site for the vast majority of time, as the vast majority of construction works will take place inside the building.

#### 4.1.5 Construction Waste

Only minor levels of construction waste will be generated during the construction works.

The works do not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks that may generate significant levels of waste.

There will be no oil/fuel storage or vehicle/plant maintenance activities undertaken on-site during construction.

The type, quantity and source/s of wastes that are likely to be generated during construction, and the resource management route for these wastes, are listed in Table 4-1.

Table 4-1: Wastes likely to be generated during construction

Waste Type	Quantity	Source/s	Destination
Timber	< 33 tonnes	Scaffolding, temporary supports/formwork, product deliveries, timber offcuts	Recovery at regional Materials Recovery Facility and onward recycling
Sanitary effluent	< 25.44 m <sup>3</sup> <sup>1</sup>	Portaloo toilets	Treatment at regional Wastewater Treatment Plant
Plastics and cardboard	< 5.5 tonnes	Plastic and cardboard packaging, plastic offcuts	Recovery at regional Materials Recovery Facility and onward recycling
Metal	< 5.5 tonne	Metal packaging, metal offcuts	Recovery at regional Materials Recovery Facility and onward recycling
Paint, paint containers and associated materials	< 2 tonnes	Painting/refurbishing	Management/treatment at regional Hazardous Waste Management Facility and onward recycling
Cladding	< 2 tonnes	Modifications to building envelope	Recovery at regional Materials Recovery Facility and onward recycling
Minor quantities of incidental construction waste (mixed municipal, organic waste, mixed dry recyclables, concrete, timber, plaster, tile, glass, metal, dust, debris, waste electrical or electronic equipment)	< 55 tonnes	Construction works generally	Recovery at regional Materials Recovery Facility and onward recycling or energy recovery

<sup>1</sup> Assumed 4 no. Portalooos with a capacity of 265 litres each serviced once a week for the duration of the 6 month construction period.



Any wastes generated on-site during the construction of the proposed development will be handled and managed in accordance with the requirements of the Waste Management Act 1996, as amended, and associated Regulations. All wastes generated during the construction phase of the proposed development will be segregated and stored temporarily in waste skip containers at the temporary construction compound inside the building. Wastes will be transferred off-site for recovery/recycling. Only appropriately authorised waste management providers will be used to haul wastes from the site. Wastes will be sent to suitably permitted/licensed waste facilities only. Wastes will be managed in accordance with circular economy principles and as ‘high up’ the Waste Hierarchy defined under in the Waste Framework Directive (2008/98/EC) as possible.

#### 4.1.6 Construction Resource Use

Only minor levels of resources will be required during construction.

The works do not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks that may require significant levels of resources (e.g., concrete, steel, aggregate, fuel).

Only minor levels of the following resources will be used during construction:

- Concrete
- Steel
- Wood
- Glass
- Plastic
- Plaster
- Metal
- Fuels
- Oils
- Water
- Electricity

#### 4.1.7 Construction Traffic

Only minor levels of construction traffic will be generated during construction.

The works do not involve any demolition, land-take, site clearance or groundworks that generate significant levels of waste (e.g., concrete, soil etc) that need to be hauled off-site by haulage vehicles (e.g., concrete, soil etc).

The works do not involve the construction of any additional buildings or structures on-site that require significant levels of material inputs (e.g., concrete, steel, aggregate etc.) that need to be hauled to the site by haulage vehicles.



Construction phase traffic associated with the proposed development will be limited to the following:

- Construction staff driving to and from the work site by car, jeep and van.
- Occasional delivery of construction plant, equipment and tools to and from the site by jeep, van and Heavy Duty Vehicles (HDV).
- Occasional delivery of plant, equipment, products to be installed on-site (e.g., waste facility plant, ancillary, materials to be used during construction, furnishings) by jeep, van and HDV.

Construction traffic will enter and exit the site via the existing site entrance; access the rear yard via the access roadway alongside the building to the south; and leave the rear yard via the egress roadway running alongside the building to the north. A detailed Construction Traffic Management Plan (CTMP) will be prepared prior to the commencement of the construction phase of the proposed development.

#### 4.1.8 Environmental Management during Construction

A Construction Environmental Management Plan (CEMP) has been developed in order to manage, prevent and control potential environmental impacts associated with construction phase activities. This document is included in Appendix 4.1, Construction Environmental Management Plan, in Volume 3 of this EIAR. This document defines the environmental control and mitigation measures to be adopted during construction/installation works to prevent adverse impacts on the environment due to these activities.

#### 4.1.9 Resource and Waste Management during Construction

A Resource and Waste Management Plan (RWMP) has been prepared for the construction phase of the proposed development. This document is included in Appendix 4.2, Resource and Waste Management Plan, in Volume 3 of this EIAR.

This RWMP has been prepared in accordance with the EPA's Best Practice Guidelines for construction and demolition (C&D) waste management which promotes a systematic and sustainable approach to managing C&D waste throughout the project lifecycle. This RWMP is designed to maximize recycling, reuse, and recovery of waste, prioritizing diversion from landfills wherever possible. This plan aligns with the Waste Hierarchy Principles of the Waste Framework Directive, by promoting and driving the effective management of materials to reduce unnecessary use of new products, optimize the use of secondary materials, and promote on site reuse to prevent waste generation.

#### 4.1.10 Health and Safety Management during Construction

The construction contractor will be appointed as Project Supervisor for the Construction Stage (PSCS) in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013. The suitability and competence of the contractor to fulfil this role will be carefully assessed by the Applicant prior to the appointment.



A site-specific Health and Safety Plan for the construction phase of this project will be prepared in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013. This will address all safety aspects of the construction project including, but not limited to:

- Site access and general induction training,
- General site safety,
- Chains, ropes and lifting gear,
- Special provisions for hoists,
- Protective clothing and footwear required,
- Lockout/tag-out procedures for safe electrical operations,
- Method statements for work procedures,
- Miscellaneous items.

## 4.2 Operation of the Proposed Development

### 4.2.1 Proposed Waste Management Facility Activities

The following waste management activities will be undertaken at the proposed facility:

- The reception, storage, handling and treatment (using steam disinfection and mechanical shredding) of health care waste;
- the reception, storage, handling and re-packaging of healthcare and hazardous waste;
- the transfer of treated/re-packaged waste off-site; and,
- the automated management of reusable sharps containers.

All waste management operations will be carried out inside the existing building on-site. There will be no waste storage, handling or processing in the external yard area.

In addition to the planning application for the proposed development, the Applicant is also making an application to the EPA for an Industrial Emissions (IE) Licence for the waste activities to be carried out at the facility.

The classes of activity, as defined under the Third Schedule and Fourth Schedule of the Waste Management Act, 1996, as amended, pertaining to 'Disposal Operations' and 'Recovery Operations' respectively, which will be carried out at the proposed facility, are listed in Table 4-2 and Table 4-3. These prescribed classes of activity pertain to operations that the waste will be subject to at the proposed facility and/or third-party waste facilities that waste leaving the proposed facility ultimately gets sent to.

In normal circumstances, waste accepted at the facility will be subject to recovery operations at the facility or at third-party waste facilities that treated/re-packaged waste gets sent to ultimately.

There may be operational or market circumstances however where the treated/re-packaged waste gets sent to third-party waste facilities that subject to waste to a disposal operation. This will be rare, or may never occur, however there is a need to prescribe these disposal operations under the IE licence for the proposed facility to accommodate this possibility.



**Table 4-2: Proposed Waste Disposal Operations under the Third Schedule of the Waste Management Act 1996 (as amended)**

<b>Class D9</b>	Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.).
<b>Proposed Activity Description</b>	<i>Treatment of health care waste using steam disinfection and mechanical shredding, prior to dispatch to a third-party waste facility for a disposal operation.</i>
<b>Class D13</b>	Blending or mixing prior to submission to any of the operations numbered from D 1 to 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12)
<b>Proposed Activity Description</b>	<i>Shredding/re-packaging of health care waste, prior to dispatch to a third-party waste facility for a disposal operation.</i>
<b>Class D14</b>	Repackaging prior to submission to any of the operations numbered D 1 to D 13.
<b>Proposed Activity Description</b>	<i>Re-packaging of health care waste, prior to dispatch to a third-party waste facility for a disposal operation.</i>
<b>Class D15</b>	Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of "collection" in section 5(1)), pending collection, on the site where the waste is produced).
<b>Proposed Activity Description</b>	<i>Storage of healthcare and hazardous waste, prior to dispatch to a third-party waste facility for a disposal operation.</i>



**Table 4-3: Proposed Waste Recovery Operations under the Fourth Schedule of the Waste Management Act 1996 (as amended)**

<b>Class R1</b>	Use principally as a fuel or other means to generate energy.
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of healthcare waste, prior to dispatch to a third-party waste facility for energy recovery.</i>
<b>Class R3</b>	Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes), which includes gasification and pyrolysis using the components as chemicals.
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of healthcare waste (containing organic fractions), prior to dispatch to a third-party waste facility for recycling.</i>
<b>Class R4</b>	Recycling/reclamation of metals and metals compounds.
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of healthcare waste (containing metal fractions), including on-site recovery of metal fractions subject to treatment, prior to dispatch to a third-party waste facility for recovery/recycling.</i>
<b>Class R5</b>	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of healthcare waste (containing inorganic fractions), prior to dispatch to a third-party waste facility for recycling.</i>
<b>Class R12</b>	Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11)
<b>Proposed Activity Description</b>	<i>Shredding/re-packaging of health care waste, prior to dispatch to a third-party waste facility for a recovery operation.</i>
<b>Class R13</b>	Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of “collection” in section 5(1)), pending collection, on the site where the waste is produced).
<b>Proposed Activity Description</b>	<i>Storage of healthcare and hazardous waste, prior to dispatch to a third-party waste facility for a recovery operation.</i>





The proposed waste activities will also fall within the remit of the Industrial Emissions Directive (2010/75/EU), as implemented by the European Union (Industrial Emissions) Regulations (S.I. 138 of 2013), which amends the First Schedule of the EPA Act 1992. Again, these prescribed classes of activity pertain to operations that the waste will be subject to at the proposed facility and/or third-party waste facilities that waste leaving the proposed facility ultimately gets sent to.

The classes of activity, as defined under the First Schedule of the EPA Act 1992, as amended, which will be carried out at the proposed facility are listed in Table 4-4.

The treatment of healthcare waste using steam disinfection and mechanical shredding has been assigned as the main class of activity that will be undertaken at the proposed facility.

**Table 4-4: Proposed Activities under the First Schedule of the EPA Act (as amended)**

<b>Class 11.2 (b) (Main Activity)</b>	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
<b>Proposed Activity Description</b>	<i>Treatment of health care waste using steam disinfection and mechanical shredding, prior to dispatch to a third-party waste facility for a disposal or recovery operation.</i>
<b>Class 11.1</b>	The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required. (Is an industrial emissions directive activity, in so far as the process development or operation specified in 11.1 is carried on in an installation connected or associated with another activity that is an industrial emission directive activity).
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of healthcare waste, prior to dispatch to a third-party waste facility for recovery or disposal.</i>
<b>Class 11.2 (d)</b>	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in paragraph 11.2 or 11.3.
<b>Proposed Activity Description</b>	<i>Re-packaging of healthcare waste, prior to dispatch to a third-party waste facility for recovery or disposal.</i>
<b>Class 11.2 (f)</b>	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of healthcare waste (containing inorganic fractions), prior to dispatch to a third-party waste facility for disposal or recovery.</i>
<b>Class 11.4 (a) (ii)</b>	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. 254 of 2001) apply): physico-chemical treatment



<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of health care waste, prior to dispatch to a third-party waste facility for a disposal operation.</i>
<b>Class 11.4 (b) (ii)</b>	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): pre-treatment of waste for incineration or co-incineration.
<b>Proposed Activity Description</b>	<i>Treatment/re-packaging of health care waste, prior to dispatch to a third-party waste facility for a disposal operation.</i>
<b>Class 11.6</b>	Temporary storage of hazardous waste, (other than waste referred to in paragraph 11.5) pending any of the activities referred to in paragraph 11.2, 11.3, 11.5 or 11.7 with a total capacity exceeding 50 tonnes, other than temporary storage, pending collection, on the site where the waste is generated
<b>Proposed Activity Description</b>	<i>Storage of healthcare and hazardous waste, prior to dispatch to a third-party waste facility.</i>

#### 4.2.2 Proposed Waste for Acceptance and Facility Throughput

An overview of the type and quantity of waste to be accepted at the proposed facility is provided in Table 4-5.

**Table 4-5: Proposed Waste for Acceptance and Facility Throughput**

Waste Category	Examples of waste types that fall under this category	Waste management activity waste will be subject to	Throughput (Tonnes Per Annum)	Source/s of Waste
Healthcare risk and related wastes	Sharps, waste blood bags, dressings, plaster, PPE, casts, linen, disposable clothing	Treatment on-site and transfer off-site	11,000	Healthcare facilities (e.g., hospitals, GPs, medical centres etc.)
		Re-packaging and bulking on-site and transfer off-site	2,000	
Hazardous wastes	Chemicals (e.g. cleaning products, paints, solvents, oils), medicines, PPE	Re-packaging on-site and transfer off-site <sup>Note 1</sup>	2,000	Healthcare, laboratory and commercial and industrial facilities.

Note 1: Hazardous waste accepted at the facility will only be stored on-site before being collectively loaded onto dispatch vehicles for onward transfer. No hazardous waste bulking will be undertaken at the facility (i.e. hazardous waste containers will not be opened at any stage of the waste management process).



### 4.2.3 Proposed Facility Operations

#### 4.2.3.1 Hours of Operation

The proposed facility will operate 24 hours a day, 7 days a week, throughout the year.

While the facility is proposed to operate on a 24/7 basis, the vast majority of waste operations will occur during day-time and evening hours.

#### 4.2.3.2 Management and Staffing

There will be 27 staff employed at the proposed facility. A breakdown of staff for the facility is provided below:

- 1 no. Facility Manager
- 1 no. Maintenance Manager
- 2 no. Team Leaders
- 8 no. Warehouse and Plant Operators
- 4 no. Sharps Management Service Operators.
- 12 no. Drivers
- 1 no. Service Supervisor

#### 4.2.3.3 Waste Management Operations

##### Waste Acceptance

Waste will be accepted at the proposed facility in accordance with a Waste Acceptance Procedure defined under the EMS and IE Licence covering the proposed facility. An overview of the procedures is provided below:

- Waste pre-acceptance data will be obtained from customers to assist in characterising waste arriving on-site.
- Vehicle drivers will identify/verify the type and quantity of waste at the point of collection, and will check that the waste has been correctly packaged and labelled/tagged. They will complete a Waste Transfer Form during this process, which will accompany the waste during transfer.
- On arrival at the facility, the drivers of vehicles transferring waste to the facility shall reverse to/through station/roller doors situated to the rear of the building, park in designated park areas, make themselves known to operative/s with responsibility for waste intake, and provide the Waste Transfer Form to the operatives.
- Before accepting waste on-site, operative/s shall confirm if there is sufficient designated storage capacity on-site to accept the waste. If there is insufficient capacity to accept the waste into the facility, the driver shall be asked to wait. The waste shall only be offloaded once sufficient capacity is available.
- A visual inspection of the inside of vehicles transferring waste to the site will take place, to ensure waste is being stored properly. Waste stored improperly or in damaged contained shall be appropriately re-packaged before being unloaded into the facility.
- A visual inspection of all waste containers unloaded from vehicles will take place, to ensure that the waste type contained within a container is as per the identifiable tag or label on the exterior of the container, and to ensure waste is directed correctly for either treatment or storage for transfer.



- Digital tags will be used on waste containers to track, identify and characterise waste containers. These tags will be checked when waste is being unloaded also. These are known as 'BioTrack tags' and are managed under Stericycle's bespoke information system.
- All waste being treated on-site (not one in a number of containers, for example) will be subject careful further inspection as its being unloaded into the treatment process, to ensure wastes authorised for re-packaging on-site only are not inadvertently put through the treatment process.
- Any non-conforming wastes (wastes that are not authorised for acceptance under the IE licence) that arrive at the facility will not be offloaded from vehicles/accepted at the facility.
- Any non-conforming wastes identified during waste handling inside the facility will be loaded into a separate sealed container and placed in a contained waste quarantine area inside the building. A Waste Non-conformance Report will be produced which will conclude the appropriate management option for the non-conforming waste (i.e. dispatch to an appropriate, authorised third-party waste management facility for appropriate management).

### Waste Storage

There will be designated waste storage areas/facilities for waste pending treatment; waste pending re-packaging and transfer; treated waste residues for transfer; and re-packaged waste for transfer. These storage areas/facilities will have impermeable surfaces and sealed drainage and all waste is stored in fully enclosed, leak-proof containers.

Treated waste residues will be stored in contained trailers that can be sealed and hauled-off site via HDV.

Healthcare waste which has been subject to treatment/re-packaging will be stored in designated storage areas for a maximum of 36 hours before being transferred off-site to appropriately authorised third party waste management facilities. Other packaged hazardous waste on-site will be stored for a maximum of three months before being transferred off-site.

Incompatible wastes and wastes which can contaminated other wastes will be physically segregated and stored in their own sealed waste containers. Waste types for separate storage will be identified by BioTrack tags.

All wastes received on-site will be stored by one of the following means:

- In 770ltr wheeled carts that are lockable, fully enclosed and leak-proof.
- On pallets in UN approved primary packages are stacked upright and secured.
- In other approved containers such as re-usable sharps containers with their associated carts/cages.
- In a designated, banded storage area inside the building or in a secure container (hazardous wastes only e.g., chemicals etc).



## Healthcare Waste Treatment and Transfer Operations

The following waste management activities will be undertaken at the proposed facility:

- The reception, storage, handling and treatment (using steam disinfection and mechanical shredding) of health care waste;
- the reception, storage, handling and re-packaging of healthcare and hazardous waste;
- the transfer of treated/re-packaged waste off-site; and,
- the automated management of reusable sharps containers.

The waste treatment process (using steam disinfection and mechanical shredding) has a design throughput of 2 tonnes per hour. A description of the treatment process stages is provided below:

- a) Waste is loaded into the inspection hopper directly from the 770 litre wheeled carts used to transport and store the waste. This is a mechanical process to minimise manual handling of the waste. The waste is then visually inspected in the hopper, with any non-conformant waste identified being removed and reported as specified in the relevant management system procedure.
- b) After inspection the waste is transferred from the inspection hopper and into the treatment process loading hopper above the shredder. This is a mechanical process to minimise manual handling of the waste. Following each movement of the treatment process loading hopper, a mechanical door on the main hopper (above the shredder) closes to retain bio-aerosols and stays closed whilst the shredder operates.
- c) The waste then passes directly into a four-shaft shredder designed to a 38mm cut. The shredder is designed to cope with all permitted wastes including small metal items commonly found in the non-medicinal sharps waste stream. The shredder is maintained under negative pressure, with air from the process being transferred via ducting located above the loading hopper to the air abatement system
- d) The shredded waste is then transferred through the treatment chamber, an enclosed elongated tube containing an auger screw which mechanically moves the waste flock (the shredded waste material is known as flock) through the process. Steam is injected into the chamber at several points along the auger to provide the necessary heat and moisture to disinfect the waste. Temperature monitoring points are located along the auger and at the discharge point.
- e) An integrated SCADA system monitors and controls the plant temperatures, steam injection rates and auger rotation speed to ensure that the plant is maintained within validated parameters during all hours of operation. The system records and archives all data.
- f) The shredded, inactivated waste flock is then discharged into a trailer where it is stored prior to transfer off-site for management at appropriately authorised third-party waste management facilities. The residual steam is transferred to the air abatement system.

An automated Sharps Container Management System will be operated at the site in a dedicated area. This will consist of a small-scale automated sharps handling, conveyance and container washing system, and will promote the re-use of re-usable sharps containers arriving at the facility.



### Proposed Traffic Management

An overview of the proposed Traffic Management for the operational facility is provided below:

- Security gates are located at the access points to the rear service yard and loading doors/docks to restrict access to this area to commercial vehicles only.
- Employee and visitor cars may access from any direction and will park (reverse parking) only in the designated car parking areas within the site on the east and southern sides.
- Commercial vehicles will enter the site approaching southbound only, turning right from the roadway into the site.
- From there all commercial vehicles will proceed to the security gate on the south side of the building.
- Once inside the service yard all vehicles will drive forward towards the western perimeter before reversing onto one of the designated loading bays. Trained banksmen will be used when appropriate.
- All vehicles will then drive forwards away from the loading bay.
- Small vans (up to 3.5 tonne) may then exit from either the north or south security gate.
- Large commercial vehicles (over 3.5 tonne) may only exit via the south security gate as the north side access route is too small for larger vehicles.
- All commercial vehicles will exit the site in a southbound direction only, turning right onto the roadway from the site.
- No commercial vehicles will approach and enter the site in a northbound direction, or will exit the site in a northbound direction (so as to prevent the swept path of the vehicle straying onto the right hand (opposite) side of the highway).

### Proposed Processing Plant

An overview of waste processing plant that will be used at the proposed facility:

- Waste Treatment Plant and Associated Plant and System:
  - Pre-Tipper System
  - Waste Bucket Lift Systems
  - M85 (SSI) Shredder
  - Steam Injection Auger
  - Transfer Screw
  - Reversible Exit Screw
  - Steam Generation Boiler
  - Hydraulic Power Pack
  - Air Abatement System
  - Water Filter System
  - Overband Magnet / Metal Separation
  - Air Compressors
  - 2 no. Bin Washers
  - CAT5 Cold Water Storage Tank
- Sharps Containment Wash Plant
- Mobile Plant
  - 1 no. Forklift (Electric)



## Environmental Management during Operations

The following environmental management measures/techniques will be adopted and implemented at the facility to ensure a high level of environmental protection:

- An incoming waste management procedure (including waste acceptance, reception, recording and tracking);
- an onsite waste management procedure (including waste handling, storage, container washing and a document storage plan);
- a Housekeeping Procedure;
- an Air Abatement System to treat waste gas from the treatment process;
- an Odour Management Plan to prevent and minimize fugitive odour emissions;
- an Accident Prevention Policy and Emergency Preparedness and Response Procedure;
- a Spill Control and Response Procedure and provision of spill control equipment;
- an IE Licence Compliance Policy;
- an Environmental Management System (certified to ISO 14001:2015);
- use of fast acting doors at station/roller doors to limit noise or fugitive emissions from the facility building;
- an Environmental Monitoring Programme;
- a Firewater Water Retention System;
- a Drainage Inspection and Management Plan;
- a Waste Prevention Management Plan (for wastes that may be generated on-site);
- a Coolant Gas and F-Gas Management System;
- Use of Primary and Secondary Retention Containers/Systems for waste storage;
- A Preventative Maintenance System for plant and equipment, including Air Abatement Plant and automated raised barriers for firewater retention; and,
- Environmental Training and Awareness for facility operatives.

### 4.2.4 Facility Licensing, Operational Controls and Environmental Controls

Waste management activities associated with the proposed development will be regulated under an IE Licence granted by the Environmental Protection Agency (EPA) - in accordance with, the Industrial Emissions Directive (2010/75/EU) as amended by Directive (EU) 2024/1785; the European Union (Industrial Emissions) Regulations (S.I. 138 of 2013); and, the Environmental Protection Agency Act, 1992 (as amended).



This authorisation will allow for the continued regulation and control of the proposed waste activities to be undertaken on-site. The following aspects of the proposed development will be controlled through this authorisation:

- Control of emissions to air and sewer;
- control of noise emissions;
- monitoring of emissions and the receiving environment;
- resource use and energy efficiency;
- waste acceptance and quarantine;
- waste storage, handling and processing operations;
- waste records;
- the condition of the site;
- changes to the operations and the physical fabric of the facility;
- facility management including the requirement for an environmental management system (EMS);
- environmental management techniques;
- infrastructure management and maintenance;
- accident prevention and emergency response including fire water retention; and,
- operational controls.

The IE Licence for the facility will require that Best Available Techniques (BAT)<sup>2</sup> are implemented at the proposed facility to ensure a high level of environmental protection.

Best Available Techniques are defined in Article 3(10) of the Industrial Emissions Directive (2010/75/EU), as amended by Directive (EU) 2024/1785, as *‘the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole’*

‘Techniques’ include both the technologies used and the way in which they are designed, built, maintained, operated and decommissioned;

‘Available’ means developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Union, as long as they are reasonably accessible to the operator;

‘Best’ means most effective in achieving a high general level of protection of the environment as a whole, including human health and climate protection.

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<sup>2</sup> Defined by the EPA as the *‘most effective techniques available to a particular industry sector to achieve a high general level of protection of the environment’*.





The proposed facility will operate in accordance with the standards defined in the following:

- European Commission – Reference Document on Best Available Techniques for Energy Efficiency (BREF Document), 2009;
- EPA – BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery – December 2011;
- European Commission - Best Available Techniques (BAT) Reference Document for Waste Treatment (BREF Document), 2018;
- Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council, 2018;
- European Commission - JRC Reference Report on Monitoring of Emissions to Air and Water from IED Installations, 2018.

The IE Licence will require the Applicant to carry out the following at the proposed facility:

- Develop and implement Environmental Management System and Energy Management System;
- implement waste acceptance, inspection and recording procedures;
- establish and operate a dedicated waste quarantine area;
- store waste in a safe, secure and appropriate manner;
- manage drainage in a manner that prevents polluting discharges from the site;
- record and report on energy usage;
- establish and maintain a firewater retention system on-site;
- implement an environmental monitoring programme on-site, which will cover stormwater discharge monitoring, air emission monitoring, groundwater monitoring and noise monitoring in the surrounding environment.
- provide appropriate secondary retention system (bundling) for hazardous material stored on-site;
- adopt and implement pest and litter control procedures;
- appropriate segregated and manage waste generated on-site; and,
- manage traffic on-site.

#### 4.2.5 Facility Traffic

The following vehicles will be used to transfer waste to the facility:

- Commercial 7.5 tonne truck.
- Commercial 18 tonne truck.
- Commercial 44 tonne truck.
- Commercial 60 tonne truck (Arctic).



The following vehicles will be used to transfer waste from the facility:

- Commercial 60 tonne truck (Arctic).

Employees will travel to and from the facility via their personal cars or company cars.

1 no. Forklift will be operated at the facility.

Traffic movements at the site will be controlled by an Operational Traffic Management Plan.

#### 4.2.6 Waste Generation at the Facility

The following types of waste will be generated on-site in limited quantities as a result of facility operations and ancillary on-site activities:

- Mixed Municipal Waste.
- Food Waste.
- Mixed Dry Recyclables.
- Green Waste.
- Incidental Waste (e.g., Waste Electrical and Electronic Equipment, Fluorescent Tubes, Batteries, Bulky Waste, Glass, Metals, Oils etc.)

All non-process related wastes generated onsite will be appropriately segregated, temporarily stored on-site and dispatched off-site for management at appropriate third-party waste management facilities. Wastes generated on-site will be managed in accordance with circular economy principles and as 'high up' the Waste Hierarchy defined under in the Waste Framework Directive (2008/98/EC) as possible.

#### 4.2.7 Resource Use and Storage at the Facility

An overview of the principal resources that will be used and stored at the proposed facility during operations is provided in Table 4-6.



**Table 4-6: Resource Use and Storage at the Facility**

Resource	Resource Use Per Annum	How the Resource is Used	Maximum Amount On-site
Natural gas	Ca. 3,000 MWh	To fire steam generation plant for treatment process	N/A
Electricity	Ca. 90 MWh	To drive treatment plant, ancillary plant and mobile plant, and to power building electricity	N/A
Water	Ca. 7,000 m <sup>3</sup>	To supply the boiler and the container washer	N/A
Activated carbon granules	400 kg	Carbon adsorption filter unit	400 kg
Biotrickling filter nutrient	250kg	Biotrickling filter unit – dosed to maintain efficacy during plant maintenance shut downs	250 kg
Boiler water treatment chemical	300 litres	Dosed to boiler water to reduce hardness / scaling	100 litres
Detergents	4,000 litres	Use for container washing and cleaning of site surfaces	1,200 litres
Hydraulic and silicone based oils	2,500 litres	Used for general site maintenance	1000 litres

All liquid resources will be stored appropriately on or in secondary retention systems/structures and will be used in accordance with their Material Safety Data Sheets (MSDSs). The Emergency Preparedness and Response Plan for the facility will itemise the quantify and location of chemicals and oils stored on-site.

#### 4.2.8 Health and Safety Management at the Facility

Health and safety management will be implemented on-site in accordance with the Applicants Health and Safety Management System. A site-specific Health and Safety Plan will be developed for the facility. All employees will be made familiar with the contents of the Health and Safety Plan. A Safety Statement will be produced for the facility in line with regulatory requirements. Health and safety practices and processes will be reviewed on an annual basis to ensure they are in line with best practice for the sector. Regular safety audits will be carried out on-site to ensure the safety of all personnel working at the facility. Suitable operational and maintenance plans and procedures will be implemented at the facility to ensure all plant and equipment can be safely operated.



Access to the site during the operational phase of the proposed development will be restricted to employees, waste vehicles and occasional visitors. Procedures will be in place at the facility to ensure the health and safety of all persons entering the site, including the signing in/out of all visitors. All personnel present on-site will be provided with and will be obliged to wear personal protective equipment (PPE) appropriate for their particular functions. PPE may include facemasks, gloves, safety glasses, steel-toed footwear, overalls, reflective jackets and helmets.

Traffic movements at the site will be controlled by an Operational Traffic Management Plan. All drivers will be provided with appropriate driver training, relevant to the vehicle they drive, in accordance with regulatory requirements. Speed restrictions for traffic will be enforced on-site. Risk controls for reversing vehicles will be in place on-site.

An Accident Prevention Policy will be developed and implemented at the facility to enable proactive hazard identification and the prevention of accidents that may have an impact on health and safety and/or the environment.

An Emergency Response Procedure for responding to incidents or accidents that may have a health and safety and/or environmental impact will be developed and implemented at the facility.

#### 4.2.9 Photography from a Similar Facility

A selection of photographs for the Applicant's existing Healthcare Waste Treatment and Transfer Facility based in Telford, United Kingdom are provided below – to aid the reader in understanding the layout and operation of the proposed facility. The proposed facility will be similar in nature to the Applicant's Telford facility.



Figure 4-2: Photography from Similar Applicant Facility

### 4.3 Decommissioning of the Proposed Development

The expected lifetime of the facility is 50 years. Upon cessation of waste management activities at the site, the facility will be decommissioned in accordance with a Closure Plan for the facility, which will be prepared as a condition of the IE licence for the waste activity.





The following closure and decommissioning tasks will be completed under this Closure Plan:

- a) All materials and wastes will be wound down gradually prior to closure and removed for recovery/recycling or disposal at an appropriately authorized waste management facility.
- b) All waters collected on-site will be collected and removed for treatment at authorized wastewater treatment plant
- c) All hard-standing areas and drainage systems including interceptors and underground tanks/chambers will be cleaned and washed down.
- d) Plant, equipment and tanks will be safely decontaminated/cleaned using standard procedures and competent contractors/staff.
- e) All plant and equipment present on-site will be decommissioned and either resold, reutilized at a separate site operated by the applicant, or scrapped.
- f) Office and staff facilities will be cleaned and emptied of all documents and IT equipment previously associated with the operation of the waste facility.
- g) The building, concrete hardstanding, drainage systems, boundary/treatment/landscaping and fencing will be left in-situ.
- h) Environmental monitoring, inspection and management will be undertaken during closure to confirm that closure and decommissioning tasks do not generate emissions to environmental harmful to receiving environmental media (e.g., ambient air, soil, groundwater, surface water).
- i) Records relating to waste management, material management, and environmental management, monitoring and assessment will be retained by the applicant.





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