

**Amazon Data Services Ireland Limited**

# DUB159 IE Licence Application

Attachment 9-2 Site Closure

Issue | 26 February 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 305101-00

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# 1. Introduction

## 1.1 Overview

This Closure Plan has been prepared in accordance with Environmental Protection Agency (EPA) guidance for assessing and costing environmental liabilities<sup>1</sup> and the guidance for the closure of licensed sites<sup>2</sup>. While the site does not fall within the list of categories requiring a mandatory Environmental Liabilities Risk Assessment (ELRA), Closure, Restoration, and Aftercare Management Plan (CRAMP), or Financial Provision (FP); this report has been prepared in line with requirements under Section 9 of the proposed Industrial Emissions (IE) licence application form on “Cessation of Activity” (Attachment 9-1 Environmental Management Techniques).

The overall purpose of the Closure Plan is to ensure that necessary measures are taken to avoid any risk of environmental pollution and, where pollution has been caused, to return the site to a satisfactory state.

Amazon Data Services Ireland Limited (ADSIL) (*‘the Applicant’*) is applying to the Environmental Protection Agency (*‘the Agency’*) for an Industrial Emissions (IE) Licence for its data storage facility (hereafter referred to as the *‘Installation’*) located at Data Centre Building B1, Kildare Innovation Campus (KIC), Barnhall Road, Leixlip, County Kildare, Ireland.

The Installation site covers an area of c. 3.645 hectares (ha) in total and is situated within the wider KIC Masterplan site, which was granted planning permission in January 2024 by Kildare County Council (KCC) (KCC Planning Ref. 23/60047). An Environmental Impact Assessment Report (EIAR) and Appropriate Assessment (AA) Screening Report were prepared as part of this planning application and have been submitted with this IE Licence application, refer to Attachment 6-3-6 and Attachment 6-2-1 respectively.

ADSIL holds a long-term lease that concerns lands within the Installation site, which sits in the northwest corner of the KIC Masterplan site. The proposed IE licence application relates only to the area concerning the Installation. The remaining areas within the KIC Masterplan site are controlled by the KIC Masterplan site owner, hereafter referred to as *“the Landowner”*.

The following is an outline of the closure activities should they be required after the IE licence has been granted. This plan addresses the key issues, which would occur in an orderly shutdown of all the site activities on a phased basis over approximately six (6) to twelve (12) months.

## 1.2 Site Description

The Installation is located on a site of c. 3.645 hectares. The Installation forms part of a wider masterplan area – the KIC Masterplan site. The KIC Masterplan site is owned by a separate landowner (*‘the Landowner’*).

The Installation will comprise 1 no. single-storey data storage facility building (Data Centre Building B1) with associated office block and ancillary elements. The ancillary elements of the Installation will include: logistics and fuel unloading bays, maintenance and storage spaces, associated water tanks, sprinkler tanks, fire sprinkler pump house, electrical rooms, security and utility spaces, internal road network, underground foul and stormwater drainage networks.

The permitted Installation site layout and main building is shown in Figure 1, refer to Drawing 305131-ARP-ZZ-XX-YE-DR-1001 - Site Layout Plan for further details.

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<sup>1</sup> Environmental Protection Agency. Guidance on Assessing and Costing Environmental Liabilities. Johnstown Castle: EPA, 2014

<sup>2</sup> Environmental Protection Agency. Guidance to Licensees on Surrender, Cessation and Closure of Licensed Sites. Johnstown Castle: EPA, 2012

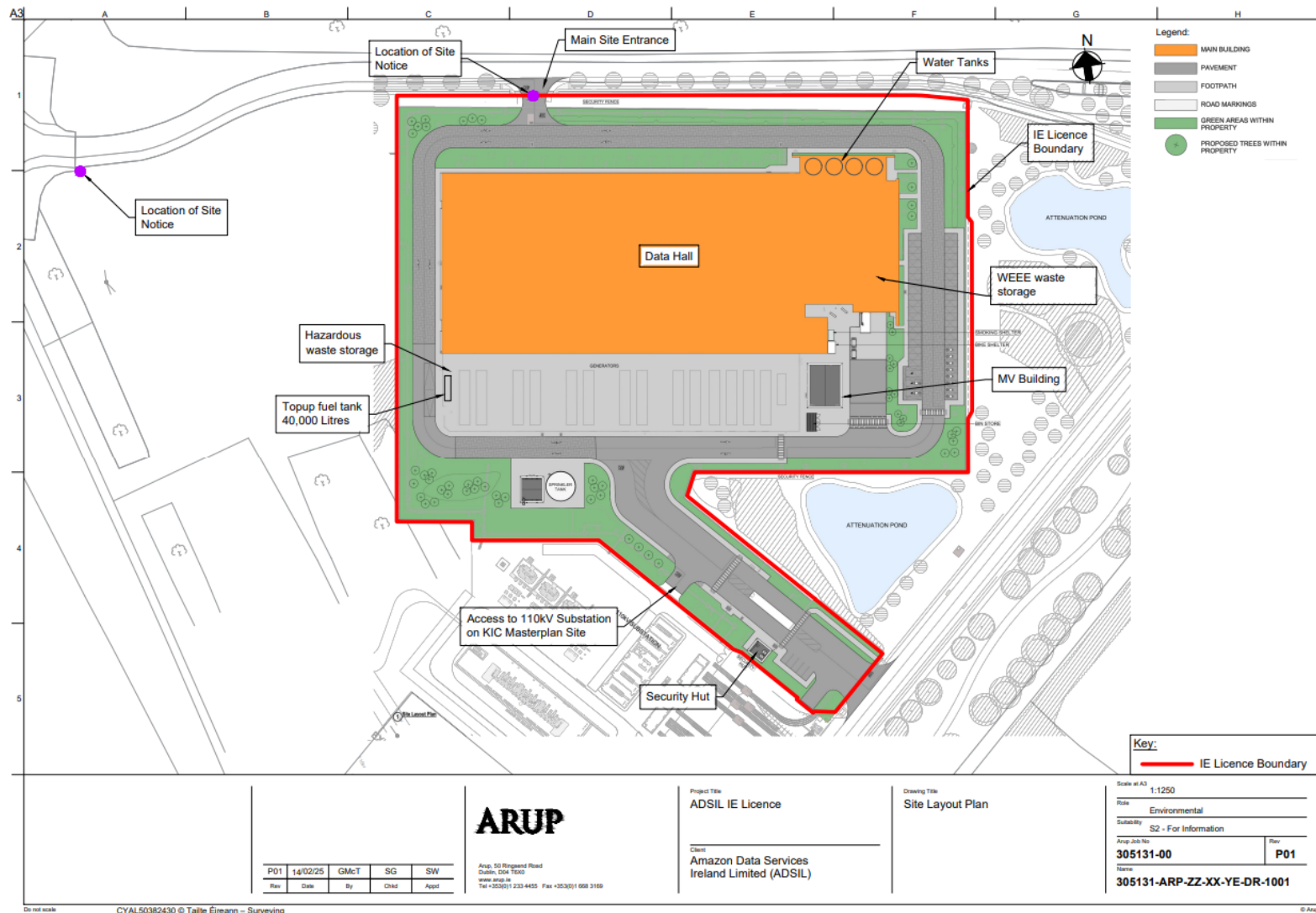


Figure 1: Installation Site Layout | Not to scale | Arup ©

### 1.3 Activities Licence / Permit Details

An application is being made to the EPA for an IE licence. The requirement for an IE Licence is outlined within the First Schedule of the EPA Act 1992, Activity 2.1 *Combustion of fuels in installations with a total rated thermal input of 50 MW or more*.

Final grant for the Installation was received in January 2024 from Kildare County Council (KCC) (KCC Planning Ref. 23/60047), as part of planning permission for the wider KIC Masterplan site.

All planning permissions for the Installation that are relevant to this IE licence application under Class 2.1 of the EPA Act 1992 (as amended) have been granted on site. Any further information, including reports and advice, relating to the environmental impact assessment of the proposed activity is made available and contained within Section 7 of this licence application.

The planning history of the Installation site is set out in Attachment-6-1-Stakeholder-Engagement. Additionally, the Environmental Impact Assessment Report (EIAR) and Appropriate Assessment (AA) Screening Report prepared as part of the planning application for the KIC Masterplan site, which includes the Installation, and have been submitted with this IE Licence application, refer to Attachment 6-3-6 and Attachment 6-2-1 respectively.

The total combustion of fuels at the Installation exceeds 20MW thermal input threshold. The Installation will operate under a Greenhouse Gas (GHG) Permit under the Emissions Trading Regulations<sup>3</sup>. This will be applied for after the submission of this IE licence application.

### 1.4 Closure Scenarios

This report covers a single closure scenario, it has been assumed that any closure of the Installation site will be expected and therefore will be a well-planned and well-resourced event. It has been assumed that the on-site plant and equipment will be decommissioned, but that the Installation site infrastructure (i.e., the building and associated services/utilities) will remain and will continue to be used for a similar use or repurposed for an alternative development.

Upon cessation of activities at the Installation there will be no further wastewater emissions to sewer or emissions to atmosphere. There will also be no substances with the potential to release fugitive emissions remaining on site once the Installation is closed, i.e., clean closure is expected.

The Applicant will have the financial and personnel resources to implement the Closure Plan and will utilise staff resources to form a team to manage and execute the plan, supplemented where appropriate by external specialist. This team will be responsible for managing and executing the plan. Outside contractors required for cleaning, waste disposal or recycling activities will be fully approved and licensed.

It is anticipated that an orderly shutdown of all the site activities would occur on a phased basis over approximately six (6) to twelve (12) months.

### 1.5 Restoration / Aftercare Plan

This Installation is located on a site that was previously used by Hewlett Packard (HP) Manufacturing Limited which was licensed for the use of coating materials in processes using organic solvents and electroplating operations. The licence for the facility was surrendered in 2019 with the EPA concluding that the “*condition of the installation is not causing or likely to cause environmental pollution and the site of the activity is in a satisfactory state.*” Baseline reporting included with this IE Licence application (Attachment 4-8-2) has concluded that no evidence of significant contamination was found within the Installation site, and it is anticipated that there will be no environmental liabilities once closure, decommissioning and residuals management are completed. Therefore, in accordance with EPA guidance only a Closure Plan is required and not a Restoration and Aftercare Management Plan.

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<sup>3</sup> European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 (Ireland)

A Screening and Complete Baseline report for the Installation site has been completed in accordance with the EU Guidance<sup>4</sup> for baseline reports. The report is included with the IE licence application documentation, refer to Attachment 4-8-2 Baseline Report.

The scope of this plan addresses the key issues, which would occur in an orderly shutdown of all the site activities on a phased basis over an estimated time of approximately six (6) to twelve (12) months.

## 1.6 Scope of the Closure Plan

The scope of the closure plan includes the following primary activities:

- Setting up a management structure to oversee the closure;
- Cancellation of incoming raw materials and cessation of all combustion activities and ancillary processes;
- All excess raw materials run-down or removed from site;
- Full decontamination and decommissioning of all operations equipment and building surfaces;
- All storage areas fully emptied and stored material transported off-site or disposed of;
- Decontamination, decommissioning and verification of all site utility services;
- Disposal or recovery of all waste materials in a manner that complies with regulatory requirements;
- Management and retention of all relevant records relating to movement, transfer or disposal of waste throughout the closure process - available for review by the Agency; and
- Independent verification and certification of clean closure status.

## 2. Criteria for Successful Closure

### 2.1 Overview

The basis of the Closure Plan is to ensure that, upon completion of the implementation phase of the plan, the Installation would be in a suitable state for future use and would not pose a risk to public health and safety or the environment.

It is not intended to remove all structures, systems, or plant equipment from the Installation site in this scenario. In general, specialised equipment, data servers, cabling, electronic equipment, office equipment, chattels etc. will be, where possible, sold for reuse, or disposed of off-site. The Installation buildings and common external utility features will remain in a suitable condition for future site users.

Assuming an orderly shutdown, key staff resources will be used to form a team to manage and execute the requirements of this Closure Plan, supplemented where appropriate by external resources. This closure team will be responsible for managing and executing the complete plan.

The benchmark criteria against which to evaluate successful closure is as follows:

- The Environmental Management System at the Installation will be continually implemented throughout the closure process;
- All buildings, facilities, and plant equipment decontaminated and secured from unauthorised access;
- The asset is left in a condition in which there will be no constraints on future land use due to residual contamination;

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<sup>4</sup> European Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on Industrial Emissions. EU: 2014/C 136/03

- All residual materials/wastes arising from decommissioning will be handled, packaged, stored and disposed or recovered in such a manner that,
  - The equipment or decontaminated materials can be sold for re-use or sold for scrap; or
  - The contaminated materials will be disposed of using authorised hazardous waste contractors.
- All relevant documents relating to waste, material movements, transfer or disposal will be managed and retained throughout the closure process;
- Sufficient funds will be available to cover the full cost of closure; and
- Agreement is reached with the Agency that the Installation site has been returned to a satisfactory state.

Assuming an orderly shutdown, the Applicant will use key staff resources to form a team to manage and execute the requirements of this Site Closure Plan, supplemented where appropriate by external resources. This closure team will be responsible for managing and executing the complete plan.

## 2.2 Roles and Responsibilities During Closure

The following personnel outlined in Table 1 will have specific responsibility in the event of closure of the Installation site. In the case of an orderly shutdown, the Site Lead, in discussions with the applicants European Management Team, will determine if and when the Installation is to be closed and will have ultimate responsibility for ensuring a clean site closure occurs.

**Table 1: Roles and Responsibilities of Staff as part of the Closure Plan**

| Personnel   | Area of Responsibility as part of Closure Plan   |
|---|--|
| Data Centre Engineering Operations (DCEO) Area Manager                | The Area Manager will have ultimate responsibility for overseeing the closure process.   |
| DCEO Facilities Managers (for the data storage facility)              | The individual Facilities Managers will have responsibility for overseeing the closure process at their respective data storage facilities and will co-ordinate the efforts between the different data storage facilities to ensure a cohesive approach.   |
| DCEO Chief Engineer   | <p>The Chief Engineers will have responsibility for implementing the Closure Plan at their respective data storage facilities. He/she will assign tasks for the process and ensure that closure is carried out as per this strategy. His/her primary responsibilities will include:</p> <p>Responsibility for ensuring all plant and equipment has been decommissioned by the Engineering team, and for the process of sale or disposal of the equipment once decommissioned,</p> <p>Responsibility for the management of non-plant related closure aspects i.e., overseeing the decontamination process and direction of all residual raw materials and waste for disposal off site. Engineering Operations Technicians (EOTs) will be retained for an appropriate period of time to assist with production close out. The Chief Engineer will provide direction to the onsite EOTs and any third-party vendors.</p>                                |
| Regional Environmental Manager  | The Regional Environmental Manager will provide input into the decommissioning process where required and will be responsible for approving the site sign off before requesting Agency approval.   |
| Regional Environmental Manager And/or Regional Environmental Engineer | <p>The Regional Environmental Manager and/or the Regional Environmental Engineer will be responsible for ensuring site closure processes are carried out with minimal impact on the environment and with no residual risk to the environment following closure of the site.</p> <p>They will provide correspondence and liaison with the Agency during the closure process. He/she will be responsible for coordination of external consultants to carry out environmental monitoring and closure audit. He/she will ensure all waste documentation is maintained and daily inspections are carried out during closure. They will be responsible for correct waste storage and disposal/recovery. During decommissioning, all documentation relating to all movements of materials/machinery whether disposed of or sold for reuse must be maintained. In addition, certificates for cleaning of all tanks, bund drains etc. must be maintained.</p> |



## 3. Site Evaluation

### 3.1 Operator Performance

The Installation is located within a site that was previously used by HP Manufacturing Limited which was licensed for the use of coating materials in processes using organic solvents and electroplating operations until 2019, when the license was surrendered. No evidence of significant contamination was identified from the accompanying Baseline Report (Attachment 4-8-2).

Standard Operating Procedure(s) (SOP), spill response procedures and an emergency management plan will be in place at the Installation site.

The applicant has no history of non-compliance, enforcement, incidents, or complaints at this site.

### 3.2 Environmental Pathways and Sensitivity

The Installation site has been evaluated in the Baseline Report (Attachment 4-8-2). The Baseline Report sets the benchmark for closure.

Based on the site-specific data available from the KIC Masterplan site investigations undertaken in 2019 and 2020, and prior to the construction of the KIC Masterplan site, an assessment of source-pathways-receptors has been completed. The following conclusions have been made:

- Bedrock at the Installation site consists of Carboniferous Limestone and a “*Locally Important*” aquifer with moderate vulnerability.
- The KIC Masterplan site, which includes the Installation site, was previously used by Hewlett Packard (HP) Manufacturing Limited which was licensed for the use of coating materials in processes using organic solvents and electroplating operations until 2019, when the license was surrendered with approval from the EPA.
- Site specific soil and water quality data show no evidence of any historical contamination at the Installation site.
- Only bulk fuel is proposed to be stored at the Installation in double skinned tanks associated with each of the generators onsite and the top up tank. However, the risk prevention measures planned at the Installation significantly reduce the potential for an environmental impact to soil or water to occur. These measures include double contained fuel storage vessels, dual-contained fuel pipe system (when underground), and spill management procedures.
- Source-pathway-receptor linkages were assessed for potential contamination of soil or groundwater arising from accidental emissions of fuel from fuel storage tanks associated with each of the emergency generators and the top up tank at the Installation site. It was concluded that there will be no direct pathways to either the soil or groundwater environment. A leakage from the top up tank or the generator fuel storage tanks will be fully contained in the double skin lining of the tank, and leaks during fuel delivery will be fully contained within the continuous hardstand fuel delivery area. Any leakage outside of the fuel delivery area will be contained within the drainage system, which includes hydrocarbon interceptors. Drainage from the containment area(s) shall be diverted for collection and safe disposal. Spill kits and appropriate training will also be in place.
- Based on the assessment of the source-pathway-receptor linkages, there are no potential for impact of any downgradient protected sites. The Installation’s surface water network will connect to the KIC Masterplan’s stormwater sewer which will discharge to the Leixlip Reservoir. The Leixlip Reservoir ultimately flows into River Liffey. There is no hydrological connection identified between the Installation and the Rye Water Valley / Carton Special Area of Conservation (SAC) (1.6km north) or Royal Canal pNHA (1.3km north) as these are located upstream of the River Liffey and the Installation. An indirect hydrological connection exists between the Installation site and the Liffey Valley pNHA (2km northeast) through the stormwater discharge from the KIC Masterplan site to Leixlip reservoir. However, according to the EIAR prepared as part of the planning application for the KIC masterplan site,



which includes the Installation site, (KCC Planning Ref. 23/60047), “*Potential adverse effects on these European sites [from the KIC Masterplan site, which includes the Installation site] are highly unlikely given the distance of removal and integrated mitigation measures in place through standard nature-based SuDS measures on site*”.

### 3.3 Site Processes, Activities, Buildings, Plant and Equipment

The Installation will comprise 1 no. data storage facility (Data Centre Building B1). Construction of the Installation has begun and is expected to be completed by mid-2026. The entire KIC Masterplan site development is anticipated to be fully completed by 2035.

- Data Storage Rooms housing IT electrical equipment.
- Internal and External Air Handling Unit (AHU) Plant Rooms to house the equipment required to maintain the temperature, humidity, and power supply for the Installation.
- Administration areas (office space, meeting rooms, welfare facilities etc.).
- Emergency generators (and associated emissions stacks/flues).
- Fuel storage tanks associated with each emergency generator.
- Fuel top up storage tank.
- Rainwater storage tanks.
- Logistics and fuel delivery unloading bays and associated infrastructure.

The Installation site will also include a designated emergency generator compound for the supply of emergency power to the Installation.

The individual emergency generators will be housed within containers with various acoustic designed control measures in place including acoustic attenuation and exhaust silencers. Fuel will be stored locally in fuel storage belly tanks within each containerised emergency generator. There will be drip trays at the fuel fill points.

The containerised emergency generator housing will include retention in the base of the container. There will be leak detection systems within the contained area to alert in the event of a leak from the generator fuel tank or lubricating oil tank.

Should hydrocarbon be detected in the base of the housing containers, the system will send an alarm signal to the Building Management System (BMS) to alert the onsite Engineering Operations Technicians (EOTs). The onboard controller for individual emergency generators will be connected to the BMS.

The individual fuel storage tanks associated with the varying types of generators and top up tank have level gauges (high and low) connected to an onboard controller which will alarm to the BMS to prevent overfilling and identify a sudden loss of fuel within the tank.

### 3.4 Raw Materials, Products and Wastes

The Installation site will have limited raw materials that are stored as detailed below. It can be assumed in a worst-case scenario that the maximum quantity stored of each material will need to be managed at closure. Table 2 includes all hazardous substances associated with both the Industrial Emissions Directive (IED) Annex I activities and directly associated activities which have a technical connection to the activities carried out and which could have an effect on soil or groundwater pollution.

Where hazardous substances are listed under trade names, the chemical constituents have also been identified. For mixtures or compounds, the relative proportion of the largest constituent chemicals are identified.

The only chemical stored at the Installation site in notable quantities will be HVO, diesel, or a blend of HVO and diesel. HVO, where supply is available, will be the preferred source of fuel stored onsite and used to supply the emergency generators at the Installation. Where insufficient quantities of HVO are available, a

blend of diesel and HVO will be supplied to the fuel storage tanks, and in the absence of HVO, diesel will be supplied to the fuel storage tanks. Where HVO and diesel are blended in fuel storage tanks, the ratio of HVO : diesel in the fuel storage tanks will vary with the availability of HVO.

R32 refrigerant will be held within the Variable Refrigerant Flow (VRF) system for the offices. No additional refrigerants will be stored onsite.

There will be no other raw materials held onsite other than domestic cleaning chemicals for cleaning of the staff facilities. These will be managed by the cleaning company.

All oils, adhesives or other materials required will be brought onsite and removed from site by the relevant contractors.

The small amounts of hazardous waste generated will be stored in a designated, hardstanding storage area situated within the fuel unloading area. A small, covered bund container will be in place to contain any liquid waste that requires storage, where required. The waste will be collected from these areas by an authorised waste contractor for recovery and / or disposal off-site.

Additionally, the small amounts of waste electrical and electronic equipment (WEEE) generated will be stored in a designated, hardstanding area situated in the building within the logistics/storage area. A small, covered bund container will be in place to store WEEE. The waste will be collected from these areas by an authorised waste contractor for recovery and / or disposal off-site.

Waste oil and filters and waste batteries will not be stored onsite and will be removed by the maintenance companies during maintenance operations and change outs.

**Table 2: Storage of raw materials and maximum potential storage**

| Substance     | Area Served / Purpose                         | Expected Volume of Storage (Tonnes) |
|---------------|---|-------------------------------------|
| Fuel (HVO)    | Emergency Generator Fuel Source & Top Up Tank | 268.15 <sup>Note 1</sup>            |
| Fuel (Diesel) | Emergency Generator Fuel Source & Top Up Tank | 272.58 <sup>Note 2</sup>            |
| Fuel (Diesel) | Fire Sprinkler Pump Generators                | 0.77 <sup>Note 3</sup>              |
| R32           | Refrigerant for cooling systems               | 486.84 kg                           |

*Note 1: This value represents the total storage volume of HVO that may be stored onsite across the emergency generator belly tanks and the top up tank in a best case scenario where only HVO is stored onsite.*

*Note 2: This value represents the total storage volume of Diesel that may be stored onsite across the emergency generator belly tanks and the top up tank in a worst case scenario where no HVO is available and only Diesel is stored onsite.*

*Note 3: The fire sprinkler pump generators are diesel powered and will not use HVO in any circumstance. This value represents the total storage volume of Diesel stored onsite for use in the fire sprinkler pump generators.*

HVO, where supply is available, will be the preferred source of fuel for the operation of the emergency generators at the Installation. Where insufficient quantities of HVO are available, a blend of diesel and HVO will be supplied to the generators, and in the absence of HVO, diesel will be supplied to the generators. Where a blend of HVO and diesel is supplied to the generators, the ratio of HVO : diesel supplied will vary with the availability of HVO.

It is anticipated that waste generated from the Installation will be removed on a regular basis at least once monthly, it is not anticipated that there would ever be a substantial stockpile of waste at the Installation. The waste at the Installation during regular operation is primarily generated from the office and kitchen areas. The closure process will include undertaking an inventory of all materials and wastes on the Installation site.

## 4. Closure Tasks and Programmes

Upon cessation of operations and subsequent decommissioning at the Installation, it is anticipated that there will be no remaining environmental liabilities, i.e., Clean Closure is expected.

#### **4.1 Plant and Equipment Decontamination Requirements**

All plant and equipment at the Installation site will be decontaminated to ensure the removal of any hazardous materials. Equipment will be verified either analytically or through a visual inspection, as appropriate.

#### **4.2 Plant and Equipment Decommissioning Requirements**

During the planning phase prior to closure a cost benefit-analysis and risk assessment will take place to determine the future use of the Installation plant and equipment.

It is anticipated that all temporary fixtures and fittings will be cleaned / decontaminated and removed, and what is not recoverable will be recycled or disposed of as appropriate.

It is expected that no major demolition will take place and the Installation buildings and infrastructure will be left in place for future commercial/industrial use.

After decontamination, plant and equipment may be removed for use at other facilities, on sold, or left in place as for a future owner of the Installation.

#### **4.3 Surface Water Drainage Protection**

The following surface water drainage network protection measures will be implemented during decommissioning:

- Dismantling of equipment will take place indoors, where possible, isolated from any clean surface water collection points,
- All loading and unloading of vehicles as part of the decommissioning process will be isolated from clean surface water collection points and will be carried out at tanker delivery areas where any spills will be routed via ACO drainage channels and hydrocarbon interceptors to the foul drainage network.
- All waste oils/greases drained from equipment will be stored in containers on hard stand surfaced that have retention mechanisms in place any to ensure any potential hazardous material spills can be quickly managed and contained,
- The Installation's procedures for accident prevention and emergency response will be adhered to in the event of any potential spill, and
- Additional spill kit equipment will be brought on site during decommissioning works.

#### **4.4 Demolition**

No demolition is anticipated.

#### **4.5 Raw Materials, Products and Waste Disposal And / Or Recovery Requirements**

It is assumed that any shutdown of the Installation site will be a well-planned event known in advance. Therefore, the process schedules and cancellation of raw material inputs will be factored in. It is anticipated that all usable raw materials on the Installation site will be consumed prior to closure.

However, any residual raw materials will be documented and labelled. An inventory of any materials will be taken along with the identification of materials suitable for return to suppliers, transport to other facilities, or for sale to third parties.

All waste, both non-hazardous and hazardous, will be removed off-site for re-use, recycling, recovery and/or disposal by licensed waste contractors in accordance with regulatory requirements.

## 4.6 Contaminated Land Treatment, Removal and / or Disposal

There is no known existing contamination of soil at the Installation and, by implementing the procedures outlined in this report, it is not anticipated that any contamination will occur as a result of the decommissioning process. It is not anticipated that there will be any contaminated soil requiring removal/treatment upon closure.

The areas of the Installation site where decontamination of equipment will take place are hard stand surfaced that have retention mechanisms in place so any potential hazardous material spills can be quickly managed and contained.

In the case that there has been a risk of soil contamination, appropriate soil testing will be undertaken by independent consultants. Based on their advice a cost benefit-analysis and risk assessment will take place to assess treatment options. If removal of the soil is required, it will be disposed of at an appropriate non-hazardous or hazardous waste disposal Installation in accordance with good practice.

## 4.7 Closure Programme

This section outlines the phased procedures to be followed in the event of a site closure. It is anticipated that the date of closure will be known in advance and detailed closure planning and an independent closure audit will take place. After detailed planning, it is expected that the closure of the Installation site will take place over six (6) to twelve (12) months. The programme and tasks involved have been summarised in the sections below.

### Detailed Closure Planning

Prior to the closure of the Installation a detailed planning phase will take place that will include several actions including but not limited to; setting dates and timeframes for the closure and planning to run down raw material.

During the planning stage an inventory of any raw materials will be taken along with the identification of materials suitable for return to suppliers, transport to other facilities, or for sale to third parties. It is noted that in the event of a sudden closure, running down the quantities of raw materials on site will not be possible and the quantities to be removed may be up to the maximum volume of any particular tank.

A cost benefit-analysis and risk assessment will take place to determine the future use of the Installation plant and equipment. Plant and equipment decontamination, and decommissioning requirements will be determined, and contractors will be engaged.

All contracts relating to the delivery of supplies and materials will be cancelled. All contracts other than those that are concerned with the Closure Plan or related to safety of personnel or the environment will be terminated.

Notification to the Agency regarding the planned closure of the Installation will be supplied with the following information:

- a) The date when the activity will stop/stopped at the Installation site.
- b) Expected date of vacation of all staff from the Installation site.
- c) The proposed future use of the premises e.g., similar industrial use or redevelopment.
- d) Contact details for the company, post-exit from the Installation site.
- e) Contact details for the following:
  - Proprietor of the land on which the Installation site is situated,
  - Owners of the building and ancillary plant in which the activity is situated (if different from the operator of the activity),
  - Local Authority, and
  - Current occupiers of the building (where applicable).

- f) Proposals for revised sampling, analysis, and reporting arrangements on foot of the changes on site, for agreement with the Agency.
- g) Status of any associated bonds or financial provisions.

### **Independent Closure Audit**

An Independent Closure Audit (ICA) of the Installation site will be undertaken prior to cessation of operations and decommissioning of the Installation. The ICA will be prepared in accordance with all relevant Agency guidance. The scope of the ICA will have prior written approval by the Agency before being conducted, but will include:

- The identification and documentation of any soil, sub-soils, buildings, plant, equipment, or waste materials or substances that may result in environmental pollution.
- The identification of how environmental liabilities will be dealt with post-closure, and whether any remediation measures are necessary.

#### **4.7.1 Stage 1 – Disconnection and decommissioning of non-essential site services / utilities**

This task will include disconnecting all electrical and telecommunication connections and decommissioning the data halls and servers, and associated plant equipment including the cooling systems.

This is also expected to include, the disconnection of the emergency generators, transformers, water connections, and all other relevant operational equipment that will not be required for the closure phase.

Water sprinkler tanks will be drained down to the stormwater attenuation pond.

There are many fans, pumps and motors located throughout the site with Heating, Ventilation and Air Conditioning (HVAC) equipment, these will be disconnected.

It is assumed that only partial administration facilities will be required for the remaining site decommissioning operations and the successful completion of this plan. The non-essential areas will be cleared of office and kitchen, equipment and furniture etc. Outside of the wastepaper and other recyclables, the only anticipated difficult residuals associated with decommissioning of the administration buildings include office waste electrical and electronic equipment (WEEE). Due to the short life span of most office electronic equipment and sensitivity of the equipment due to confidential data, it is assumed that most of the electronic equipment will be considered waste.

#### **4.7.2 Stage 2 – Removal of excess raw materials from site**

Any excess raw materials, furniture, electronic equipment, catering equipment will be removed from the Installation site with the following options implemented in a hierarchical format:

- Return to suppliers,
- Transfer of materials to other sites,
- Transfer/sale to other companies in Ireland,
- Transfer to recovery/recycling companies, or
- Treating the material as a hazardous / non-hazardous waste (Stage 3).

#### **4.7.3 Stage 3 – Removal of hazardous / non-hazardous wastes from the site**

It is assumed that any materials that can be recovered or recycled will have been done so in Stage 2. The remaining material on site will be considered waste, either hazardous or non-hazardous.

Removal of both hazardous and non-hazardous waste materials will be removed and disposed of in accordance with the Installation's IE Licence requirements and appropriate National and EU Legislation.

In the case of hazardous waste disposal, all requirements of the IE License will be applied, especially in relation to hazardous waste that is not typically generated at the Installation. Therefore, the management of

some of this material may require the prior written approval of the Agency before the waste can be removed from the site.

Administrative organisation of relevant paperwork will take place, according to EPA Guidelines, ensuring all waste shipments during this period are accounted for. This will facilitate the requirement to have stated criteria for validation of decommissioning.

#### 4.7.4 Stage 4 – Decontamination

This task specifically includes cleaning and decontamination procedures for all operational plant equipment. It is envisioned in this closure scenario on-site plant and equipment will be decommissioned but will remain in place and will continue to be used for a similar use or repurposed for an alternative development.

Contaminated solid waste arising from wipe-downs of equipment etc. will be collected in containers as hazardous waste, stored in the waste storage area.

##### *Cleaning of tanks/vessels*

This stage will start when storage tanks are emptied, there will be a limited number of storage tanks associated with the storage of raw materials that will be cleaned with standard procedures. Liquid wastes not suitable for discharge to sewer will be disposed of using a licenced / permitted contractor.

##### *Cleaning and decommissioning generators*

This tasks will include the cleaning of the generators and the removal and recovery/disposal of engine oil, greases and coolant, including pumping dry the fuel from the fuel storage tanks.

##### *Cleaning of ducts, vents, and pipework and decommissioning of HVAC units*

All ducts, vents, and pipework connecting various equipment and areas of the Installation site will be cleaned and decontaminated by a specialist cleaning contractor.

##### *Cleaning of hydrocarbon interceptors and drainage*

There will be interceptors and a significant process drainage network at the Installation associated with material storage areas, production, utilities, and abatement equipment.

#### 4.7.5 Stage 5 – Disconnection of remaining (essential) utilities

One of the final stages of decommissioning will include the disconnection of the electrical substation and the disconnection of the water supply.

Electrical substation and transformers will be rendered safe, and it is assumed that decommissioning will be carried out by maintenance staff. It is anticipated that a separate sub-system needed for emergency power / lighting and security will remain live.

Decommissioning of any cables will involve decoupling the cable from the switchgear. An excavation pit of approximately 10m<sup>2</sup> will then be established. The cables to be retired will be identified within this excavation pit and spiked (to ensure that decoupling from the switchgear has been successful and the cable is not live). The cables will then be cut and capped to protect the exposed cable. The excavated pit can be reinstated using the excavated material, with no import of fill required. The retired cables can remain in situ in the ground, with the potential for it to be returned to operation should it be required in the future.

#### 4.7.6 Stage 6– Removal of decommissioning waste and any residual hazardous materials

Any other waste or hazardous materials identified during the closure or required during decontamination or decommissioning will be stored in appropriate receptacles and will be disposed of by licenced / permitted contractor.

Each major area of the Installation site will have segregated skips allocated for the hazardous and non-hazardous waste. This waste will include things like:

- Spent mechanical parts; WEEE and waste decommissioning equipment,



- Solid hazardous waste (absorbent mats, contaminated Personal Protective Equipment (PPE)) stored in sealed and labelled containers,
- Contaminated containers, contaminated empty drums, Industrial Bulk Containers (IBCs) and other packaging,
- Non-hazardous solid waste (non-contaminated containers, drums, pallets, packaging and PPE); and
- General miscellaneous waste.

#### 4.7.7 Stage 7 – Documentation and certification of decommissioning and decontamination

All transfers of raw materials, product and waste materials off-site will be appropriately recorded and maintained throughout the process for verification. Records of sales for value products will be kept for inspection and waste transfer documentation and consignment notes will be maintained on site for the duration of the decommissioning process and will be available after closure if required.

## 5. Closure Plan Validation

### 5.1 Environmental Monitoring

Environmental monitoring will be conducted upon agreement and request of the Agency. Once operations cease and site is decommissioned, there will be no significant emissions to atmosphere at the Installation so monitoring of emissions will not be required.

In terms of the test programme, it is proposed to comprise the sampling and analysis presented in Table 3 as a minimum. It is anticipated that this scope will be refined and agreed with the Agency in advance of the assessment following confirmation of closure.

**Table 3: Proposed sampling and analysis plan for the Installation during and after closure**

| Media                             | No. of Samples / Parameters   | Description / Locations       |
|-----------------------------------|---|-------------------------------|
| Soil                              | Samples at varying depths for soil chemistry for all known contaminants used/present on site at the time of closure | To be agreed with the Agency. |
| Groundwater                       | Samples for chemical characterization including all known contaminants used/present on site at the time of closure. | To be agreed with the Agency. |
| Sewer                             | Sampling as per IE licence requirements over the closure period   | To be agreed with the Agency. |
| Surface Water Drainage            | At minimum, weekly visual inspection during closure period.   | To be agreed with the Agency. |
| Ambient Dust and PM <sub>10</sub> | Sampling at several locations (upwind and downwind) for total dust and PM <sub>10</sub> .                           | To be agreed with the Agency. |

### 5.2 Closure Validation Audit

Following completion of the site closure, a validation audit will take place to ensure that the details outlined in this Closure Plan and factors raised by the approved Independent Closure Audit have been implemented.

As previously noted, it is not envisioned that there will be any residual contamination, and therefore an audit to ensure contamination does not exist is not expected.



### 5.3 Closure Validation Audit Report

As required by the IE Licence, a final validation report for the Installation site will be submitted to the Agency upon execution of the Closure Plan. The report will present all of the information required to demonstrate that the criteria for successful closure has been achieved as well as the information necessary for making an application for surrender of IE Licence, where appropriate.

This audit will contain the following details:

- Name of person(s) completing closure audit,
- Any environmental liabilities or remediation issues and how these shall be dealt with post closure,
- Proposal for revised sampling analysis and reporting arrangements on foot of changes on-site for agreement with the Agency,
- Name of person(s) completing contaminated land/hydrogeological investigation; and
- Names of all waste handling contractors during closure i.e., waste contractors, proposed final destination etc. and waste disposal documents.

### 5.4 Closure Validation Certificate

The site operations staff and its consultants will carry out the above tests and investigations and submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

## 6. Financial Provision / Costing

The costings have not been estimated and will be completed at a later stage as required and will include at a minimum:

- Plant and equipment decontamination costs
- Plant and equipment decommissioning costs
- Demolition costs
- Waste recovery or disposal costs
- Environmental monitoring costs
- Site security costs
- Validation costs Management and utility costs

The financial provision is to be agreed with the EPA subject to the approval of the costs by the EPA, set out in this Closure Plan.

## 7. Closure Plan Review and Update

This outline Closure Plan is provided to support the IE license application. This outline Closure Plan may be reviewed and updated as necessary to take account of any significant changes to the site, processes, available technology or costs.

The cost of implementing the Closure Plan will be borne by the Applicant in the event of closure of the Installation.

A final Closure Plan and costing of the closure activities will be provided to the EPA at request, after the IE licence has been granted.