Infinis
Site Closure Plan
Silent Valley Landfill Gas Utilisation Plant

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1 PURPOSE

This document describes the measures which will be taken at the Gas Utilisation Plant (GUP) to ensure that the site is returned to a proper state once power generation permanently ceases.

1.1 Executive summary

Infinis operates a Site Management System (SMS) that addresses all aspects of the management of the GUP. This system outlines operating procedures in place to prevent deterioration of the site as a result of activities undertaken at the installation.

Given the adequacy of current pollution prevention measures it is considered that no emissions from the installation to soil and shallow groundwater are taking place. It is therefore deemed unnecessary to undertake regular environmental monitoring including the collection of baseline soil and groundwater reference data.

If any evidence of contamination was encountered during decommissioning, the need for remedial action (e.g. the removal of contaminated soils) will be assessed. This would be discussed in more detail during site closure.

Site infrastructure (e.g. process units, tanks, storage areas, transformer unit and hard-standing) will be monitored until cessation of activities, reducing the likelihood of structural breaches in site structures during decommissioning.

2 BACKGROUND

The GUP is regulated by an Environmental Permit.

Environmental permits were previously known as:

- Pollution, Prevention and Control (PPC) permits or
- Waste Management Licenses (WMLs)

PPC permits and WMLs automatically became known as Environmental Permits with the introduction of the Environmental Permitting Regulations on 6 April 2008.

Gas utilisation activities were reclassified as Directly Associated Activities as a result of changes brought about by the Industrial Emissions Directive.

Novera, part of Infinis, is defined as the permit operator for the GUP. Infinis therefore has overall responsibility to ensure that the requirements of the permit are met.

3 INTRODUCTION

The purpose of this document is to:

- record the steps that will be taken to close the site following the cessation of gas utilisation activities
- demonstrate how the activities can be decommissioned to avoid any pollution risk and return the site to a satisfactory condition.

Definite closure will occur when the adjacent landfill no longer produces sufficient gas to sustain electricity generation. It is likely, however, that some provision for landfill gas control will still be required once generation ceases. Prior to any decommissioning work, this requirement will be assessed in conjunction with the landfill operator, to ensure that adequate control of any residual landfill gas is maintained.

This report shall be subject to periodic review in accordance with the permit.

The initial baseline conditions and nature of the site prior to commencement of the prescribed process, the nature of the potentially polluting substances stored on site and the potential pathways are detailed in the Application Site Report (ASR) and other documents accompanying the original permit application.

4 INSTALLATION DETAILS

The installation is located at Silent Valley Landfill Site, Cwm, Ebbw Vale, Gwent, NP23 6PZ. The centre of the site is at National grid reference (NGR) SO 184 067 and covers an area of approximately 700m^2.

The Permit applies to the activities listed within the GUP Permit only.

Landfill-related activities are contained within a separate landfill permit.

4.1 Raw materials

Raw materials have been selected that minimise environmental impact. Consideration is given to such factors as degradability, bioaccumulation potential and toxicity.

A Raw Materials Assessment is submitted to the Regulator as part of the annual permit report each year.

4.2 Waste streams

A Waste Minimisation, Recovery and Disposal Assessment is submitted to the Regulator annually as part of the annual permit report. Recycling and reuse is conducted wherever practicable.

If any opportunities for reduction and improvements are identified, these will be implemented through an action plan which is produced and reviewed in accordance with the below procedure:

Procedure	Title
HSQE 43	Objectives and Targets

Waste oil is stored within a bunded tank. Waste oil is drained into the tank from the engines through operation of a valve. Oil is collected by a contractor licensed for consignment of hazardous waste and is transported off-site for fuel-oil recovery and consignment notes are provided to the site. Data relating to quantities and type of waste removed is summarised within a quarterly return provided by the waste handler.

4.3 Site Design

Site design is considered in the ASR and ensures that:

- underground tanks are avoided where possible (unless protected by secondary containment or other suitable programme)
- there is provision for the draining and clean out of vessels and pipe work prior to dismantling
- insulation is provided which is readily dismantled without dust or hazard and
- materials used are recyclable (having regard to operational and other environmental protection objectives)

Table 1 - Design and build considerations

Design and Build Consideration	Detail
Underground tanks and pipes	To avoid where possible. If required, secondary and/or leak detection will be installed and supported by the formal inspection, testing and maintenance programme employed at the installation
Materials used are recyclable	This will be incorporated into tender specifications as a general aim to be addressed where practical
Emergency preparedness	Ensure that contractors have made suitable provision for foreseeable environmental emergencies (e.g. spills if working with any liquids) during construction
Records	A Health and Safety file will be completed and maintained as a source of information for decommissioning in the future

4.4 Permitted Operations

The site is maintained and operated to prevent or minimise any pollution risk on closure and decommissioning.

Any events which are liable to result in significant pollution throughout the life of the site will be communicated to the Regulator in accordance with the requirements of the Environmental Permit.

5 SITE CLOSURE PLAN

Definite closure will occur when the adjacent landfill no longer produces sufficient gas to sustain electricity generation.

The Regulator will be informed in writing of the date of cessation of gas utilisation. This will enable the EA to inspect the site, approve the closure, and to agree the actions that will need to occur following closure.

5.1 Decommissioning at site closure

The installation is operated as a fully contained facility and consequently operations should not lead to a deterioration of the land by the introduction of any polluting substances.

On closure of the active site, decommissioning will involve bulk removal activities. This may include cleaning of tanks and associated pipe work, safe disconnection of services, general housekeeping measures and securing the site from unauthorised access.

Infinis will, where relevant, maintain records and/or certification of any site decommissioning activities undertaken by external contractors. Disposal of any solid wastes produced during decommissioning will be dealt with according to Infinis' waste management procedure with consignment notes/waste transfer notes maintained and registered waste carriers used. Liquid wastes will either be disposed of to the leachate collection plant on the adjacent landfill site or will be removed from site for disposal by a licensed carrier. Further details regarding decommissioning processes are provided in Table 2 below.

Table 2 - Decommissioning Process

Decommissioning Considerations	Approach
Plant run-down	The landfill gas engines will be decommissioned when the adjacent landfill no longer produces sufficient landfill gas
Pipelines – oil transfer	All pipe work to be identified and drained to allow for careful dismantling and cleaning. This should be done in such a way as to control the flow of materials from pipelines and allow for their safe and appropriate disposal. Where possible pipelines will be dismantled for reuse off-site. Where reuse is not feasible the equipment may be dismantled by licensed contractors and removed from site for recycling
Pipelines – gas	Where gas pipelines are removed from site, any condensate present will be drained and disposed of appropriately. Gas pipelines will be sealed prior to removal to ensure residues are contained
Protection against unauthorised access to the site	Site to be protected by a secure fence and routes of access to be locked / secured. Access to the site and dismantled equipment will be restricted to authorised persons only
Awareness and knowledge of contractors in minimising the risk to the environment	Specific site rules included within contracts and on-site induction for environmental protection given to all contractors prior to start of work
Suitability of vehicles for the removal of materials from the site	Ensure all vehicles used for the removal of materials from the site are suitable in terms of their size, design, construction and hazard markings
Protection of the ground and water with regard to the materials handled	Where materials are being removed, transported and handled, consideration will be given to the need for protective measures such as drain covers

Decommissioning Considerations	Approach
Liquid waste disposal	All wastes are to be clearly identified, appropriately packaged and correctly disposed of in accordance with relevant legislation (hazardous and non-hazardous wastes). Tanks will be drained and where possible, raw materials returned to the supplier or disposed of via a licensed waste contractor
Bunding	All bunds on site will be tested, then drained before being cleaned out
Solid waste disposal and emptying of storage areas	All skips will be emptied and disposal will be via licensed waste contactors
Decommissioning of transformers	Decommissioning of transformers will only be completed if the site power is not required to support safety critical operations (e.g. fire fighting). Procedure involves electrically isolating all transformers. Oil will be drained from the transformer and then the transformer will be sealed prior to removal from site for reuse or recycling
Safe disconnection of services	All major equipment will be isolated. Electrical services will be locked off and disconnected. All gas connections will be purged and locked off. All oil lines will be drained. To secure the site, power will remain connected to all safety systems
Plant and equipment washing	Where necessary, all plant and equipment will undergo cleaning to prevent the spread of contaminants. Wastewater from the cleaning will be treated dependent on content and disposed of according to legislation and installation guidelines
Emergency preparedness	Appropriate emergency response equipment and preventive practices will be in place such as fire fighting equipment and spill kits
Records	In the event that the site is to be decommissioned but not demolished, it is proposed that all documents and information relating to environmental and plant safety issues will be left in an easily accessible location on site

5.2 Demolition at site closure

Depending on the intended future use of the site and the timescales involved, demolition of site infrastructure may be required. It is considered that much of the site infrastructure could potentially be relocated to other similar facilities. Brick-built buildings may be left in-situ. This would be in agreement with the appropriate Regulator at the time.

5.3 Site closure – operational steps

Arrangements shall be made to ensure the cessation of deliveries of oil to the site. No deliveries shall be permitted to access the site and no oils shall be offloaded.

All material storage tanks shall be emptied and contents despatched from the site to an authorised or appropriate facility for disposal or reuse.

Electrical isolation of the generation plant shall be undertaken and all associated electrical systems locked out.

In accordance with the regular site inspection and maintenance programme, all hard surfaces and bunds shall be reviewed. Any noted spillages will be cleaned up. A note shall be made of any areas of hard standing and bunds where there are fractures, failed sealed joints or significant deterioration.

All perimeter fencing shall be checked and mended as required to ensure continued site security and to prevent unauthorised access.

A final inspection of the installation shall be undertaken. The inspection will ensure that all physically operated valves, including those on all storage tanks are in the closed position. The final inspection shall ensure that no wastes or oils remain on site – any such materials shall be removed and disposed of off-site to a suitably authorised facility.

Following final inspection, the Site Condition Report (SCR) will be completed with details of the decommissioning and remediation of the site. Evidence required to support the information in the SCR will include the following documents (where relevant)

- Site Closure Plan
- List of potential sources of pollution risk
- Investigation and remediation reports (where relevant)
- Land and/or groundwater data collected at application (if collected)
- Land and/or groundwater data collected at surrender (where needed)Assessment of satisfactory state
- Remediation and verification reports (where undertaken)

Finally the Statement of site condition will be completed, with a statement about the condition of the land at the site. This will confirm that:

- the permitted activities have stopped
- decommissioning is complete and the pollution risk has been removed
- the land is in a satisfactory condition

The completed SCR will be submitted to the Regulator

6 CONCLUSION

This SCP outlines the decommissioning procedures that Infinis will adopt prior to closure of the generation compound. These procedures are designed to ensure that there is no impact to land during the site decommissioning and closure process.

In considering and determining the site closure plan, and the steps to be taken in dealing with all raw materials, products and wastes created in the process, regard has been given to the fact that operations at the installation are BAT compliant. Following cessation of electricity generation, decommissioning shall be undertaken as described in this SCP. Therefore it is concluded that the site is unlikely to give rise to pollution incidents during the operational phase and will be decommissioned in such a manner as to avoid pollution risk and return the site of operation to a satisfactory state.

The initial baseline conditions and nature of the site prior to commencement of the prescribed process, the nature of the potentially polluting substances stored on site and the potential pathways are detailed in the ASR and other documents accompanying the original permit application. For final Permit surrender, assessment will be undertaken of the site to assess its condition relative to the initial site report. If areas of deterioration during the operation of the site are identified these areas will be re-examined and returned to a satisfactory state as defined by the ASR. A final assessment report will be submitted to the Regulator with a Permit Surrender application.

It is acknowledged that the plan may require to be updated if any structural or process changes take place at the installation. If and when this is deemed necessary the relevant amendments shall be made and a copy forwarded to the Regulator for review. In line with the requirements of the permit the site closure plan will be reviewed, not less than every four years.