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Permit Variation Application Report EPR/LP3127SM Version 2

Stockport FOG Treatment Facility

Eco Clarity Wastewater Services Limited

Report No. CRM.597.003.PE.R.002.C

'Experience and expertise working in union'

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Permit Variation Application Report
EPR/LP3127SM

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For:	Eco Clarity Wastewater Services UK Limited
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Author:	Jane Hall CEnv MCIWM, Associate Consultant
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1.0 Introduction

1.1 Purpose of the Report

1.1.1 This is Eco Clarity Wastewater Services UK Limited's ('the Operator') technical submission to support the application for a Permit Variation to Environmental Permit EPR/LP3127SM. The proposed changes are to 'Stockport Wastewater Treatment Works Bioprocessing' which is currently permitted to operate as a Waste Operation under Schedule 13 of the Environmental Permitting Regulations 2016, as amended 2025 ('EPR 2016').

1.1.2 The Facility is operated by Eco Clarity Wastewater Services UK Limited whose registered office is 36 Scotts Road, Bromley, England, BR1 3QD. The Company Number, as registered on Companies House, is 12842022.

1.2 Regulatory Status of Current Operations

1.2.1 The FOG Treatment Facility is installed at the United Utilities (UU) Stockport Sewage Treatment Works (STW). It is located within a waste operation 'Stockport Wastewater Treatment Works Bioprocessing' regulated by the EA permit referenced EPR/LP3127SM.

1.2.2 The Fats Oils and Greases (FOG) Treatment Facility is currently operating under a 'Local Enforcement Position (LEP), issued by the EA on 3 July 2025 as these processes are not included in the site's permit referenced above. The LEP letter confirms that the EA '*will not normally take enforcement action against you for the activity described in your proposal',* if requirements, which are specified in the letter, are complied with.

1.2.3 The LEP letter was issued to allow trials of FOG treatment processes in response to documentation submitted to the EA, which described the proposed processes and control measures in place to protect the environment. As the trial, which is in progress at the time of preparing this application, has been successful, the Operator has submitted this permit variation application to the EA for the longer-term operation of the FOG Treatment Facility.

1.3 Overview of Processes to be Included Within the Permit

1.3.1 The current permit does not include all the activities which need to be carried out to treat incoming wastes, which are currently operating for a limited period, without an Environmental Permit under the R&D exclusion as a trial, described above.

1.3.2 The Operator has developed and is continually refining, a technology to remove FOG waste from effluent flows before it causes complications within the sewer network including blockages and impacts on the effluent treatment processes.

1.3.3 FOG is generated during cooking and food processing. FOG waste has a high calorific content and can be an ideal feedstock for energy recovery if captured and processed into fuel such as biodiesel.

1.3.4 When it cools, FOG congeals and solidifies, accumulating in grease traps and separators as well as sewer walls forming hardened deposits. These deposits are often referred to as 'fatbergs'. 'Fatbergs' lead to a reduction in sewer conveyance capacity and ultimately to sanitary sewer overflows that cost water utilities companies hundreds of millions of pounds each year in reactive cleaning, repair, and maintenance fees.

1.3.5 The FOG Treatment Facility is designed to remove FOGs from effluents prior to entry into the STW to avoid these problems and comprises:

- Vehicle offloading and connection points.
- Buffer tank with solids screening
- Liquid waste storage and FOG treatment vessels.
- Solids storage.
- Wastewater discharge to UU STW via tanker.
- A secondary treatment tank.
- Water treatment chemicals (small quantities only).

1.3.6 A full description of the process is provided in Section 3.0.

1.4 Proposed Changes to Permitted Activities

1.4.1 The newly transferred activities in the current Waste Operation permit for the FOG Treatment Facility need to be changed, and new activities need to be added.

1.4.2 This variation application therefore requests the following changes to the permit:

- Change 1: Addition of treatment activities to allow the treatment of incoming effluents to extract FOGs which will be recovered at permitted waste treatment sites.
- Change 2: Change the current waste storage activity to reflect the proposed operations.
- Change 3: Change the input waste types and amend and consolidate EWC codes in Schedule 2 to reflect the proposed input wastes. See Appendix B for the proposed list of incoming wastes. Only one additional EWC code has been added which is 20 01 25 Edible oil and fat. This waste is similar in nature to other waste types already included in the Permit.
- Change 4: Changes to the site layout, see Drawings section, however the site boundary is not changing.
- Change 5: Administrative changes to the permit in the Schedules to reflect the proposed changes, notably:
    - Facility name 'Stockport FOG Treatment Facility' is proposed to replace 'Stockport Wastewater Treatment Works Bioprocessing' as this name doesn't accurately reflect the proposed treatment operations described in this application.
    - Table S1.1 (see Table 1 below)
    - Table S1.2 (see Table 2 below).

1.4.3 No changes to permit conditions under sections 1, 2, 3 and 4 are proposed and there are no changes to the site boundary in Schedule 7.

1.4.4 Table 1 below provides a list of current permitted activities and proposed changes from Table S1.1 in the Permit. Proposed changes are highlighted in green.

Table 1: Listed Activities and Directly Associated Activities (Table S1.1 in Permit)

Description of activities for waste operations	Existing or new?	Current Limits of activities	Proposed Changes
D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced)	Existing	Storage of waste prior to discharge into the inlet of the sewage treatment works. Transfer of waste received at site from the tanker into the inlet of the sewage treatment works. Subject to any other requirements of this permit wastes shall be stored for no longer than 1 year prior to disposal. Waste types suitable for acceptance are limited to those specified in Table S2.1 and Table S2.2. Waste types in Table S2.2 will not be subject to pre-acceptance or screening.	Retain activity to allow temporary storage of effluent prior to disposal within the sewage treatment works. Amend references to Table S2.1 and S2.2 which will be consolidated and replaced with a new table with a reduced list of input wastes. Proposed revised 'limits of activities': *Storage of waste prior to discharge into the inlet of the sewage treatment works.* *Transfer of waste received at site from the tanker into the inlet of the sewage treatment works.* *Subject to any other requirements of this permit, wastes shall be stored for no longer than 1 year prior to disposal.* *Waste types suitable for acceptance are limited to those specified in Table S2.1.*
R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection on the site where it is produced).	New	NA	Add new activity. Incoming FOG-containing liquid wastes are treated and require temporary storage prior to recovery (off-site) *Storage of waste prior to off-site recovery.* *Subject to any other requirements of this permit, wastes shall be stored for no longer than 1 year prior to disposal.* *Waste types suitable for acceptance are limited to those specified in Table S2.1.*
R3: Recycling/reclamation of organic substances which are not used as solvents.	New	NA	Add new activity. Incoming FOG-containing liquid wastes are treated prior to recovery (off-site). *Receipt of non-hazardous liquid waste up to 36,500 tonnes/year.*

Description of activities for waste operations	Existing or new?	Current Limits of activities	Proposed Changes
			Permitted waste types defined in Table S2.1 of this permit.

1.5 Changes to Operating Techniques in Permit Table S1.2

1.5.1 Table 2 below provides a list of current Operating Techniques included in the Permit and proposed changes.

Table 2: Changes to Operating Techniques (Permit Table S1.2)

Description	Parts	Date Received	Proposed Changes
Application	Support document in response to section 3a, Table 3b – General Requirements, Part B4 of the application form.	22/09/17	None of the techniques listed in the previous application are relevant to the proposed FOG Treatment Facility. Complete replacement required which includes the responses to application form questions in this variation application.

1.6 Site Location

1.6.1 The FOG Treatment Facility is located at:

Stockport STW
Swythamley Road
Cheadle Heath
Cheadle
Stockport
Greater Manchester
SK3 0NE

1.6.2 The location is centred at National Grid Reference (NGR) SJ 86624 89723, as illustrated with a star in Figure 1 below. Site layout plans are included in the Drawings section of this report.

Figure 1: Site Location



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1.7 Planning Permission Status

1.7.1 The proposed operations did not require changes to the current planning permission as they are covered within the scope of 'permitted development' at the UU Stockport site.

1.8 Type of Application

1.8.1 As there are changes required to be made to the existing activity in the Permit, and activities proposed to be added to the Permit, it is anticipated that the variation will be a 'substantial variation'.

1.9 Contents of the Application

1.9.1 This application document is structured as follows:

- Section 1.0 Introduction which describes the purpose of the application documentation.
- Section 2.0 Non-Technical Summary which provides an overview of the proposed changes and associated environmental impacts.
- Section 3.0 Process Description and Operating Techniques which describes the changes in detail.
- Section 4.0 Techniques for Process and Emission Control which describes the techniques proposed to control emissions and compares them with best available techniques.
- Section 5.0 Environmental Risk Assessment which describe the residual risk to the environment from the proposed changes, taking into account techniques to control emissions.

1.10 Application Information

Table 3: Application Information

Type of Application	Permit variation application
Operator	ECO CLARITY WASTEWATER SERVICES UK LIMITED
Application Reference Number	EPR/ LP3127SM/V002
Waste Operation Address	Stockport FOG Treatment Facility Heathside Park Road Cheadle Hulme Stockport SK3 0PT
Company Registration Number	12842022
Registered Office Address	36 Scotts Road, Bromley, BR1 3QD
Waste Operation Grid Reference	SJ 86624 89723
Pre-Application Discussions	Requested pre-application advice on 4 April 2025. No response received from the EA's Permitting Team.
Legal Status of Operator	Limited company, certificate is in Appendix E

Application Contact	Chris Clemes, CEO ccc@eco-clarity.com Mobile: +44 787 294 5815
Operational Contact	Chris Clemes, as above.

1.11 Relevant Legislation and Guidance

1.11.1 The proposed activities are subject to several National, European and International legislation and statutory and non-statutory guidance documents which have been referred to in preparing this application and associated documentation:

- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) referred to 'Industrial Emissions Directive' or 'IED' throughout this report.
- Waste Framework Directive 2008/98/EC revised 05/07/2018.
- EPR 2016.
- Environmental Permitting Core Guidance, Defra; March 2020.
- Environmental Permitting Guidance: The Waste Framework Directive, October 2009.
- Control and monitor emissions from your environmental Permit, Environment Agency (EA), 24 November 2022.
- Biological waste treatment: appropriate measures for permitted facilities, EA, updated 25 November 2024.
- Develop a management system: environmental Permits, EA, 3 April 2023.
- Risk assessments for your environmental permit, EA, 3 January 2025.
- The EA (Environmental Permitting and Abstraction Licensing) (England) Charging Scheme 2022.
- Guidance on the classification and assessment of waste (1st Edition v1.2.GB) Technical Guidance WM3 referred to as 'WM3' throughout this report.

2.0 Non-Technical Summary

2.1 Introduction

2.1.1 This non-technical summary provides an overview of an application submitted to the Environment Agency (EA) for a variation of Environmental Permit reference EPR/ LP3127SM. The application has been made to allow changes in operation to Stockport Wastewater Treatment Works Bioprocessing at Heathside Park Road, Cheadle Hulme, Stockport, SK3 0PT, referred to as 'The Facility' or the 'FOG Treatment Facility' throughout this document.

2.2 Description of the Facility and its Surroundings

2.2.1 The FOG Treatment Facility treats incoming effluent to extract fats, oils and greases ('FOGs') for recovery into biodiesel at an off-site permitted Facility. It comprises:

- Vehicle offloading and connection points.
- Buffer tank with solids screening
- Liquid waste storage and FOG treatment vessels.
- Solids storage.
- Wastewater discharge to UU STW via tanker.
- A secondary treatment tank.
- Water treatment chemicals (small quantities only).

2.2.2 The site is located within the Stockport Sewage Treatment Works (STW) in Cheadle Heath, Stockport, England. This facility is bordered by the River Mersey 100m to the north, with Mersey Vale Nature Park situated approximately 600 meters to the northwest. The surrounding land use is predominantly industrial and green space, with the Embankment Business Park located about 300 meters to the northwest.

2.2.3 Residential areas are in proximity to the site; the suburb of Cheadle Heath lies roughly (350 meters to the southeast. The Alexandra Hospital, a private healthcare facility, is located approximately 1.6 km to the southwest. There are open fields and a recreational ground 250m to the west and the M60 (Manchester outer ring road) 230m to the south.

2.3 Proposed Changes

2.3.1 The following changes are proposed to be implemented:

- Change 1: Addition of treatment activities to allow the treatment of incoming effluents to extract FOGs which will be recovered at permitted waste treatment sites.
- Change 2: Change the current waste storage activity to reflect the proposed operations.
- Change 3: Change the input waste types and amend and consolidate EWC codes in Schedule 2 to reflect the proposed input wastes. See Appendix B for the proposed list of incoming wastes. Only one additional EWC code has been added which is 20 01 25 Edible oil and fat. This waste is similar in nature to other waste types already included in the Permit.

- Change 4: Changes to the site layout, see Drawings section, however the site boundary is not changing.

- Change 5: Administrative changes to the permit in the Schedules to reflect the proposed changes

2.4 Point Source Emissions to Air

2.4.1 There are no point source emissions to air in the current permit and no point source emissions to air are proposed as a result of the changes. As the process is carried out at low temperatures, using mechanical processes, there are no emissions generated which require abatement.

2.4.2 Treatment processes are carried out in vessels within containerised buildings which do not require ventilation as minimal manual intervention is required due to a high level of automation. Treatment tanks are enclosed with no emission points.

2.5 Fugitive Emissions to Air Including Potentially Odorous Releases

2.5.1 There is minimal potential for the release of fugitive emissions into the air as vessels and tanks are enclosed and the treatment processes are within containers. There are no emissions points to release fumes, odours or pollutants from the processes, therefore releases are likely to be minimal.

2.5.2 There is a small potential for odour during tanker deliveries, however as the delivery tanker is enclosed and the treatment processes are enclosed, the potential for releases into the air are minimised.

2.5.3 Potential accidental releases have been assessed as part of this Application's ERA with the conclusion that the risk of impact is 'low'.

2.6 Point Source Emissions to Water and to Sewer

2.6.1 There are no point source emissions directly into watercourses in the current permit and no point source emissions to water or sewer are proposed as a result of the changes.

2.6.2 Only uncontaminated surface water drains into the main Stockport STW site surface water drainage system. The site has a small footprint therefore surface water drainage will not be significant.

2.6.3 Effluent which has been treated by the FOG Treatment Facility to remove FOG and reduce the chemical oxygen demand (COD) loading will be discharged into the Stockport STW for further treatment via tanker. As such, there are no emissions released into the sewer.

2.7 Fugitive Emissions to Water

2.7.1 The FOG Treatment Facility includes several process vessels which could result in accidental releases to water without controls in place should spills occur. However, there are physical measures including bunding and capture within on-site containment systems, and management controls, which are designed to prevent fugitive releases into waterbodies.

2.7.2 Potential fugitive releases to water have been assessed as part of this Application's ERA with the conclusion that the risk of impact is 'low'.

2.8 Noise and Vibration

2.8.1 The proposed changes will not result in an increase in noise levels above the noise level generated by current plant and equipment.

2.8.2 Potential accidental noise releases have been assessed as part of this Application's ERA with the conclusion that the risk of impact is 'low'.

2.9 Waste Generation

2.9.1 Wastes comprise material extracted from the treatment of incoming effluent by the FOG Treatment Facility. These include:

- Solids, which are further treated by anaerobic digestion (off-site).
- Treated effluent, which is transferred to the STW.
- FOGs ('brown grease') extracted from the incoming effluent for processing into biodiesel.

2.9.2 These wastes have been quantified in this Application's ERA.

2.10 Accidents and their Consequences

2.10.1 The Operator maintains an Accident Management Plan (AMP). Potential accidents which may arise during the operation of the Facility have been considered and assessed using three elements:

- Identification of hazards;
- Assessment of risks (and possible consequences); and
- Identification and implementation of techniques to reduce the risk of accidents (and contingency plans for any accidents that may occur).

2.10.2 A qualitative risk assessment has been carried out for the foreseeable accident scenarios associated with the proposed changes. The assessment concludes that the proposed changes present a low risk to the environment from accidents when control measures are considered.

2.10.3 A list of potential accident scenarios associated with the proposed changes with mitigation measures can be found in Appendix D.

2.11 Emissions Monitoring

2.11.1 As there are no point source emissions, no monitoring is proposed.

2.12 Overall Environmental Impact

2.12.1 The potential for impact on the environment due to the proposed changes to the operation of the Facility has been assessed, as described in Section 5.0 of this report. This variation application involves installation of plant and equipment comprising the FOG Treatment Facility, as described in Section 3.0. The main priority for the Facility is prevention of spills and leaks from the tanks and vessels installed on-site however with robust controls in place, risks are minimised.

3.0 Process Description and Operating Techniques

3.1 Introduction

3.1.1 This section describes the proposed activities which are currently under the scope of an R&D exclusion and are proposed to be operated under the permit, once varied.

3.1.2 The FOG treatment facility would collect a maximum of 100m^3 per day with an instantaneous maximum flow rate of 1.2m^3 per minute.

3.2 Operating Hours

3.2.1 The FOG Treatment Facility will operate continuously with waste deliveries made during the following hours:

- 08:00 to 17:00 Monday to Friday
- 8:00 to 13:00 Saturday
- Sunday and bank holidays - Closed.

3.3 Pre-Acceptance of Waste

3.3.1 The Operator has a waste pre-acceptance procedure in place at the Facility to ensure that the waste has been assessed for its suitability for receipt at the Facility. When a request is received from a commercial and industrial client, the following information will be requested as a minimum:

- details of the waste producer including their organisation name, address and contact details.
- a description of the waste.
- the waste classification code.
- the source of the waste.
- information on the nature and variability of the waste production process.
- information about the history of the producer site if it may be relevant to the classification of the waste.
- the waste's physical form.
- the waste's composition (based on representative samples if necessary).
- a description of the waste's odour and whether it is likely to be odorous.
- an estimate of the quantity you expect to receive in each load and in a year.

3.3.2 The information required at pre-acceptance will be reassessed if the:

- waste changes;
- process giving rise to the waste changes; and/or

- waste received does not conform to the pre-acceptance information.

3.3.3 In any event, the information required at pre-acceptance will be reassessed on an annual basis.

3.3.4 Records of the pre-acceptance checks on each waste stream will be maintained within the site office for a minimum of three years.

3.3.5 All waste deliveries will be scheduled as much as possible but some ad hoc deliveries may occur. Where ad hoc deliveries arrive on site then pre-acceptance checks will still be carried out at the site entrance before acceptance on site.

3.4 On-Site Waste Acceptance

3.4.1 Waste acceptance checks will be carried out on each delivery to ensure that the characteristics of the waste received matches the information provided during waste pre-acceptance. Waste acceptance checks include solids testing; an odour check; and a visual assessment of the waste as well as validation of all transfer documentation.

3.4.2 Each load arrives within a tanker which contains a fixed, known volume and tonnage of waste. Waste delivery vehicles enter the Facility where all paperwork is checked and initial inspection of the waste is carried out.

3.4.3 All wastes are offloaded directly into the receiving tank which is situated on an impermeable surface with self-contained drainage. If any non-compliant wastes are identified during waste acceptance checks, the wastes are returned to the producer. See Section 3.8 for a description of waste off-loading arrangements.

3.4.4 The waste producer shall be informed that the waste was non-compliant and given advice on the type of wastes which can be accepted. If the quarantined waste is offensively odorous it will not be accepted.

3.4.5 An electronic waste recording system is used at the Facility to track all waste deliveries. The waste recording system records the quantities of waste both by individual EWC and the overall quantity at the Facility. All waste information is kept for a minimum of 2 years after the waste has been removed from the Facility. No hazardous wastes are accepted at the Facility.

3.4.6 Back-up copies of computerised records will be stored off site and records shall be readily accessible in the case of an emergency.

3.5 Waste Tracking

3.5.1 The Operator will record the incoming and outgoing destinations for all waste materials using an electronic system, noting that electronic tracking of waste will be mandatory from April 2026 in accordance with the Defra Digital Waste Tracking system. On-site storage levels will also be monitored and recorded.

3.5.2 The following data is collected:

- the date the waste arrived on site
- the original producer’s details
- all previous holders
- a unique reference number

- the pre-acceptance and acceptance analysis results
- the package type and size
- the intended treatment or disposal route
- the nature and quantity of wastes held on site
- where the waste is physically located on site
- where the waste is in the designated disposal route
- staff (name and position) who have taken any decisions about accepting or rejecting waste streams and who have decided on recovery or disposal options
- details that link each waste container accepted to its consignment or transfer note
- non-conformances and rejections

3.5.3 The tracking system will also report:

- the total quantity of waste present on site at any one time and how that compares with the limits authorised by your permit
- the total quantity of end of waste product materials on site at any one time
- a breakdown of the waste quantities you are storing pending on-site treatment or waiting for onward transfer
- a breakdown of the waste quantities by hazardous property
- where a batch or load of waste is located based on the site plan
- the length of time a waste has been on site

3.6 Connection between the Operator and UU STW.

3.6.1 The operation of the FOG Treatment Facility is the responsibility of Eco Clarity Wastewater Services (the Operator). Whilst the site is located within the boundary of UU's Stockport STW, the management of the Facility, and compliance with Permit conditions, will be the sole responsibility of Eco Clarity Wastewater Services. There are connections between the Operator and UU which are summarised as follows:

- The land is leased by UU to the Operator under a leasing agreement.
- The incoming wastes are managed and contracted by the Operator under private contracts.
- Treated effluent from the FOG Treatment Facility is discharged into UU's STW for further processing in the existing UU Stockport STW via UU-approved tankers.

3.7 Management Techniques

3.7.1 The approach to permitting and regulation under EPR 2016 relies heavily upon the use of EMSs as a driver for environmental compliance and improvement. Under the Environmental Permitting Regime, modern regulation is fundamentally driven by applying a risk-based

approach to activities, where operators are encouraged to implement suitable management systems with which to operate, and to implement self-regulation and reporting. An operator who holds a Permit under EPR 2016 is required to have an appropriate EMS in place.

3.7.2 The Operator has implemented an EMS for the Facility in line with Environment Agency guidance 'Develop a management system: environmental permits', last updated 3 April 2023, and the key elements are described below.

Commitment from Senior Management

3.7.3 The Operator's senior management defines the environmental policy and strategy and ensures that it is appropriate to the nature and scale of the organisation's activities, products and services. The Senior Management Team is responsible for the delivery, design and maintenance of the EMS. All relevant staff are tasked with implementing the EMS to ensure its effectiveness.

Training and Competency

3.7.4 Training is carried out by the Operator and supported by equipment manufacturers and contractors where required. There is at least the minimum presence on site by a WAMITAB Technically Competent Manager. See Appendix A for technical competency information.

3.7.5 The design, installation and maintenance of the newly installed infrastructure, plant and equipment was carried out by competent people. Units are modular and containerised therefore minimal construction activity was required to install the plant and equipment.

Operating Techniques

3.7.6 The Operator has implemented the environmental operating controls required to ensure that they are suitable and sufficient to minimise the environmental impact of plant activities. The FOG Treatment Facility is operated to a similar high standard set by UU across the wider Sewage Treatment Works. There is a suitably qualified site operator on-site during working hours.

3.7.7 The Operator will establish, implement and maintain the processes required to prepare for and respond to, potential emergencies, as described in the Environmental Risk Assessment in Appendix D. The Operator will respond in such a way as to prevent or mitigate the environmental impact of any such event should it occur. Key tasks (including responsibilities) required to protect the environment will be documented by operational instructions.

Climate Change Impacts

3.7.8 A Climate Change Risk Assessment (CCRA) is included in Appendix F which addresses the requirements of the 'a changing climate' section of the EA guidance 'Develop a management system: environmental permits', last updated 3rd April 2023. The CCRA follows the staged approach described in EA guidance 'Climate change: risk assessment and adaptation planning in your management system', last updated 3rd April 2023.

Monitoring and Measurement

3.7.9 The Operator has suitable arrangements in place for the process monitoring and measurement of its activities that could have an environmental impact. To ensure the accuracy, reliability and consistency of measurements performed, all measurement equipment will be identified, and its calibration and / or monitoring status will be recorded.

Internal Audit Program

3.7.10 The Operator has in place an annual audit schedule which is maintained to monitor and evaluate all key activities undertaken that fall within the scope of the EMS. Records of such audits are maintained within the EMS.

Management Review

3.7.11 Senior Management will periodically review the EMS at planned intervals (at least annually) to ensure its continuing suitability and effectiveness. The results of the management review will be documented and communicated within the organisation.

Continual Improvement

3.7.12 The Operator will ensure that the EMS is used as the basis for driving continual improvement in all aspects of its operations. The Operator will ensure that continual improvement is achieved through an effective 'plan-do-check-act' process.

Record Keeping

3.7.13 The Operator will maintain operational and process monitoring records as required by the Permit.

Accident Prevention

3.7.14 Potential accidents and incidents have been considered in the Facility's EMS. The operator has also prepared an ERA (see Appendix D) which considers potential accident scenarios and mitigation techniques for the activities proposed to be carried out at the Facility.

Maintenance

3.7.15 The Operator maintains critical plant and equipment and there are service contracts or other similar provisions in place where tasks cannot be carried out by site staff.

3.7.16 The plant and equipment employs computerised controls. If fault is detected an automated email is sent to the site operator and the Eco Clarity management team. The system can be monitored remotely and if necessary, can be shut down remotely.

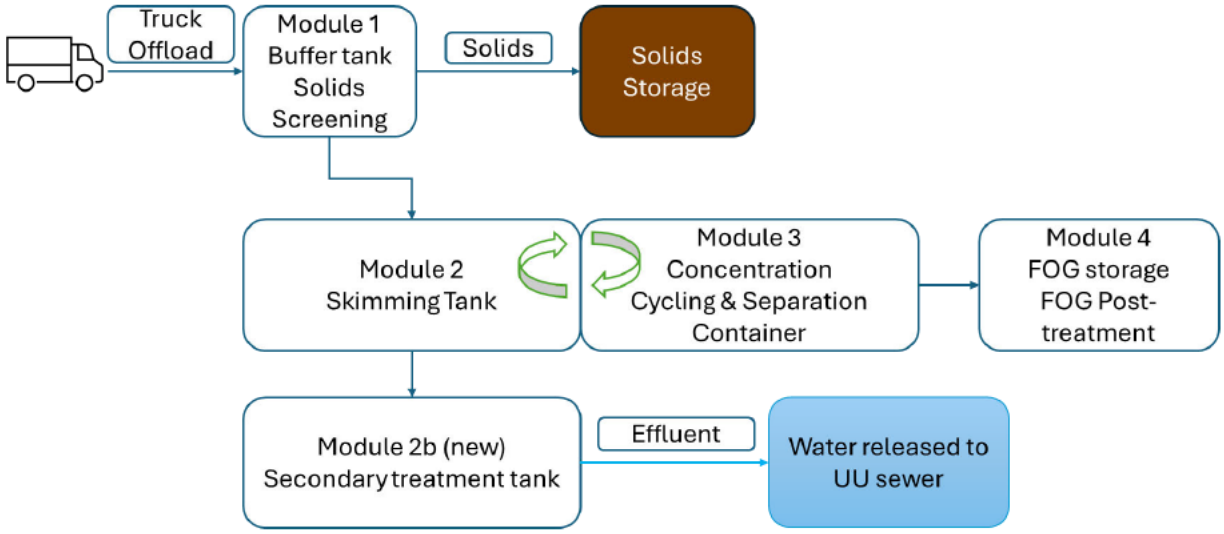
3.7.17 Plant and equipment is subject to regular inspections to check integrity. All plant and equipment will be maintained as per equipment manufacturer's instructions. Provision of spare parts is maintained on-site for known perishable items.

3.8 FOG Treatment Facility Process Description

3.8.1 The FOG Treatment Facility is a mechanical effluent treatment process which removes FOG from incoming wastewater to prevent problems in downstream sewage treatment plants such as blockages and 'fatbergs'.

3.8.2 The process is illustrated in Figure 2 and described in the sections below. Site Layout drawings are provided in the Drawings section of this report.

Figure 2: Updated Simplified Process Flow Diagram



Plant Specification

3.8.3 The plant specification is described in Table 4 below:

Table 4: Plant Specification

Parameter	Value (Maximum)
Input Waste Flow Rate (maximum)	1.2 m^3/minute
Input Waste Flow Rate (daily)	100 m^3/day
Energy Use	80 KWh (approximately)

Tanker Offloading into Module 1

3.8.4 Incoming wastewater is offloaded from a delivery tanker into a 6m^3 tank (see Module 1, which is the 'buffer tank' in Figure 2 above) via a 2mm screen which removes organic solid waste. Incoming waste types are limited to those listed in Appendix B. The tank is enclosed and situated within a bunded containerised building which can capture 110% of the contents of the tank. The tanker offloading area is bunded, with any transfer points provisioned with curbed drip collection to contain any minor spills which may occur during coupling. The tanker off-loading point is located on a sealed concrete slab.

3.8.5 Screened solids from the 2mm screen flow down an enclosed metal chute into a sealed storage tank for collection. This waste is removed from the site, and it is suitable for treatment by anaerobic digestion (AD). Settled solids in the tank are removed using a pipe and vacuum tanker and are also suitable feedstock for AD. Waste is transferred off-site within an enclosed vehicle by authorised waste contractors for recovery.

FOG Removal Process (Modules 2 and 3)

3.8.6 Following offloading, the screened effluent in the tank is passed over a weir with the FOG retained within the tank. This mechanical separation process (1st patent pending) does not require any chemicals.

3.8.7 The 'cleaned' resultant effluent generated following the removal of FOG is discharged into the UU STW for further downstream treatment at a maximum rate of up to 95m^3/day via tanker. Typically, this water discharge has less than 0.001% FOG present and the COD concentration is approximately 7-10,000mg/l (a reduction of 20% compared to the incoming effluent before treatment). See Module 2, which is the 'skimming tank', in Figure 2 above.

3.8.8 The operator may need to dose flocculants and coagulants into the skimming tank (Module 2) to promote solids removal by gravity settlement and COD reduction which will be determined by the ongoing trial. Material Safety Data Sheets (MSDSs) for the proposed coagulants and flocculants are provided in Appendix C.

3.8.9 The FOG-containing liquor within the tank (see Module 3, which is the 'separation container', in Figure 2 above) is subject to further mechanical treatment processing (2nd patent pending) to concentrate the FOG content. Again, a weir system is used which is in an adjacent fully bunded container. The concentration of the FOG is increased from 5% to over 70% during this 2nd treatment stage. This material, termed "brown grease" is non-hazardous. See MSDS in Appendix C. There is no discharge from this cycling process.

3.8.10 During the cycling process, the FOG-containing liquor is heated to 60°C and slowly passes through a weir system that separates the FOG from the effluent. When the FOG content has reached over 70% concentration, it is pumped into a bunded ISO container (see Module 4 'Fog Storage' in Figure 2 above). The FOG is heated and allowed to settle.

3.8.11 The heated residual liquor, following FOG separation, is returned to the previous separation stage into Module 2 to extract further FOG, retaining its heat content to conserve energy. This cycle continues until all FOG is removed from the system. There is no discharge from this cycling process. The brown grease FOG is collected and used to produce Bio-Diesel in an external biodiesel processing plant.

3.9 Settlement Tank (Module 2b)

3.9.1 The settlement tank dimensions and containment arrangement are described in Table 5 below. This tank (Module 2b) has been added to allow additional settlement of any residual solids, and to provide a more suitable off-loading point to reduce the suspended solids in the effluent and consequently reduce the COD. Discharge to the STW will then flow from this additional tank, and where we expect to see a significant drop in COD and SS

3.9.2 The addition of flocculants and coagulants in the skimming tank (Module 2) is projected to result in the removal of approximately 90% of solids from the incoming waste in the existing skimming tank. Residual suspended solids will settle in the base of the settlement tank (Module 2b) where they will be removed by suction directly into a waste tanker. Therefore, no storage vessels to store settled solids will be required.

3.10 Materials Handling and Storage

3.10.1 Transfers between tanks on-site is carried out within sealed pipework. Inspections are carried out daily to check for defects and leaks. There are no long pipeline runs as the site is compact and of small scale.

3.10.2 There are several vessels and tanks employed in the treatment processes which are described in Table 5 below.

Table 5: Tanks and Vessels

Vessel	Purpose and Contents	Materials of construction	Size	Secondary Containment	Other Pollution Controls	Surfacing
Buffer tank (Module 1)	Screen incoming FOG-containing liquor	314 stainless steel	6m³	Bunded to 110% capacity within container	Electronic level sensors and spill switches will automatically stop any offload in process and alert site operatives.	Concrete hard standing
Skimming Tank (Module 2)	Mechanical treatment of FOG liquor to increase FOG content to 70%.	314 stainless steel	27m³	Bunded to 110% capacity within container	Electronic level sensors and spill switches will automatically stop any offload in process and alert site operatives.	Concrete hard standing
Separation container (Module 3)	Heat treatment of FOG liquor to produce finished product.	314 stainless steel	2No. 0.71m³	Bunded to 110% capacity within container	Electronic level sensors and spill switches will automatically stop any offload in process and alert site operatives.	Concrete hard standing
ISO Storage Tank - Brown Grease (Module 4)	Storage of finished product.	314 stainless steel	20m³	Located within an area provisioned with a remote bund.	Electronic level sensors and spill switches will automatically stop any offload in process and alert site operatives.	Concrete hard standing
Solid waste storage tank	Storage of organic waste, before removal (from the initial screening stage).	Enclosed steel skip or similar	0.5-1.5m³	Located within an area provisioned with a remote bund.	Enclosed chute extracts waste into a covered skip. Daily visual check. Authorised waste contractor changes containers on request.	Concrete hard standing
Settlement tank (Module 2b)	To aid further settling of solids	Mild steel	24m³	Bunded to 110% capacity	Electronic level sensors and spill switches will automatically stop any offload in process and alert site operatives.	Concrete hard standing
Effluent Treatment Chemicals	To aid further settling of solids	Proprietary containers	<25L	Stored in bunded containers.	Daily visual check.	Concrete hard standing

3.11 Drainage

3.11.1 Effluent will be tankered from the FOG Treatment Facility by UU's tanker drivers and transferred into the head of the works.

3.11.2 Surface water drainage is directed into the wider site's surface water drainage system, segregated from foul drainage.

Subsurface structures

3.11.3 There are no subsurface structures.

Utilities

3.11.4 Electricity is required to power the facility which will be drawn from the national grid. There is no independent energy generation proposed during the trial phase of this project.

4.0 Techniques for Process and Emission Control

4.1 Introduction

4.1.1 This section of the application reviews any implications of the changes to the activities at the Facility with regard to compliance with EA regulatory standards, specifically addressing the measures in the relevant technical guidance: Biological waste treatment: appropriate measures for permitted facilities, Environment Agency, last updated 24 November 2024 (the 'Biowaste Appropriate Measures').

4.1.2 This section of the report reviews the main techniques that will be used to prevent, or where that is not practicable, minimise emissions from the operation of the changes to the Facility, and demonstrates how the proposed Facility will continue to prevent emissions as a priority.

4.1.3 The Biowaste Appropriate Measures is for permitted waste management facilities that handle organic waste and is therefore the most applicable guidance document for the acceptance, storage and treatment of liquid waste, which is received by and stored at the Facility prior to the biological treatment of waste at the STW.

4.2 Application of the Biowaste Appropriate Measures Guidance

4.2.1 The proposed changes to the Waste Facility are addressed within several sections within the Biowaste Appropriate Measures however many sections are not relevant to this Application as the treatment processes do not involve biological treatment or other processed covered by this guidance.

4.2.2 Table 6 below presents a review of the Biowaste Appropriate Measures and provides justification for the exclusion of certain measures.

Table 6: Application of Biowaste Appropriate Measures Guidance

Section in Biowaste Appropriate Measures Guidance	Applicability	Included in Application?
3. Bespoke wastes suitable for biological treatment	Not applicable as no new waste types are proposed to be included in the Permit. The additional EWC code to be added is similar in nature to existing waste types.	No
4. Site location, design and capacity	Site location is not applicable as this is not changing, neither is the overall capacity. Design aspects are applicable to the proposed changes.	Yes
5. General Appropriate Measures	Relevant measures included in assessment.	Yes
6. Waste acceptance, pre-acceptance and tracking	Relevant measures included in assessment.	Yes
7. Waste storage, segregation, transfer and handling.	Most measures are not applicable as they are not changing. Only relevant measures included in assessment.	Yes, partially
8. Waste Treatment	Relevant measures included in assessment.	Yes
9. Outputs	Relevant measures included in assessment.	Yes
10. The Control of Major Accident Hazard	Not applicable, not within the scope of the COMAH 2015 Regulations.	No

Section in Biowaste Appropriate Measures Guidance	Applicability	Included in Application?
Regulations 2015 (COMAH)		
11. Emissions Control	Most measures are not applicable as there are no point source emissions. Only relevant measures included in assessment.	Yes, partially
12. Process efficiency	Most measures are not applicable as they apply to 'installations' to which the IED and the Waste Treatment BATc applies, whereas this facility is a 'waste operation'. Only relevant measures included in assessment.	Yes, partially
13. Bespoke waste assessment	Not applicable; this section applies to inhibition values for aerobic and anaerobic processes which are not carried out under the permit.	No

4.3 Section 4: Site location, design and capacity

4.3.1 Section 4 of the Biowaste Appropriate Measures requires operators to ensure that sites are designed to prevent emissions to the Environment.

- **Measures 4.1.1 to 4.2.15 apply to new facilities and have not been included in this assessment.**
- **Measures 4.2.16 to 4.3.4 broadly apply to the proposed changes.**

4.3.2 A comparison with Biowaste Appropriate Measures requirements is provided in Table 7 below.

Table 7: Site location, design and capacity

Technique	Details	Implemented? Y/N?
4.2 Site Design		
4.2.16 & 4.2.17 Secondary containment should be assessed against CIRIA standards.	Volumes of liquids stored are low. Bunding provided for all containers, see Table 5 and Table 7.	Yes
4.2.18 Monitor underground pipe work or ducting and drainage	No underground pipework.	NA
4.2.19 Underground tanks should have secondary containment.	NA, no underground tanks.	NA, no underground tanks.
4.3 Site Capacity		
Determine the actual physical capacity needed to manage, treat and store waste on your site without causing pollution. Provide enough space on-site to operate your plant and equipment safely, and to allow easy and environmentally safe storage and treatment.	See Table 8 below which describes capacity. Typical maximum storage time in effluent treatment tanks will be 1 day however there are occasions during major outages where this may be extended to 7 days in exceptional circumstances. Brown grease is collected gradually during the treatment processes and may be stored for up to 20 days to allow the tank to fill based on the lowest likely waste throughput. Wastes are not 'stored' in the tanks during normal operation as they operate as treatment tanks aside	Yes

Technique	Details	Implemented? Y/N?
	from ISO Storage Tank - Brown Grease (Module 4). Treated effluent is transferred by tanker to Stockport STW. Waste treatment capacity is limited to the size of the vessels and no wastes will be accepted if there is no capacity to treat them.	

Table 8: Site Capacity Calculation

Vessel	Purpose and Contents	Size
Buffer tank (Module 1)	Screen incoming FOG-containing liquor	6m³
Skimming Tank (Module 2)	Mechanical treatment of FOG liquor to increase FOG content to 70%.	27m³
Separation container (Module 3)	Heat treatment of FOG liquor to produce finished product.	2No. 0.71m³
ISO Storage Tank - Brown Grease (Module 4)	Storage of finished product.	20m³
Settlement tank (Module 2b)	To aid further settling of solids	24m³
	Total Capacity	78.42m³
	Maximum Throughput	100m³ per day
	Retention time for effluent treatment tanks	1 day as all effluent is processed upon receipt.
	Maximum storage time for brown grease	Up to 90 days [Note 1]

Note 1:
Retention time calculations may vary depending on the plant throughput. Optimally, the maximum potential throughput would be 100m³ per day. Brown grease is removed from site when the tank reaches capacity. Calculation of brown grease storage time has been determined based current low processing volumes, however, in the future, due to increased projected demand from feedstock suppliers, storage time may significantly reduce. Optimised throughput results in the following storage times:

- 5m³ FOG captured per 100m³ incoming waste received.
- 20-100m³ waste received per day resulting in 1-5m³ brown grease.
- Time taken to fill tank is 20 days if 20m³/day of waste is received and 4 days if 100m³/day is received.

4.3.3 In conclusion, the site's design and capacity meet the requirements of the Biowaste Appropriate Measures Guidance.

4.4 Section 5: General Appropriate Measures

4.4.1 Section 5 of the Biowaste Appropriate Measures requires operators to ensure that sites are managed to prevent emissions to the environment. The following sub-sections have not been included in this assessment:

- Measures within section 5.7 (fire and explosion prevention); and
- Section 5.8 (firefighting)

They are not applicable as there are no combustible wastes on-site. A potential for developing an explosive atmosphere was considered during the initial design stages and a DSEAR assessment was completed by the Operator to investigate the level of risk. The DSEAR Assessment concluded:

"No significant hazards have been identified as a result of emissions from the FOG processed by the hub. This leads to the conclusion that there is no formation of a potentially explosive atmosphere under normal operating conditions."

4.4.2 A comparison with Biowaste Appropriate Measures requirements is provided in Table 9 below.

Table 9: General Appropriate Measures

Technique	Details	Implemented? Y/N?
5.1 Management System	There are no changes to the EMS. A summary of the EMS is included in Section 3.7	Yes
5.2 Inspection, maintenance and monitoring	Planned preventative maintenance is implemented across the facility. A summary of the EMS is included in Section 3.7 which includes planned preventative maintenance (PPM) and monitoring.	Yes
5.3 Staff Competence	There are no changes to staff training and competency, which is implemented in accordance with EA guidelines. See Appendix A for technical competency certificates. A summary of the EMS is included in Section 3.3 which includes PPM and monitoring.	Yes
5.4 Accident Management Plan	The site has in place an Accident Management Plan, see Section 5.0 and Appendix D).	Yes
5.5 Preventing Accidental Emissions	Potential accident scenarios and prevention measures are described in Section 5.0 and Appendix D which are incorporated into site procedures including the Accident Management Plan. Spill procedures are in place to handle potential spills or leaks from the tanks and pipework. Safety features are connected to the site SCADA (Supervisory Control and Data Acquisition) system which is monitored 24/7 with additional visual checks completed by site staff. Incident response procedures are in place.	Yes
5.6 Security Measures	The Facility is situated within the UU STW which benefits from a secure boundary fence	Yes
5.9 Record keeping and procedures	A summary of the EMS is included in Section 3.3 which includes record keeping and procedures.	Yes
5.10 Contingency Plan	<u>Incoming wastes:</u> All incoming waste is pre-booked and ad-hoc deliveries are not accepted. If wastes cannot be accepted into the FOG Treatment Facility, for example due to maintenance, tankers will be turned away from site. Therefore, there is no requirement for a quarantine area. <u>Outgoing wastes:</u> Effluent: UU's STW is continually operational and has measures in place to ensure this, given its strategic importance. This means that receipt of effluent can be continually transferred.	Yes

Technique	Details	Implemented? Y/N?
	Solid residues: There are several AD plans which can accept the solid residues from the treatment processes. The Operator is not reliant on just one waste site.	
5.11 Plant Commissioning and Validation	The tanks are in situ as they are currently operating on a trial basis. They were subject to tests prior to operation.	Yes
5.12 Decommissioning and Mothballing	A site closure plan will be prepared within 12 months of issue of the varied permit, which will include the measures described in this measure. See Section 3.3.	Yes, following completion of site closure plan.

4.4.3 In conclusion, the site's management techniques meet the requirements of the Biowaste Appropriate Measures Guidance.

4.5 Section 6: Waste acceptance, pre-acceptance and tracking

4.5.1 Section 6 of the Biowaste Appropriate Measures describes waste pre-acceptance, acceptance and tracking requirements for operators. The following sub-sections have not been included in this assessment:

- **Measures within sections 6.4 and 6.5 as these processes are not carried out on-site.**
- **Measures within sections 6.7 and 6.8 as wastes are not contained, packaged or delivered in IBCs. All wastes are liquids which are delivered by tanker and directly discharged into the FOG Treatment Facility.**

4.5.2 A comparison with Biowaste Appropriate Measures requirements is provided in Table 10 below and see Sections 3.3 and 3.4 of this report for details of the Operator's pre-acceptance and acceptance checks.

Table 10: Waste Pre-acceptance, Acceptance and Tracking

Technique	Details	Implemented? Y/N?
6.0 General	All waste feedstocks and outgoing wastes are fully characterised in accordance with the EA's WM3 guidance. No hazardous wastes are accepted. Waste acceptance and pre-acceptance procedures in place. See Sections 3.3 and 3.4	Yes
6.1 Waste pre-acceptance and characterisation	Waste acceptance and pre-acceptance procedures in place. See Sections 3.3 and 3.4	Yes
6.2 Bespoke wastes	All waste feedstocks and outgoing wastes are fully characterised in accordance with the EA's WM3 guidance. No hazardous wastes are accepted. Waste acceptance and pre-acceptance procedures in place. See Sections 3.3 and 3.4	Yes
6.3 Waste acceptance and reception	Waste acceptance and pre-acceptance procedures in place. See Sections 3.3 and 3.4 Waste is accepted onto site via tanker and comprises only liquid wastes listed in Appendix B. See Process Description in Section 3.0.	Yes

Technique	Details	Implemented? Y/N?
	Non-conforming wastes (e.g. offensive, high-risk identified) will be rejected.	
6.6 Waste acceptance – Bespoke waste	All waste feedstocks and outgoing wastes are fully characterised in accordance with the EA's WM3 guidance. No hazardous wastes are accepted. Waste acceptance and pre-acceptance procedures in place. See Sections 3.3 and 3.4	Yes
6.9 Waste tracking	The Operator maintains accurate, up-to-date records that trace the movement of waste into, within, and out of the Facility. This includes documenting the quantity, nature, origin, destination, and treatment of waste, adhering to waste duty of care requirements. Records are readily available for inspection and retained for six years as required by the permit.	Yes

4.6 Section 7: Waste storage, segregation, transfer and handling

4.6.1 Section 7 of the Biowaste Appropriate Measures requires operators to implement appropriate measures concerning waste storage, segregation, transfer and handling to prevent emissions to the environment. The following sub-sections have not been included in this assessment:

- **Measures within sections 7.2 as there are no below ground tanks associated with the proposed changes.**
- **Measures within section 7.3 as there are no lagoons associated with the proposed changes.**

4.6.2 The remaining measures apply to the proposed changes to the permitted activities. A comparison with Biowaste Appropriate Measures requirements is provided in Table 11 below.

Table 11: Waste storage, segregation, transfer and handling

Technique	Details	Implemented? Y/N?
7 Waste storage, segregation, transfer and handling (general)		
7.0.1 Your facility must have enough physical and permitted capacity for the wastes, raw materials and 'end of waste' materials that you store on site.	Storage facilities are adequately sized, as demonstrated in Section 4.3.	Yes
7.0.2 You must comply with the limits set in your environmental permit and with any additional regulatory requirements that may apply.	Not applicable, no limits proposed to be set in permit as there are no point source emissions to water or air. Operator commits to complying with Permit conditions.	Yes
7.0.3 Store all waste on an impermeable surface with contained drainage that meets the recommendations of CIRIA 736.	See Sections 4.3 and 3.9.1.	Yes
7.0.4 Storage area drainage must: • contain all possible contaminated run off to prevent incompatible wastes coming into contact with each other;	Fire is not relevant to non-combustible liquid wastes. Wastes are limited to those in Appendix B. Waste materials with extreme pH, high solids or ability to precipitate or create vapours are not	Yes, where relevant

Technique	Details	Implemented? Y/N?
• make sure that fire cannot spread; • be designed to allow access for inspection and cleaning.	accepted and screened out by the pre-approval process.	
7.0.5 Keep clean rainwater separate from wastes and waste waters.	Tanks are enclosed therefore rainwater cannot contact waste.	NA
7.0.6 Store waste in locations that minimise handling waste.	Liquid waste is discharged from tanker into treatment tanks, then transferred via tanker into UU's STW.	Yes
7.0.7 Locate storage areas away from watercourses.	Storage area is approximately >100m from the nearest watercourse.	Yes
7.0.8 Store all waste within the security protected area of your facility	Security measures to prevent unauthorised access include lock-up of the containerised building. The Facility has security fencing around the perimeter and security gates at the main entrance.	Yes
7.0.9 EMS and OMP must clearly state maximum storage capacity.	Storage capacity is limited by tank size. Capacity is included in OMP and EMS.	Yes
7.0.10 Provide signage that clearly states the maximum quantity and types of waste.	Only tankered liquid waste is accepted onto site and storage is limited to the capacity of each tank. No opportunity for other wastes to be stored.	Yes
7.0.11 Monitor the quantity of waste stored on the site	Storage capacity is limited by tank size.	Yes
7.0.13 to 7.0.19 Storage and treatment of putrescible wastes	Liquid waste is stored and treated in enclosed tanks which is despatched to STW for further treatment (treatment processes are not within the scope of the permit). Solid removed from site by authorised waste contractor.	Yes
7.20 You must make your on-site waste inventory readily available.	Storage capacity is limited by tank size.	Yes
7.21 Safe pedestrian and vehicular access	Walkways and roadways are clearly marked. Delivery is via tanker which is supervised by trained drivers. Limited operative duties within the vicinity, other than inspections or during abnormal operation (e.g. accidents or incidents).	Yes
7.22 (applicable to bunkers/bays/pits)	NA	NA
7.1 Above Ground Tank and 'Bulk Storage'		
7.1.1, 7.1.3, to 7.1.11 covering specific requirements for tank design.	Tanks have secondary containment in place . See Table 5 for tank characteristics and pollution prevention measures. PPM is carried out in accordance with EMS and site maintenance procedures. Tanks were tested prior to use by the suppliers. Tanks are enclosed or located in container.	Yes

Technique	Details	Implemented? Y/N?
	There are no tank vents on externally located tanks. Other tanks are in container. Valves are positioned close to the base of the tank. There will be two isolation valves fitted prior to permit variation issue. There are no overflow pipes.	
7.1.2 Drainage plan	Drainage plan is in place.	Yes
7.4 Storage in containers, IBCs and drums		
7.4.1 to 7.4.20 Storage in containers, IBCs and drums	Only water treatment chemicals (raw materials) are stored in proprietary containers (25L drums). These containers are stored within the bunded containerised unit at the point of use. No waste is stored in containers.	Yes
7.5 Transfer of waste into and from sealed tankers and containers		
7.5.1 to 7.5.16 Transfer of waste into and from sealed tankers and containers	Waste deliveries and collections are supervised and carried out in accordance with site waste acceptance and collection procedures. Procedures include coupling and decoupling instructions. Records of all deliveries and collections are maintained in accordance with duty of care requirements. Transfers only occur within a dedicated area. Level alarms and automated shut-off valves in place to prevent overfilling. Transfers between treatment tanks are made using sealed pipelines. PPM is carried out in accordance with EMS and site maintenance procedures. Drainage within delivery/collection area can be isolated in the event of a spill. Spill kits in place.	Yes
7.6 Drainage		
7.6.1 – 7.6.3 Drainage	Drainage channels are inspected weekly, and defects, blockages or debris will be removed promptly and disposed of by authorised waste contractor.	Yes
7.7 Tank Inspection and Maintenance		
7.7.1, 7.7.2, 7.7.7, 7.7.13	No open storage of waste, not applicable.	NA
7.7.3 Alarms	High level alarms installed on all tanks.	Yes
7.7.4, 7.7.5, 7.7.6, 7.7.10, 7.7.11 Inspections, monitoring and supervision	Daily inspection of site including tanks. PPM is carried out in accordance with EMS and site maintenance procedures. Defects will be repaired promptly with records maintained. Deliveries and collections are supervised.	Yes

Technique	Details	Implemented? Y/N?
	Transfers between treatment tanks are completed via pipeline. Plant and equipment is resistant to the materials stored within. Pipework is labelled or colour coded as appropriate to indicate their contents.	
7.7.8, 7.7.9 Plant design	Plant and equipment is resistant to the materials stored within. There are no corrosive or hazardous materials which may require specific materials. Tanks and pipework are predominantly stainless steel.	Yes
7.7.12 Inspections – using non-destructive testing	Plant and equipment, including tanks, is subject to PPM and daily inspections.	Yes
7.7.13 Removal of grit and sediment	Grit is removed via valved outlets on tanks that may be susceptible to the build-up of sediment. Outlets are low-positioned to ensure maximum draw-off of grit.	Yes

4.6.3 In conclusion, the waste storage, segregation, transfer and handling techniques meet the requirements of the Biowaste Appropriate Measures Guidance.

4.7 Section 8: Waste Treatment

4.7.1 Section 8 of the Biowaste Appropriate Measures requires operators to implement appropriate measures for waste treatment. Most measures are not applicable as treatment processes are mechanical, not biological; therefore, only measures relevant to the proposed changes have been included in this assessment and the following sub-sections have not been included in this assessment:

- **Measures within sections 8.5 and 8.7 as there are no aerobic treatment processes.**
- **Measures within sections 8.6 as there are no composting treatment processes.**
- **Measures within sections 8.8 as there are no anaerobic digestion processes.**
- **Measures within sections 8.9, 8.10, 8.11 and 8.12 as there are no mechanical and biological treatment (MBT) and mechanical heat treatment (MHT) processes.**

4.7.2 A comparison with applicable Biowaste Appropriate Measures requirements is provided in Table 12 below.

Table 12: Waste Treatment

Technique	Details	Implemented? Y/N?
8.0 Waste Treatment (general)		
8.0.1 Storage capacity	Storage facilities are adequately sized, as demonstrated in Section 4.3.	Yes
8.0.2 Minimise process risks	Process is controlled using SCADA. Simple mechanical process with small amounts of	Yes

Technique	Details	Implemented? Y/N?
	coagulant / flocculant added into the skimming tank (Module 2).	
8.0.3 Beneficial waste treatment	Waste treatment processes result significant in reductions in FOG, COD and suspended solids prior to transfer into the STW reducing loading and pressure on UU's downstream processes.	Yes
8.0.4 Identify risks and characterise emissions from the process and abate them	No emissions directly into water, air land. Treatment processes reduce loading on STW.	NA
8.0.5 Accurate and up-to-date written details of your treatment activities and process controls	The process is controlled electronically via SCADA which can be accessed remotely. Any abnormal conditions will trigger automatic shut-down procedures. Records maintained.	Yes
8.0.6, 8.0.7, 8.0.8, 8.0.9 Contaminants removal, process management	FOG concentrations monitored. COD, suspended solids and FOGs are all reduced in the effluent by proposed waste treatment processes. Monitoring carried out to track these contaminant levels. The process is controlled electronically via SCADA which can be accessed remotely. Any abnormal conditions will trigger automatic shut-down procedures. Effluent arising from the Facility will not be accepted into UU's STW if it does not meet the agreed criteria. Non-compliant effluent can be cycled within the treatment processes to further treat and remove contaminants are removed from site by authorised waste contractor.	Yes
8.0.10 clearly define the objectives and reaction (chemical, physical or biological) steps for each treatment process.	See Process Description in Section 3.0.	Yes
8.0.10 Define the suitable inputs to the process	See Appendix B. Waste acceptance and pre-acceptance procedures in place.	Yes
8.0.11 Sample and analyse the waste to check that you have reached an adequate end point.	Brown grease FOG concentration monitored. Effluent monitored.	Yes
8.0.13, 8.0.14 Manage the pre-treatment of waste and biological treatment activities in a way that minimises the risk of pollution	See Process Description in Section 3.0. and Table 5 which describes pollution prevention measures.	Yes
8.1 Abnormal Operating Conditions		
8.1.1. You must assess the likelihood of abnormal operating conditions. You must make sure you continue to comply with permit conditions by taking steps to prevent, alert and mitigate these events. Abnormal operating conditions include: • unexpected releases or loss of containment	See Accident Management Plan in Appendix F.	Yes

Technique	Details	Implemented? Y/N?
• start up • unplanned stoppages and breakdowns • shutdown		
8.2 Pre-Treatment		
8.2.1, 8.2.2 Particle size reduction	Initial screening carried out to remove larger particles which may affect the process.	Yes
8.2.3 Pre-treatment techniques	See Process Description in Section 3.0.	Yes
8.2.4. You must carry out the pre-treatment of putrescible wastes in a suitably designed building	NA, no building. Processes are carried out within vessels within a containerised unit. No forced ventilation is in place. No biological processes are carried out which may result in degradation of materials and therefore emissions; only mechanical processes are carried out.	NA
8.2.5 Equipment is suitable for use	See Process Description in Section 3.0.	Yes
8.2.6 Operating plant and equipment beyond its design life.	No intention to operate beyond design life of plant.	NA
8.2.7, 9, 10 Plastics, non-compostables, contaminants	No packaging used; liquid waste only delivered by tanker	NA
8.2.8 Post treatment for removal of contaminants	NA, no post-treatment required.	NA
8.2.11 Consider your pre-treatment requirements at the design stage.	Design of plant involves screening to remove over-size particles.	Yes
8.2.12 Off-site pre-treatment	No off-site pre-treatment	NA
8.3 Process Monitoring Systems		
8.3.1 You must install and operate a manual or automatic monitoring system that supports effective operational management and minimises operational difficulties.	SCADA employed to monitor key process variables	Yes
8.3.2 Calibration of process monitoring equipment.	Calibration if instrumentation is carried out in accordance with supplier instructions.	Yes
8.4 Mechanical treatment		
8.4.1 You must segregate and condition the waste inputs before biological treatment.	No biological treatment carried out on-site. Screening and mechanical processes are employed to treat wastes which includes screening to reduce particle size.	Yes

4.8 Section 11. Emissions Control

4.8.1 Section 11 of the Biowaste Appropriate Measures requires operators to implement appropriate measures to prevent emissions to the environment. Most measures are not applicable as there are no point source emissions; therefore, only measures relevant to the proposed changes have been included in this assessment. Therefore, the following sub-sections have not been included in this assessment:

- Measures within sections 11 (general) 11.1, 11.2 and 11.6 as there are no point source emissions to air or abatement. All treatment processes are carried out within enclosed tanks and vessels with no open sources.
- Measures within sections 11.3 (meteorological conditions) is only relevant to sites where there are open sources of odorous materials. All treatment processes are carried out within enclosed tanks and vessels with no open sources.
- Measures within section 11.4 as there are no open sources of bioaerosols.
- Measures within section 11.7 as masking agents, chemical neutralising agents and topical barriers are not in use at the Facility.
- Measures within section 11.9 (Leak Detection and Review / LDAR) as there are no gases generated.
- Measures within section 11.11 as there are no material additional noise sources arising from the proposed plant and equipment. Whilst there are pumps associated with the transfer of liquid waste into the import points, the changes do not create any additional noise compared to current operations, as pumps have always been in use at the discharge point.
- Measures within section 11.8 relating to dust, ammonia, litter and particulates as they are not generated by the facility, including the proposed changes.
- Measures within section 11.10, pests, are not applicable as there are no open sources of nutrients which may attract pests such as vermin, birds and flies. All treatment processes are carried out within enclosed tanks and vessels with no open sources.
- Measures within section 11.13 relating to fugitive emissions to water where they have been covered in previous sections or are not relevant to the acceptance and storage of liquid waste. See Section 4.6 which includes measures in Appropriate Measures Section 7: Waste storage, segregation, transfer and handling.
- Any measures relating to abatement, buildings and contained air systems as no such apparatus is installed.

4.8.2 A comparison with Biowaste Appropriate Measures requirements sections 11.5 (odour), 11.8 (fugitive emissions to air, relevant measures only) and 11.13 (fugitive emissions to water) is provided in Table 13 below.

Table 13: Emissions Control

Technique	Details	Implemented? Y/N?
11.5 Emissions of Odour		
11.5.1 Develop and implement an odour management plan. 11.5.3 Review odour management plan.	OMP is in place and includes the proposed processes. See Appendix G. OMP is reviewed annually or following an incident. OMP includes odour monitoring, responding to incidents and complaints and a programme to reduce odour.	Yes

Technique	Details	Implemented? Y/N?
11.5.2 Odour monitoring	Odour monitoring is described in OMP and includes sniff testing. Odour monitoring to a recognised standard will be carried out if there are odour complaints associated with the import points.	Yes
11.8 Fugitive releases to air (relevant measures only)		
11.8.3 Use high integrity components.	Only high integrity components are installed. CE certification, tanks comply ISO standard where relevant.	Yes
11.8.4, 11.8.5, 11.8.13, 11.8.14 Measures concerning PPM and inspections (also covered in previous sections)	As described in previous sections, these measures are in place and will include all plant and equipment.	Yes
11.8.6 and 11.8.7 Pre-acceptance checks, waste acceptance checks, site inspections	As described in previous sections, these measures are in place. Non-conforming wastes (e.g. offensive, high-risk identified) will be rejected.	Yes
11.8.12 Stop using any vessel or tanks immediately if their integrity is compromised.	Inspections will identify defects and the use of buffer tanks will cease if integrity is compromised.	Yes
11.13 Fugitive releases to water (relevant measures only where not already included in this report)		
Measures relating to containment and site infrastructure	See Table 5 for tank and vessel characteristics and pollution prevention measures. See also Section 4.6 which includes measures in Appropriate Measures Section 7: Waste storage, segregation, transfer and handling	Yes
11.13.12, 11.13.13, 11.13.14 You must have procedures and associated training in place to make sure that you deal with spillages immediately. Replenish spill kits.	Spill kits are in place and staff are trained in their use. Spill kits are replenished after use. Spill kits include materials relevant to the liquid waste stored in buffer tanks including: Absorbent pipes Absorbent mats Oil absorbent pellets Drain protector mats	Yes
11.13.15 You must make sure your spillage response plan includes information about how to recover, handle and correctly dispose of all waste produced from a spillage.	Spill procedures are in place which cover these measures.	Yes

4.8.3 In conclusion, the emissions control techniques meet the requirements of the Biowaste Appropriate Measures Guidance.

4.9 Section 12: Process Efficiency

4.9.1 Section 12 of the Biowaste Appropriate Measures requires operators to implement appropriate measures to ensure that the process is operated efficiently. Most measures are not applicable as they apply to installations (the site is a 'Waste Operation'); therefore, only measures relevant to the proposed changes have been included in this assessment. Therefore, measures within sections 12.1, 12.3, 12.4 (energy efficiency) have not been included in this assessment.

4.9.2 A comparison with Biowaste Appropriate Measures requirements sections 12.0 (general) and 12.2 (raw materials) is provided in Table 14 below.

Table 14: Process Efficiency

Technique	Details	Implemented? Y/N?
12.0 Process efficiency (general)		
12.0. You must monitor and review how much: • water, energy and raw materials you use each year • residue and waste water you generate each year	Water, energy and wastes are routinely monitored. Resource efficiency is included in the site's EMS.	Yes
12.2 Raw materials		
12.2 Monitor and review raw material use.	There are minimal raw materials used at the FOG Treatment Facility. The only raw materials comprise water treatment chemicals (see MSDSs in Appendix C), which will be reviewed regularly to check whether there are alternatives with a lower environmental impact.	Yes

4.9.3 In conclusion, the process efficiency techniques meet the requirements of the Biowaste Appropriate Measures Guidance.

4.10 Site Condition and Closure

4.10.1 There are no new areas of land which need to be included in the Permit boundary.

4.10.2 The Facility has been designed to minimise environmental impact upon closure. Specifically, the following measures have been considered:

- There will be no underground pipework or tanks.
- There are no bulk fuel or chemical storage tanks.
- Materials used in the construction of the building will consider final disposal and will be re-used or recycled, where possible and foreseeable. Equipment is containerised therefore it can potentially be utilised elsewhere.

4.11 Site Closure Plan

4.11.1 The Facility's site closure plan will be updated within 12 months of issue of the Permit to include measures in place during decommissioning of the plant and equipment to prevent pollution.

5.0 Environmental Risk Assessment

5.1 Scope of the Assessment

5.1.1 An Environmental Risk Assessment has been compiled to determine the environmental risks posed by the operations at the Facility, and to ensure that there are no significant impacts on the environment and human health.

5.1.2 The following assessments have been carried out following the EA Guidance presented on the .gov website 'Risk assessments for specific activities: environmental permits', last updated 21 November 2023:

- Air quality;
- Surface water;
- Fugitive releases;
- Amenity impacts (noise, odour, pests);
- Accidents;
- Site waste; and
- Climate change.

5.1.3 There are no point source emissions to air therefore no modelling has been carried out. As the process is carried out at low temperatures, using mechanical processes, there are no emissions generated which require abatement. Treatment processes are carried out in vessels within containerised buildings which do not require ventilation as minimal manual intervention is required. However, the potential for fugitive or accidental releases into the air, including odorous emissions has been considered.

5.1.4 There are no point source emissions directly into watercourses. Only uncontaminated surface water is discharged to watercourses via the UU STW surface water drainage system. There are no emissions released into the sewer.

5.1.5 Potential environmental impacts are discussed in this section of the report. The outcome of these assessments is presented in Appendix D, which presents the results of the qualitative risk assessments which have been carried out to determine impact on the environment.

5.2 Facility Location and Environmental Setting

5.2.1 The site is located within the Stockport Sewage Treatment Works (STW) in Cheadle Heath, Stockport, England. This facility is bordered by the River Mersey 100m to the north, with Mersey Vale Nature Park situated approximately 130m to the northwest. The surrounding land use is predominantly industrial and green space, with the Embankment Business Park located about 200m to the northwest.

5.2.2 Residential areas are in proximity to the site; the suburb of Cheadle Heath lies roughly (350m to the southeast. The Alexandra Hospital, a private healthcare facility, is located approximately 1.6 km to the southwest. There are open fields and a recreational ground 250m to the west and the M60 (Manchester outer ring road) 230m to the south.

5.2.3 Key receptors that have the potential to be impacted by emissions from the site are summarised in Table 15 below including both ecological and human receptors. Locations of nearby ecologically sensitive receptors were identified using Magic.gov data sources. The following types of sites, areas or zones were checked for their presence within 2km of the facility:

- Nitrate Vulnerable Zone (NVZ);
- Local Nature Reserve (LNR);
- National Nature Reserve (NNR);
- Ramsar Site;
- Special Protection Area (SPA);
- Special Area of Conservation (SAC);
- Site of Special Scientific Interest (SSSI).
- Area of Outstanding Natural Beauty (AONB);
- Environmentally Sensitive Area; or
- National Park.

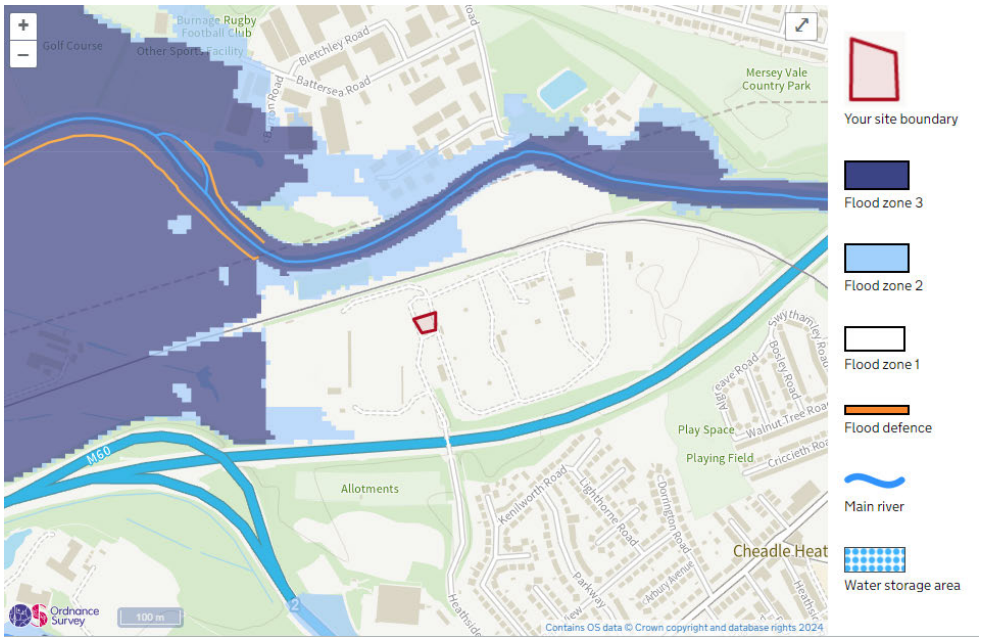
Table 15 Sensitive Receptors

Receptor	Type	Distance (m) from Facility	Direction
Ecologically Designated Sites			
Mersey Vale Nature Park LNR	Ecological	134	North
Abney Hall LNR	Ecological	485	Southwest
Heaton Mersey Common LNR	Ecological	1170	North
Stenner Woods and Milgate Fields, Didsbury LNR	Ecological	1804	West northwest
Other Receptors			
Principal bedrock geology aquifer	Hydrogeological	0	On site
Secondary A superficial deposits aquifer	Hydrogeological	0	On site
Stockport STW	Commercial	0	North, East, South and West
The Embankment Business Park	Commercial	202	North
River Mersey	Hydrological and Ecological	112	North
Heathside Park allotments	Agricultural	240	South
Agricultural land	Agricultural	259	West
Residential properties off Selsey Avenue (nearest residential receptor)	Residential	278	South southeast
Playing fields	Leisure	419	East southeast
Sports grounds	Leisure	437	Northwest

Receptor	Type	Distance (m) from Facility	Direction
Residential properties off Walnut Tree Road	Residential	499	East southeast
Residential properties off Craig Road	Residential	550	North northeast
Didsbury Road primary school	Educational	721	North
Cheadle Heath primary schools	Educational	753	Southeast
Mersey vale primary school	Educational	949	Northeast
Stella Maris school	Educational	988	North
Parrs Wood High school	Educational	1009	Northwest
St Johns Church of England primary school	Educational	1025	North northwest
St Winifred's Roman Catholic school	Educational	1033	North northeast
Residential properties off Morningside Drive	Residential	1074	West northwest
The Alexandra hospital	Healthcare	1079	Southwest
Meadowbank primary school	Educational	1216	South
Cheadle primary school	Educational	1299	Southwest
Stockport academy	Educational	1363	East southeast
Priestnall school	Educational	1430	North
The Barlow Roman Catholic high school	Educational	1578	Northwest
Larkhill primary school	Educational	1624	East
Tithe Barn primary school	Educational	1778	North northeast
Norris Bank primary school	Educational	1789	Northeast
Ladybridge primary school	Educational	1856	South southeast

5.2.4 **The FOG Treatment Facility is located within flood zone 1, as illustrated in Figure 3 below. Land within flood zone 1 has a low probability of flooding from rivers and the sea.**

Figure 3 Flood Risk Zones



5.3 Point Source Emissions to Surface Water Including via Sewer

5.3.1 All uncontaminated surface water drains to the main Stockport STW site surface water drainage system. The site has a small footprint therefore surface water drainage will not be significant.

5.3.2 There are no process emissions released into sewer (effluent is tankered to UU STW).

5.4 Fugitive Releases, Amenity and Accident Impacts

5.4.1 Potential scenarios arising from fugitive releases and accidents are identified in the ERA in Appendix D which have all been assessed as 'low risk' considering the controls in place; risks and control measures are also summarised in the sections below.

Fugitive Releases to Water and Land

5.4.2 Receptors identified are the watercourses, the ground and groundwater beneath the site. There are drainage ditches within the vicinity of the site, however they are not adjacent and therefore entry of pollutants into these ditches would be unlikely. The site is situated on aquifers in both the superficial and bedrock geology, however it is not within a Source Protection Zone.

5.4.3 There are only small volumes of chemicals stored on-site as the FOG treatment processes involve predominantly mechanical treatment techniques.

5.4.4 All tanks and vessels are provided with bunds sized to at least 110% of the contents (see Table 5). The water treatment chemicals will be in small drums and stored within the bunded containerised plant room.

5.4.5 Given the containment measures in place and the internal storage arrangements, there are minimal source-pathway-receptor linkages between these potential pollution sources and the ground or groundwater beneath the site. Plant and equipment are subject to PPM and routine inspections which would identify and prevent the potential release of aqueous emissions.

Fugitive Releases into the Air Including Odour

5.4.6 Receptors include employees of the wider Stockport STW and local residents and businesses.

5.4.7 There is minimal potential for the release of fugitive emissions into the air as vessels and tanks are enclosed and the treatment processes are within containers. There are no emissions points to release fumes, odours or pollutants from the processes, therefore releases are likely to be minimal.

5.4.8 There is a small potential for odour during tanker deliveries, however as the delivery tanker is enclosed and the treatment processes are enclosed, the potential for releases into the air are minimised. Delivery trucks enable back-venting during filling.

Noise Emissions

5.4.9 The potential for noise to be emitted from the FOG Treatment Facility is minimal as the process is not inherently noise generating and treatment processes are enclosed within containers. There is a small potential for noise to be generated in the event of a plant failure if equipment is operating abnormally. However, as the plant is subject to routine proactive PPM, this risk is minimal.

Pests

5.4.10 Biodegradable waste potentially attracts for pests such as flies, birds, vermin and mammals. However, as there are no open sources of nutrients and no packaged input wastes which, if discarded may attract pests such as vermin, birds and flies, pests are unlikely to cause a nuisance.

5.4.11 All treatment processes are carried out within enclosed tanks and vessels with no open sources. As the wastes are processed upon transfer, there is no build up of waste. Cleaning procedures ensure any spills and litter around the site are cleared up immediately.

5.4.12 Site inspections are carried out daily and should pests be present on site, a vermin/pest control contract will be set up with a pest control contractor. Records of all vermin and pest control visits and any incidents will be maintained and available for inspection.

Accidents

2.1.1 The key sensitive receptors identified for accidental risks include the local human population, adjacent farmland, ecological receptors, and other business park users.

2.1.2 In summary, accident scenarios associated with the operation of the Facility comprise:

- Containment Failure
- Fire
- Flood and other extreme weather events
- Failure of Plant/and or Equipment
- Staff Shortage
- Vandalism
- Vehicle Collision

5.5 Site Waste

5.5.1 Wastes are collected by authorised waste contractor in compliance with waste Duty of Care requirements.

Process Waste

5.5.2 Effluent which has been treated by the FOG Treatment Facility to remove FOG and reduce the COD loading will be discharged into the UU STW for further treatment by tanker. The purpose of the FOG Treatment Facility is to reduce the level of FOG in the discharge to reduce the potential for blockages caused by FOG content in the incoming effluent. COD and suspended solids are also reduced via the treatment processes.

5.5.3 Typically, this effluent has a less than 0.001% FOG present and COD is approximately 7-10,000mg/l (a reduction of 20% compared to the incoming effluent prior to treatment). See Table 16 below.

Table 16: Treated Effluent Characteristics

Parameter	Value
Treated Effluent Flow Rate	95 m^3/day
FOG	10 mg/l
COD	7-10,000 mg/l

5.5.4 Table 17 below quantifies all waste arisings from the Facility.

Table 17 Estimated Waste Arisings

Waste Type	Source	EWC code	Quantity (tonnes per annum) [1]	Fate
Solids from screening process	FOG treatment processes (screenings)	TBC as part of the ongoing trial as part of a WM3 assessment.	50	Anaerobic digestion (recovery)
Settled solids	FOG treatment processes (coagulation and flocculation)	TBC as part of the ongoing trial as part of a WM3 assessment.	TBC as part of the ongoing trial as part of a WM3 assessment.	Anaerobic digestion (recovery)
Treated effluent	FOG treatment processes	16 10 02	25,080	Treated in Stockport STW
Brown grease	FOG treatment processes	19 08 09 grease and oil mixture from oil/water separation containing edible oil and fats	1320	Biodiesel feedstock (recovery)
Note 1: Based on maximum capacity, 264 working days per year.				

5.6 Climate Change

5.6.1 A Climate Change Risk Assessment (CCRA) is included in Appendix F which addresses the requirements of the 'a changing climate' section of the EA guidance 'Develop a management

system: environmental permits', last updated 3rd April 2023. The CCRA follows the staged approach described in EA guidance 'Climate change: risk assessment and adaptation planning in your management system', last updated 3rd April 2023.

6.0 Records and Reporting

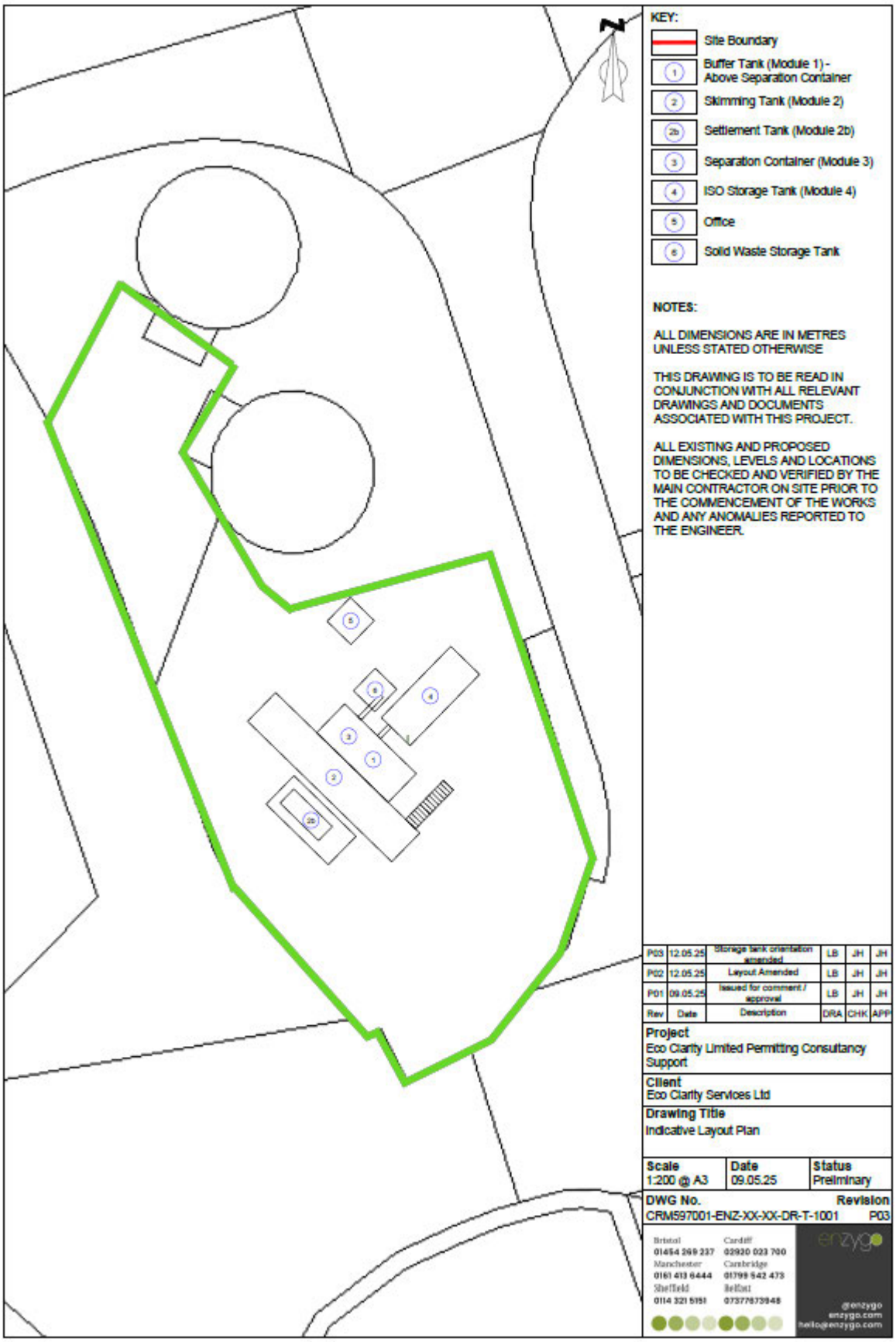
6.1.1 The operator will ensure that the following information is recorded:

- Any material changes to the site layout or operations;
- Site inspections undertaken by the Operator or any other body and any subsequent issues and corrective actions taken;
- Accidents and incidents including remedial actions taken;
- Complaints and actions taken;
- Critical plant/equipment failure;
- Technically competent manager – attendance on site;
- Security failures;
- Severe weather conditions;
- Details of emissions arising from reportable incidents in accordance with the Permit;
- Process monitoring data;
- Waste pre-acceptance audits and checks;
- Waste acceptance and rejection;
- Waste tracking information.

6.1.2 All records shall be held in the site office and backed up off site. All records, which are required under the conditions of the Environmental Permit, shall be maintained and kept secure from loss, damage and deterioration and be made available for inspection by the Environment Agency on request.

6.1.3 As part of the Facility's Management System, audits will be carried out annually to check that all activities are being carried out in line with the requirements of the Environmental Permit, Management Procedures, the EMS and associated applicable legislation.

As required by the Environmental Permit a record of all waste types and quantities removed from the site will be made quarterly.


KEY:
Site Boundary
1 Buffer Tank (Module 1) - Above Separation Container
2 Skimming Tank (Module 2)
2b Settlement Tank (Module 2b)
3 Separation Container (Module 3)
4 ISO Storage Tank (Module 4)
5 Office
6 Solid Waste Storage Tank
NOTES:
ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND DOCUMENTS ASSOCIATED WITH THIS PROJECT.
ALL EXISTING AND PROPOSED DIMENSIONS, LEVELS AND LOCATIONS TO BE CHECKED AND VERIFIED BY THE MAIN CONTRACTOR ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY ANOMALIES REPORTED TO THE ENGINEER.
P03 12.05.25 Storage tank orientation amended LB JH JH
P02 12.05.25 Layout Amended LB JH JH
P01 09.05.25 Issued for comment / approval LB JH JH
Rev Date Description DRA CHK APP
Project
Eco Clarity Limited Permitting Consultancy Support
Client
Eco Clarity Services Ltd
Drawing Title
Indicative Layout Plan
Scale 1:200 @ A3
Date 09.05.25
Status Preliminary
DWG No. CRM597001-ENZ-XX-XX-DR-T-1001
Revision P03
Bristol 01454 269 237
Cardiff 02920 023 700
Manchester 0161 413 6444
Cambridge 01799 542 473
Sheffield 0114 321 5151
Belfast 07377873948
@enzygo
enzygo.com
hello@enzygo.com

Appendix A1: Company Certificate



FILE COPY

CERTIFICATE OF INCORPORATION ON CHANGE OF NAME

Company Number **12842022**

The Registrar of Companies for England and Wales hereby certifies that under the Companies Act 2006:

ECO CLARITY AFRICA LTD

a company incorporated as private limited by shares, having its registered office situated in England and Wales, has changed its name to:

ECO CLARITY WASTEWATER SERVICES UK LIMITED

Given at Companies House on **30th September 2021**



* N128420228 *

The above information was communicated by electronic means and authenticated by the Registrar of Companies under section 1115 of the Companies Act 2006

Companies House

REGISTRAR OF COMPANIES FOR ENGLAND AND WALES

THE OFFICIAL SEAL OF THE REGISTRAR OF COMPANIES

Appendix A2: List of Directors

Surname	First Names	DoB	Title	Role
Clemes	Christopher Charles	[redacted]	Mr	Director
Garrett	David, Frank	[redacted]	Mr	Commercial Director
Katarzyna	Anna Golab	[redacted]	Ms	Director

Appendix A3: Technical Competency Information

From: [redacted]@hsecservices.co.uk>
Sent: 28 October 2026 9:25 AM
To [redacted]@eco-clarity.com>
Subject: Ben Saville

Good morning, [redacted],

I hope you're well. As discussed, I cannot provide a specific timescale for completion of your CIWM (WAMITAB) Level 4 qualification. Because of the niche nature of the activity, we need the permit in place to ensure you are familiar with the rules and implementing the associated requirements through the environmental management system.

Under normal circumstances in this scenario i.e for those working in a typical solid waste transfer station, we would look to source a surrogate site where you could get involved; however, this is not possible with your activity because there aren't any in the local area that are A) carrying out exactly the same activity and B) likely to grant access and involvement due to being a competitor.

There are only three ways round this: firstly, the EA agrees to issue the permit under an agreement that you will complete within a short but reasonable timescale e.g 4 months (allowing time for Christmas), recognising that you have been operating under an LEP for a number of years and the local EA officer, from what I can tell, is happy with the operation, or we try to get you involved in a completely different waste activity, which requires the same qualification. Lastly, you contract a TCM who holds the required qualification.

The last two options are not favourable in my opinion, as completing the award at a solid waste facility would be counterproductive and would increase the completion timescale, and more importantly isnt relevant to your permitted activity, and it's highly likely any contracted TCM has little or no knowledge of your process, and you would be holding their hand, which means in this scenario any contracted TCM would serve little or no environmental or compliance benefit, other than ticking the "TCM" box, and it would be far better for the environment and compliance more broadly if you were able to continue and complete your qualification at the site where you will operate with a small window of grace, because let's face it, you are operating as we speak under the LEP!

if you require anything further, please dont hesitate to contact me.
Regards

[redacted]

Health, Safety & Environmental Compliance Services Limited
T : 07494242960
[redacted] W : www.hsecservices.co.uk
Address: No.6b The Walk, Beccles, Suffolk, England, NR34 9AJ

Appendix B: EWC Codes

EWC	Permitted Waste	Currently included in Permit?
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing**	
02 02	**Wastes from the preparation and processing of meat, fish and other foods of animal origin.**	
02 02 01	Sludges from washing and cleaning, peeling, centrifuging and separation including wash waters and sludges from secondary food processing or the cook chill sector	Yes
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**	
02 03 01	Sludges from washing, cleaning, peeling, centrifuging and separation including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)	Yes
02 03 04	Materials unsuitable for consumption and processing (including waste from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)	Yes
02 03 05	Sludges from on-site effluent treatment (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rich starch only)	Yes
02 05	**Wastes from the dairy products industry**	
02 05 01	Materials unsuitable for consumption or processing – biodegradable wastes derived from the processing of dairy products only	Yes
02 05 02	Sludges from on-site effluent treatment	Yes
02 06	**Wastes from the baking and confectionary industry**	
02 06 01	Materials unsuitable for consumption or processing – biodegradable wastes from the processing of materials used in bakery and confectionery	Yes
02 06 03	Sludges from on-site effluent treatment – sludges from the processing of materials used in baking and confectionery	Yes
16	**Other wastes from industrial processes**	
16 10	**Aqueous liquid wastes destined for off-site treatment**	
16 10 02	Aqueous liquid wastes other than those mentioned in 16 10 01 including cesspit sludge	Yes
19 08	**Wastes from waste water treatment plants not otherwise specified**	
19 08 09	Grease and oil mixture from oil/water separation containing only edible oil and fats	Yes

EWC	Permitted Waste	Currently included in Permit?
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions.	
20 01	Separately collected fractions (except 15 01)	
20 01 25	Edible oil and fat	No, however it is similar in nature to other waste types.

Brown Grease

Water Treatment Chemicals

Table 1: Noise Emissions

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
Loss of Noise Containment and mitigation measures	Pumps due to failure (not inherently noisy during normal operation)	Abnormal	Noise through the air	Local residents, workforce at local businesses, users of amenity sites	Low	Low	Low	Pumps are within containerised building and are therefore unlikely to generate noise outside the site boundary, even if a failure occurred. Plant maintenance, including planned preventative maintenance (PPM) minimises noise generation and vibration. Operational procedure in place to deal with complaints about noise with records maintained.	Very Low

Table 2: Accidents

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
Impact by vehicle on tanks or vessels causing release into	Vessels	Abnormal	Discharge onto ground then run-off into drainage systems.	Local residents, workforce at local businesses,	Low	Medium	Medium	Activities will be managed and operated under a management system which will include security measures to prevent unauthorised access.	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
ground, groundwater and odour				users of amenity sites				Bollards and curbing are in place to protect tanks and vessels where they are located near access routes. The Facility will have security fencing around the perimeter and security gates at the main entrance. General traffic movements at the Facility will be under the wider UU site rules. Appropriate signage for vehicles will be provided. Drivers/visitors to the Facility will be given health and safety inductions and instructions on safe routing and speed limits.	
Arson and / or vandalism and or theft causing the release of polluting materials to air (smoke or fumes), water or land.	Unauthorised access	Abnormal	Transportation through the air of smoke then inhalation. Spillages and contaminated firewater by direct run off from the Facility.	On-site staff; Users of Industrial Estate; Members of the public and local residents; Nearby natural habitats; Unauthorised users of site equipment	Low	High	High	Activities will be managed and operated in accordance with a management system (which will include fire and spillage procedures). Automatic fire alarms, as well as flammable and explosive gas detectors are installed. Evacuation and emergency response plans are available, and all personnel are trained. Security measures to prevent unauthorised access includes a perimeter security fence and security gates around the Facility.	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
								Security gates will be kept locked and secured outside normal delivery hours.	
Accidental fire/explosion causing the release of polluting materials to air (smoke or fumes), water or land.	On-site Plant and equipment	Abnormal	Transportation through the air of smoke then inhalation. Spillages and contaminated firewater by direct run off from the Facility.	On-site staff; Users of Industrial Estate; Members of the public and local residents; Nearby natural habitats; Unauthorised users of equipment.	Low	High	High	Activities will be managed and operated in accordance with a management system, which will include security measures to prevent unauthorised access. All plant and equipment will be maintained in good working condition and subject to routine inspection and maintenance. Security measures to prevent unauthorised access include lock-up of the building, security gates and fencing servicing the wider site. The Facility will have security fencing around the perimeter and security gates at the main entrance. The Facility's management system will include procedures and actions required in the event of fire to prevent or minimise off-site pollution. Firefighting equipment (hoses within facility area) will be maintained on site in accordance with fire regulations. The Facility will have a dedicated smoking area situated outside of the building well	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
								away from any storage and processing areas. Any fire at the Facility will be treated as an emergency and will be extinguished at the earliest opportunity utilising local Fire & Rescue Services if required. All staff will be fully trained in the fire procedure. Any incidents of fire will be reported to the EA and records kept. The process is controlled electronically via SCADA which can be accessed remotely. Any abnormal conditions will trigger automatic shut-down procedures.	
Plant failure causing release of liquids and odour	On-site Plant and equipment	Abnormal	Transportation of odour through air. Spillages by direct run off from the Facility.	On-site staff. UU employees. Members of the public and local residents. Nearby natural habitats.	Low	Medium	Medium	The process is controlled electronically via SCADA which can be accessed remotely. Any abnormal conditions will trigger automatic shut-down procedures. Operating procedures and staff training. Maintenance and inspection routines. PPM will be in place to ensure plant and equipment are maintained in accordance with the manufacturer's instructions. Procedures and staff training. Procedural control of plant modification. Design and construction carried out by competent person and inspected by competent person prior to start up.	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
								Emergency shutdown system Emergency plan Design of appropriate access for emergency vehicles Training and simulation/ testing of emergency systems	
Flooding	Stored materials	Abnormal	Contaminated flood water by direct run off from the Facility.	On-site staff. UU employees. Members of the public and local residents. Nearby natural habitats.	Low	Medium	Medium	Not within a flood zone. Emergency shutdown system. Emergency plan. Design of appropriate access for emergency vehicles. Subscribed to EA Flood Warning System.	Low
Extreme weather events causing breakdown of plant and equipment and release of liquids into ground and watercourses and odour	Plant and equipment	Abnormal	Transportation of odour through air. Spillages by direct run off from the Facility.	On-site staff. UU employees. Members of the public and local residents. Nearby natural habitats.	Low	Medium	Medium	The process is controlled electronically via SCADA which can be accessed remotely. Any abnormal conditions will trigger automatic shut-down procedures. Insulated pipelines where required. Heated vessels. Operating procedures and staff training. Maintenance and inspection routines. PPM will be in place to ensure plant and equipment are maintained in accordance with the manufacturer's instructions.	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
(e.g. overheating of vessels, freezing pipelines)								Procedural control of plant modification. Design and construction carried out by competent person and inspected by competent person prior to start up. Emergency shutdown system Emergency plan Design of appropriate access for emergency vehicles Training and simulation/ testing of emergency systems CCRA completed (see Appendix F) which identifies that climate change impacts are 'low' considering the mitigations proposed.	

Table 3: Fugitive Emissions to Land and Water

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
Contaminated run-off/rainwater from the	Contamination from materials stored on site	Abnormal	Percolation through soils, direct run-off from the Facility	Nearby natural habitats. Pollution of nearby	Medium	Medium	Medium	All liquids are provisioned with bunds which are at least 110% of the tank capacity. Impermeable surfaces with sealed construction joints.	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
Facility's surfaces			across the ground and entering surface water or groundwater	surface water. Pollution of groundwater				Operational procedures in place to ensure tanks, drainage system and surfacing are inspected regularly; any damage will be repaired, and actions recorded. Clean up procedures will be implemented to prevent pollution from liquids in the event of a spill. All staff will be trained in the procedures and correct use of equipment and sufficient spill kits will be maintained on site. These procedures will include the use of booms or drain mats to seal all drains during the spill event. Staff will be trained to minimise emissions to water and records maintained.	
Release of effluent from FOG Treatment Facility	FOG treatment processes	Normal	Release to UU STW via tanker.	UU STW facility, then receiving watercourse	Low	Low	Low	Effluent is pre-treated in FOG Treatment Facility to reduce FOG and COD content. The process is controlled electronically via SCADA to ensure effective operation. Any abnormal conditions will trigger automatic shut-down procedures. Operating procedures and staff training. Maintenance and inspection routines. Small-scale plant.	Low
Spill from tanks and vessels	FOG treatment process tanks and vessels	Abnormal	Percolation through soils, direct run-off from the Facility	Nearby natural habitats. Pollution of nearby	Medium	Medium	Medium	All liquids are provisioned with bunds which are at least 110% of the tank capacity. Impermeable surfaces with sealed construction joints.	Low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
			across the ground and entering surface water or groundwater	surface water. Pollution of groundwater				Operational procedures in place to ensure tanks, drainage system and surfacing are inspected regularly; any damage will be repaired, and actions recorded. Clean up procedures will be implemented to prevent pollution from liquids in the event of a spill. All staff will be trained in the procedures and correct use of equipment and sufficient spill kits will be maintained on site. These procedures will include the use of booms or drain mats to seal all drains during the spill event. Staff will be trained to minimise emissions to water and records maintained.	
Spill from water treatment chemical drums	Water treatment vessels	Abnormal	Percolation through soils, direct run-off from the Facility across the ground and entering surface water or groundwater	Nearby natural habitats. Pollution of nearby surface water. Pollution of groundwater	Low	Low	Low	Treatment chemicals are stored in very small quantities in proprietary containers within bunded plant room. Impermeable surfaces with sealed construction joints externally to plant room. Operational procedures in place to ensure tanks, drainage system and surfacing are inspected regularly; any damage will be repaired, and actions recorded. Any spills will be of very small scale. Clean up procedures will be implemented to prevent pollution from liquids in the event of a spill. All staff will be trained in the	Very low

Hazard	Source	Normal or abnormal	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
								procedures and correct use of equipment and sufficient spill kits will be maintained on site. These procedures will include the use of booms or drain mats to seal all drains during the spill event. Staff will be trained to minimise emissions to water and records maintained.	

Table 4: Fugitive Emissions to Air including Odour

Hazard	Source	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
Odour due to leak from tank or vessel	FOG treatment process tanks and vessels	Air transport	Local residents, workforce at local businesses.	Low	Medium	Medium	The process is controlled electronically via SCADA to ensure effective operation. Any abnormal conditions will trigger automatic shut-down procedures. Operating procedures and staff training. Maintenance and inspection routines. Small-scale plant. OMP in place. Daily odour sniff testing. Low sensitivity environment	Low

Hazard	Source	Pathway	Receptor	Probability of Exposure	Consequence	Magnitude of risk	Risk Management	Residual risk
Release of odour from spill during tanker off-loading.	Tanker off-loading facility	Air transport	Local residents, workforce at local businesses.	Low	Medium	Medium	Offloading is from enclosed tanker into enclosed sump. Supervised deliveries. Drip tray in place to contain and manage potential leaks during coupling. Operating procedures and staff training. Maintenance and inspection routines.	Low
Odour escape from treatment building	Treatment tanks within containerised building	Air transport	Local residents, workforce at local businesses.	Low	Medium	Medium	Door always closed except when in use. No emission points. Enclosed building. Enclosed treatment and storage tanks. Enclosed pipelines to transfer materials. OMP in place. Daily odour sniff testing. Low sensitivity environment.	Low
Odour escape from solid enclosed skip or similar (normal operation)	Waste storage vessel	Air transport	Local residents, workforce at local businesses.	Low	Medium	Medium	Enclosed skip with limited exposed surfaces to generate odour. Chute transferring solid materials into skip is enclosed. OMP in place. Daily odour sniff testing. Low sensitivity environment.	Low

Appendix E: Climate Change Risk Assessment

Overview

This section addresses the requirements of the 'a changing climate' section of the Environment Agency guidance 'Develop a management system: environmental permits', last updated 3rd April 2023.

The following Climate Change Risk Assessment (CCRA) and adaptation planning follows the six-stage approach detailed within the Environment Agency guidance 'Climate change: risk assessment and adaptation planning in your management system', last updated 3rd April 2023.

Scope

The CCRA will describe the main climate change risks specific to the site. Each risk scenario will be assessed using EA Risk Assessment guidance to determine whether each scenario presents a high, medium or low risk using the six-stage approach described in the guidance:

1. Preparation
2. Find potential impacts.
3. Complete your risk assessment.
4. Find control measures.
5. Write your adaptation plan.
6. Monitor, record and review your plan.

Objectives

The objectives of this CCRA comprise:

- Identification of impacts of climate change on-site and within the wider supply chain, which may affect the operation of the business.
- Identification of risks the site may pose due to climate change impacts.
- Assessment of risks and prioritisation to identify priority areas which require improvement.
- Identification of mitigation measures to minimise the impacts of risks identified.

Regulatory Guidance

The risk assessments will be developed with reference to the EA's guidance 'Develop a Management System: Environmental Permits', last updated 3rd April 2023, and the following connected EA guidance notes:

- Climate change: risk assessment and adaptation planning in your management system, Plan for climate change impacts to and from your site. How to integrate climate change adaptation into your management system under an environmental permit, EA, last updated 3rd April 2023.
- Guidance - Biowaste: examples for your adapting to climate change risk assessment, EA, last updated 17th May 2023.

- Preparing for flooding: a guide for regulated sites. Flood planning guide to help businesses comply with their environmental permit and the COMAH regulations, EA, last updated 30th June 2015.

Step 1: Preparation

The Facility is newly constructed and has been designed with potential future impacts of climate change taken into consideration. The measures implemented at the site include the following:

- Emergency response plan in place which considers severe weather and natural disasters including flooding.
- Robust design of plant and equipment.
- Capture and storage of surface water within the UU STW surface water drainage network.
- All wastes are enclosed within tanks and vessels, no open storage of waste.
- Tanks are provisioned with bunds.
- Oil tanks comply with Oil Storage Regulations requirements comprising a double skinned containers.
- Impermeable concrete hardstanding is installed in operational areas to prevent spills reaching exposed ground or groundwater.
- EMS in place to identify and mitigate the impact from significant environmental risks.
- Accident Management Plan in place to identify accident scenarios, implement preventative measures and mitigate the risks should an accident occur.
- Contingency arrangements are in place to divert incoming waste in the event of an emergency, including scenarios relating to climate change.

Step 2: Identifying Potential Impacts

Increasing Summer Temperatures

This may be around 7°C higher compared to average summer temperatures now, with the potential to reach extreme temperatures as high as over 40°C with increasing frequency based on today's values.

The following potential impacts have been identified for the site and any potential risk created regarding Permit compliance.

- Overheating of vessels and pipework requiring increased insulation and cooling.
- Expansion and stress of plant, pipework and fittings.
- Increased pests and flies.
- There could be an increase in odour from the site.

Winter Temperature Profile Changes

Winter temperatures could be 4°C more than the current average, however with the potential for more extreme temperatures, both milder and colder than present.

The following potential impacts have been identified for the site and any potential risk created regarding Permit compliance.

- In extreme cold weather, risk of freezing of feed water, resulting in blockages – particularly on long pipelines and storage in exposed areas.
- Frozen onsite roadways may restrict access for staff and emergency vehicles.
- There could be damage to site infrastructure from snow-loading over extended periods.

Daily extreme rainfall

Daily rainfall intensity could increase by up to 20% on today's values and average winter rainfall may increase by over 40% on today's averages.

The following potential impacts have been identified for the site and any potential risk created regarding Permit compliance:

- Localised flood events.
- Potential for increased site surface water and flooding.
- Access or egress to/from site could be affected.

Sea level rise

Sea level rise which could be as much as 0.6m higher compared to today's level. However, the site is located approximately 36.6m above sea level and is located over 40km away from the coast.

River flow

The flow in the watercourses could be 50% more than now at their peak and 80% less than now at their lowest.

The following potential impacts have been identified for the site and potential risk create regarding Permit compliance:

- Discharge of waters during increased river flows may increase the flood risk from the watercourse further downstream.
- Reduced river flows give risk of reduced dilution available in receiving watercourse in the event of a spill, increase potential for damage from pollution.

Storms

Storms could see a change in frequency and intensity. The unique combination of increased wind speeds, increased rainfall, and lightning during these events provides the potential for more extreme storm impacts.

The following potential impacts have been identified for the site and any potential risk created regarding Permit compliance.

- Storms and high winds could damage plant and equipment with increased potential for fugitive emissions identified as an impact.
- Potential for lightning strikes to damage buildings and infrastructure.

Steps 3 and 4: Risk assessment and Control Measures

Stages 3 and 4 of the six-stage approach are covered within the climate change risk assessment shown in Table E1.

Step 5: Adaption Plan

The current control measures are suitable for the currently predicted climate change impacts for the site. The Facility is newly constructed and the anticipated climate change impacts at the site have been considered throughout the design and construction.

The climate change risk assessment and adaption plan will be reviewed annually along with the Facility's EMS and will fulfil Step 6 of the six-stage approach. The climate change risk assessment and adaption plan will also be reviewed following any changes to the predicted climate impacts, flood zone designations or climate change related incidents at or near to the site.

Regular reviews of the Facility's Environmental Risk Assessment, Flood Risk Assessment and emergency procedures will be carried out to reflect changes to the conditions on site. There will also be a review of these assessments and procedures should any climate incident occur at or near to the site e.g. flooding event.

The impact of each climate change scenario identified above has been assessed using the following criteria:

Likelihood of Impact		Severity of Impact	
Low	Unlikely	**Low**	Low impact with minor, temporary effects on the environment or human health.
Medium	Low to medium likelihood	**Medium**	Moderate impact with medium-term effects on the environment or human health.
High	Likely	**High**	Moderate to severe impact with potential for long-lasting damage to the environment or human health

The two figures are then multiplied to give the risk category. Each impact can then be prioritised as follows:

Likelihood Score	Severity	Risk Category
Low	Low	Low
Low	Medium	Medium
Low	High	Medium
Medium	Low	Low
Medium	Medium	Medium
Medium	High	High
High	Low	Medium

Likelihood Score	Severity	Risk Category
High	Medium	High
High	High	High

Table E1: Climate Change Risk Assessment

Impact	Likelihood	Severity	Risk	Control Measures	Residual Risk
Changing Temperatures					
Overheating of vessels and pipework requiring increased insulation and cooling.	Medium	Medium	Medium	Insulation of control and electrical systems. Critical plant and equipment are provisioned with monitoring and alarms by SCADA System. Planned Preventative maintenance is carried out and recorded in line with the EMS. Increased process monitoring during periods of extreme weather. Maintenance contract is in place with the equipment suppliers.	Low
Expansion and stress of plant, pipework and fittings.	Medium	Medium	Medium	Insulation of control and electrical systems. Critical plant and equipment are provisioned with monitoring and alarms by SCADA System. Planned Preventative maintenance is carried out and recorded in line with the EMS. Increased process monitoring during periods of extreme weather. Maintenance contract is in place with the equipment suppliers.	Low
Increased pests and flies.	Medium	Medium	Medium	Site inspections and waste acceptance procedures in place. Materials are enclosed within tanks containing potentially odorous releases. Treatment processes carried out within enclosed tanks and vessels. Contractor available to provide pest control services. No historical issues with pests.	Low
Increase in odour.	Medium	Medium	Medium	Site inspections and waste acceptance procedures in place. Odour sources are enclosed within tanks and/or container minimsing potentially odorous releases. Odour Management Plan in place. No historical issues with pests.	Low
Freezing pipelines resulting in blockages.	Low	Medium	Medium	All pipelines and tanks are insulated where required.	Low

Impact	Likelihood	Severity	Risk	Control Measures	Residual Risk
				Daily site inspections and SCADA system in place to monitor changes in operating conditions.	
Frozen onsite roadways may restrict access for staff and emergency vehicles.	Low	Medium	Medium	Gritting and clearing contractors available to clear internal roads and external access roads, if required.	Low
Damage to site infrastructure from snow-loading.	Low	Medium	Medium	No history of significant snowfall. Robust structures built to withstand severe weather conditions. Volumes of liquids stored are low. Bunding provided for all containers.	Low
Extreme rainfall					
Localised flood events	Low	Medium	Medium	No history of flooding. Within Flood Zone 1 (low risk of flooding) All main liquid storage and treatment vessels are located within a bunded area. Contingency plan in place to divert feedstocks if site is overwhelmed.	Low
Potential for increased site surface water and flooding.	Low	Medium	Medium	No history of flooding. Within Flood Zone 1 (low risk of flooding) All main liquid storage and treatment vessels are located within a bunded area. Contingency plan in place to divert feedstocks if site is overwhelmed. Segregated process and surface water drainage.	Low
Reduced access or egress due to site flooding	Low	Medium	Medium	Emergency plan in place including staffing contingency. Contingency arrangements in place to divert feedstocks.	Low
Sea level rise					
Risk of flooding and associated impacts.	Low	Low	Low	Site and roadways into site are located 36.6m above sea level and not in close proximity to the sea.	Low
Changing river flow rates					
Reduced dilution available in receiving watercourse in the event of a spill, increasing potential for damage from pollution.	Low	Low	Low	Containment and secondary containment are in place to prevent spills.	Low

Impact	Likelihood	Severity	Risk	Control Measures	Residual Risk
				EMS in place which includes accidental risk mitigation measures and spill procedures. In the event of a significant flood event, plant can stop operating and hold liquids within vessels. No continuous releases (batch release upon completion of treatment).	
Increased flood risk due to discharge of waters during peak river flows.	Low	Low	Low	Containment and secondary containment are in place to prevent spills. EMS in place which includes accidental risk mitigation measures and spill procedures. Process water is transferred to UU STW via tanker. In the event of a significant flood event, plant can stop operating and hold liquids within vessels. No continuous releases (batch release upon completion of treatment).	Low
Storms					
Damage to building structures and tanks resulting in increased potential for accidental and fugitive emissions.	Low	High	Medium	Robust structures built to withstand severe weather conditions. All main liquid storage and treatment vessels are located within a bunded area.	Low
Potential for lightning strikes to damage buildings and infrastructure.	Low	High	Medium	All buildings are low-lying, not tall structure.	Low

Monitor, Record and Review Plan

This section describes the monitoring carried out related to climate change impacts.

Monitoring of climate change events will be carried out to achieve the following objectives:

- Review of the CCRA against objectives set
- Monitor progress in completing the mitigation actions for priority risks.
- Review the effectiveness of the plan, the impacts identified and determine whether the plan needs to be updated.
- Monitor climate change events to gather the following information (see template in Table E2 below):
    - date
    - weather event
    - extent of incident
    - damage or effect to the business or environment
    - immediate action taken
    - proposed prevention or mitigation measures

The CCRA will be reviewed by the Site Operations Manager after each event which impacts operations, whether on-site or within the wider supply chain, or if new information is available which affects the CCRA, and annually.

Table E2: Climate Change Event Monitoring

Date	Weather event	Extent of Incident	Damage/effect to the business or environment	Action taken	Mitigation proposed to prevent Recurrence

Appendix F: Accident Management Plan

Enzygo specialise in a wide range of technical services:

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