EPR Permit Variation Application

Anaerobic Digestion Facility- Talgarth

25th July 2025

Project No.: SOL_24_P060_GPB

...consulting sustainability

sol environment

Document details	
Document title	EPR Permit Variation Application
Document subtitle	Anaerobic Digestion Facility - Talgarth
Project No.	SOL_24_P060_GPB
Date	25th July 2025
Version	QMS_7.5.38_TEM – Template – Report Long Form – New Style (Perm) v1
Author	Rhys Morgan
Client Name	GP Biotec Ltd

Document history					
Version	Revision	Author	Reviewed by	Date	Comments
Final	I1	Rhys Morgan	Emily Hingston	25/07/2025	First issue to Natural Resources Wales

Signature Page

25th July 2025

EPR Permit Variation Application

Anaerobic Digestion Facility - Talgarth

Rhys Morgan
Environmental Consultant

Emily Hingston
Client & Project Manager

This report has been prepared by Sol Environment with all reasonable skill, care, and diligence, and taking account of the Services and the Terms agreed between Sol Environment Ltd and the Client. This report is confidential to the client, and Sol Environment accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Sol Environment Ltd beforehand. Any such party relies upon the report at their own risk.

Sol Environment disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services

Contents

List of Tables

List of Figures

NON-TECHNICAL SUMMARY

GP Biotec currently operates an anaerobic digestion facility at their facility in Great Porthamel, Talgarth, Brecon, Powys, LD3 0DL under permit EPR/AB3233DW/V008.

This site is permitted under The Environmental Permitting (England and Wales) Regulations 2016 (As Amended) as an Installation for the following scheduled activity:

S5.4A(1)(b)(i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities: Biological Treatment

The permit also allows for the following Directly Associated Activities (DAAs) to be undertaken:

- A2 Biogas Storage and supply system;
- A3 Emergency flare operation;
- A4 Burning of waste as a fuel – combustion of biogas in two combined heat and power (CHP) engines. The thermal input of CHP1 is 2.76MWth and CHP2 IS 3.36MWth;
- A5 Combustion of biogas in standby boiler with a thermal input of 928kWth;
- A6 Gas upgrading to create biomethane for injection into the National Grid; and
- A7 Raw Material Storage.

GP Biotec also currently hold a separate standalone Standard Rule 2010 No.17 (SR2010No.17) permit under EPR/BB3099CG for the storage of wastes to be used in land treatment issued by Natural Resources Wales (NRW).

GP Biotec are proposing a permit variation for their current permit EPR/AB3233DW/V008 for the following:

- To consolidate their Standard Rule permit (EPR/BB3099CG) and Installations permit (EPR/AB3233DW/V008) permit;
- Include additional areas within the permit boundary, namely the SR area and the area comprising the existing digestate lagoon;
- The addition of a CHP engine;
- The addition of two liquid waste pre-storage tanks; and
- The addition of a new waste reception hall.

The proposed CHP, CHP 3, to be included in the permit has a capacity of 1.31MWth and will be used to supply power to the site's processes. The CHP will be operated utilising biogas produced as part of the AD process in the same manner and under the same management and operating procedures as the two existing CHPs and will be regulated in accordance with the Medium Combustion Plant Directive.

The site currently manages a digestate lagoon for the storage of PAS11—accredited digestate to the west of the main permitted boundary. As part of this proposed variation, the applicant wishes to include this digestate lagoon within the site boundary. The digestate lagoon has been built to the appropriate measures standards and maintained where necessary over its lifespan posing negligible risk to the environment.

The additional process tanks are for the storage of liquid digestate prior to transfer to the site lagoon. This will improve operational efficiency and provide buffer capacity during periods of plant maintenance.

Emissions to Air

This permit variation seeks to add one additional CHP unit with one point source emission to air to the site. There are currently two existing CHP's, a standby biogas boiler and an emergency flare, bringing the total emission points to air at the site to five.

A full Air Quality Assessment has been carried out for the site using the AERMOD atmospheric dispersion modelling software taking into account all CHP units. The significance of the impacts has been assessed in accordance with the Environment Agency's (adopted by NRW) Risk Assessment Guidance and professional judgement. The assessment has concluded that the proposed operations at the Site do not have an adverse impact on sensitive human or ecological receptors.

Odour Emissions

The installation of a new waste reception hall will provide additional internal storage for wastes, thereby ensuring mitigation of odour emissions from this source. The building is in the design stages, however, will be fitted with an appropriate extraction and abatement system, fitted with roller shutter doors and maintaining the building at negative pressure. The building will be designed and constructed in accordance with BAT outlined in the Waste Treatment BREF and the Appropriate Measures Guidance for Biological Treatment.

Fugitive Emissions

The proposed upgrades to the facility will assist in minimising any fugitive releases of process emissions, dust or odour.

There are no inherently dusty materials stored onsite. The addition of a new waste reception hall will further ensure that waste materials are stored internally within the enclosed feedstock reception building, or within sealed tanks / vessels.

Fugitive methane emissions will be appropriately managed and minimised onsite as per existing arrangements. A Leak Detection and Repair Programme (LDAR) in accordance with the guidance, is in place to monitor and assess these emissions, allowing quick implementation of repairs where required.

The two new pre-storage tanks are for storage of liquid digestate prior to transfer to the lagoon. Vents on these tanks are routed to abatement / the main gas line in accordance with appropriate measures.

Emissions to Controlled Waters

There are no new emissions to controlled waters arising from the proposed variation application.

Emissions to Ground or Land

There are no new emissions to ground or land arising from the proposed variation application.

Emissions to Sewer

There are no new emissions to sewer arising from the proposed variation application.

1. INTRODUCTION

This document has been prepared by Sol Environment Ltd on behalf of GP Biotec Ltd ("GP Biotec" or "the Applicant" hereafter) and provides supporting information as required by Environmental Permit Application Forms issued by the Environment Agency (EA).

1.1 Background

The Applicant operates an anaerobic digestion facility at their facility in Great Porthamel, Talgarth, Brecon, Powys, LD3 0DL under permit EPR/AB3233DW/V008.

This site is permitted under The Environmental Permitting (England and Wales) Regulations 2018 (As Amended) as an Installation for the following scheduled activity:

S5.4A(1)(b)(i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities: Biological Treatment

The permit also allows for the following activities to be undertaken, as Directly Associated Activities (DAAs).

- A2 Biogas Storage and supply system;
- A3 Emergency flare operation;
- A4 Burning of waste as a fuel – combustion of biogas in two combined heat and power (CHP) engines. The thermal input of CHP1 is 2.76MWth and CHP2 IS 3.36MWth;
- A5 Combustion of biogas in standby boiler with a thermal input of 928kWth;
- A6 Gas upgrading to create biomethane for injection into the National Grid; and
- A7 Raw Material Storage.

GP Biotec also currently hold a separate standalone Standard Rule 2010 No.17 (SR2010No.17) permit under EPR/BB3099CG for the storage of wastes to be used in land treatment issued by Natural Resources Wales (NRW).

1.2 Reason for Application

The Applicant is seeking to vary permit EPR/AB3233DW/V008 to make the following changes:

- Consolidation of the areas and activities currently covered by SR2010 No.17 EPR/BB3099CG within the main EPR/AB3233DW/V008 Part A(1) installations permit.
- Inclusion of second additional area, currently the site's main digestate lagoon and ancillary buildings and storage including a grain store, machine storage and storage for Red Diesel and AdBlue. This area is situated to the west of the current permitted area.
- Add an additional CHP engine to the permit, allowing for 3 CHPs in total to be operated on site.
- Add two additional liquid waste pre-storage tanks to the permit.
- Add a new waste reception hall to the permit. This would be located to the south of the existing waste reception hall and within the existing permitted boundary. The building and will allow for supplementary/alternative storage of received waste. This new reception hall will not

increase the total permitted storage capacity at any one time but will allow for alternative storage options during times of maintenance/upgrades to the existing reception hall.

This application support document, as well as the associated annexes and relevant application forms, provides details of the proposed changes to the facility, including a full description of the activities, details on the waste streams to be accepted, potential emissions and their management, as well as general site operations and the required management plans and procedures. It should be noted that many of these details will not alter significantly from the current permit.

The following annexes are associated with this document:

- Annex A – Technical Information;
- Annex B – Site Plans;
- Annex C – Environmental Management System Summary;
- Annex D – Air Quality Assessment;
- Annex E – Odour Management Plan;
- Annex F – Environmental and Climate Change Risk Assessment;
- Annex G – Site Condition Report ; and
- Annex H – Operator Competence.

2. PERMITTING AND PLANNING HISTORY

The site's permitting and planning history is provided in **Table 2.1** and **Table 2.2**.

Table 2.1 – Permitting History

Reference	Description	Status	Date Granted
EPR/AB3233DW/A001	Application for a New Bespoke Installation Permit	Determined	12/03/2012
EPR/ AB3233DW /V002	Regulator-initiated variation to amend infrastructure requirements	Permit Varied	25/07/2013
EPR/ AB3233DW /V003	Variation and consolidation to include a listed activity following the implementation of the Industrial Emissions Directive and update to a modern condition format.	Permit Varied	06/07/2015
EPR/ AB3233DW /V004	Variation and consolidation to increase the amount of animal waste that can be accepted to site.	Permit Varied	12/02/2016
EPR/ AB3233DW /V005	Variation to add EWC Code 02 02 99.	Permit Varied	25/09/2017
EPR/ AB3233DW /V006	Variation and consolidation to increase the site capacity from 55,000 TPA to 75,000 TPA and various other minor site changes.	Permit Varied	30/01/2020
EPR/ AB3233DW /V007	Regulated led variation following the publication of the revised BAT Reference Document for Waste Treatment.	Permit Varied	09/02/2021
EPR/ AB3233DW /V008	Variation to add gas to grid upgrading plant and standby boiler	Permit Varied	23/01/2023

Table 2.2 – Planning History

Reference	Description	Status	Date Granted
07/01356/FUL	GP Services Proposed AD application submitted	Granted	26/09/07
07/01356/FUL	LPA Decision	Refused	08/05/09
APP/P9502/A/09/2106895	Appeal Lodged	-	June 2009
APP/P9502/A/09/2106895	Appeal Decision	Approved	13/01/09
CO/2615/2010	S288 application lodged by BBNPPA	-	February 2010
CO/2615/2010	S288 Hearing in High Court	Permission Granted	17/11/10
20/18444/FUL	Installation of a biogas upgrading facility, ancillary infrastructure and equipment, access, and landscaping	Approved	21/05/2021
20/18728/SO	Request for Screening Opinion under Part 2, Regulation 6 of The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 relating to Planning Application 20/18444/FUL for installation of a biogas upgrading facility, infrastructure, and equipment at Great Porthamel, Talgarth	Environmental Statement Not Required	04/08/2020
21/20246/DISCON	Discharge condition 6 (Letter dated 28 July 2021-Materials) and condition 7 (Drawing Ref: 1255/10 Landscape Proposals) in relation to planning application 20/18444/FUL.	Awaiting decision	-

3. SITE DETAILS

3.1 Site Location

The site is located at the GP Biotec, Great Porthamel, Talgarth, Brecon, Powys, LD3 0DL, (Grid Reference: SO 15970 35082) and occupies a central area of Great Porthamel Farm.

The facility is situated to the west of the A4078 road in an area of predominantly agricultural land, with the village of Talgarth located approximately 1.9km south of the site. The nearest residential receptor to the site is a single residential property along an unnamed road, located approximately 370m northeast of the site boundary.

3.2 Infrastructure and Design

3.2.1 Site Boundary

The existing permitted site boundary can be seen in **Figure 3.1** below.

The proposed boundary of the site, incorporating the two new site areas (SR area and lagoon area) can be seen below in **Figure 3.2.**

An updated Site Condition Report has been undertaken to include these additional new areas. The Site Condition Report is provided in Annex G.

3.2.2 Site Layout and Design

The proposed site area covers approximately 2.82ha and consists of a combination of process areas and waste storage areas, as well as ancillary equipment. The current site layout plan can be seen below in **Figure 3.3.** The proposed site layout plan including the proposed CHP, additional tanks and new reception hall can be seen in **Figure 3.4**.

3.2.3 Drainage

All operational aspects of the site are constructed on a sealed concrete hardstanding as described in the original application.

The drainage system ensures that all surface water falling on to the ABP reception area is routed to the Anaerobic Digestion Tanks for use within the process.

Drainage for the lagoon area to be included within the permit boundary is already interlinked to the existing site drainage systems, with surface water run-off from clean areas of site discharged to the River Llynfi via permitted discharge points W1 and W2.

This drainage system can be seen on **Figure 3.5** below.

The Standard Rules permitted waste storage area to be included within the permit boundary is housed on a concrete base surrounded by concrete panels and earth/clay bunding, with a sealed drainage system with a gradual sloping gradient into an effluent capture pit.

All liquids and rainwater are captured and pumped directly into a liquid storage tank and/or directly up to the installation AD site to aid dry matter control. Please see **Figure 3.6** for the drainage plan of this additional area.

Hardstanding

All internal and external processing areas, including the proposed areas of land to be incorporated as part of this variation application, are constructed with impermeable concrete hardstanding which has been designed in accordance with the load bearing requirements of the processing equipment and vehicles used at the facility. Typically, all non-structural concrete areas comprise of a reinforced concrete hardstanding of at least 200 - 250mm thickness.

Tanks and Bunds

All tanks have been installed with secondary containment and designed to comply with the following standards and guidance requirements:

- Environment Agency Pollution Prevention for Business;
- HSE Bulk LPG Storage Tank: Safety of your LPG Storage Tank;
- CIRIA C598: Chemical Storage Tank Systems – Good Practice; and
- CIRIA 736: Design of Containment Systems for the Prevention of Pollution.

All storage and processing tanks associated with the Installation, including the two additional tanks proposed and tanks existing at the SR area, are detailed within Table 4.3 in Section 0.

3.3 Additional Areas

3.3.1 Digestate Lagoon

The site currently manages a digestate lagoon for the storage of PAS11—accredited digestate to the west of the main permitted boundary. As part of this proposed variation, the applicant wishes to include this digestate lagoon and surrounding area within the permitted site boundary. This area will therefore also includes buildings and storage areas that do not inherently require a permit, namely a grain store, machine store, separator building and additional red diesel and AdBlue storage.

3.3.2 Standard Rules Area

The area currently operated under the Standard Rules permit is located approximately 380m to the west of the AD plant and currently comprises a waste storage area including a concrete bunded area with sealed drainage system and a 30,000 litre steel panelled storage tank for liquid waste. Incoming waste is stored in this area and it is proposed to utilise the area for pre-treatment blending of solid and liquid waste prior to being fed to the AD facility. The area has been permitted since operations began and under regulation of NRW. Surrender of this SR permit will be undertaken and it is understood that NRW have agreed a low risk surrender due to the low potential for pollution to have arisen from the onsite activities.

On the basis that new land is to be included in the boundary (including the land covered by the current SR2010 No.17), the site's H5 Site Condition Report has been updated and included in this application.

A summary of the changes can be seen below:

- Since the land currently operated under the SR2010 No.17 permit, and new area of land to be included in the permit boundary housing the digestate lagoon and ancillary buildings, will continue to be utilised by the same operator and for the same purpose, no ground investigation

data has been obtained to establish a new baseline. The site will accept the ground in as-is condition and undertake ground investigation work at the point of permit surrender.

- The database review undertaken as part of the updated SCR details no pollution incidents for concern that are deemed relevant for the site or its operations.
- The proposed permitted areas have been designed to ensure that there will be no fugitive emissions to soil, groundwater, or surface water from the site. The waste storage site concrete panel bunding walls and concrete pad area are existing and upon inspection are in very good condition with no visible damage or weak areas, therefore no posing a risk of pollution through seepage or damage to the infrastructure.
- The digestate lagoon has been built to EA/NRW Appropriate Measures standards and the digestate stored within meets PAS110 accreditation. There have been no recorded pollution incidents arising from the storage of digestate historically.
- The Site Condition Report will be updated throughout the lifespan of the permit.

3.4 Additional Infrastructure

As part of this variation, it is proposed to add the following additional infrastructure to the site:

- One CHP Unit of 1.3MWth;
- Two Pre-storage Tanks;
- One additional Waste Reception Hall.

It must be noted that the additional reception hall is in design and will be designed and constructed in accordance with BAT and Appropriate Measures. It will not increase the volume of waste stored onsite at any one time, rather benefit with segregation of wastes and allow easier onsite management of incoming waste streams.

The additional CHP unit will be located in the vicinity of the existing CHP units and will be operated under the same procedures and management.

The pre-storage tanks will be located to the east of the existing digester tanks.

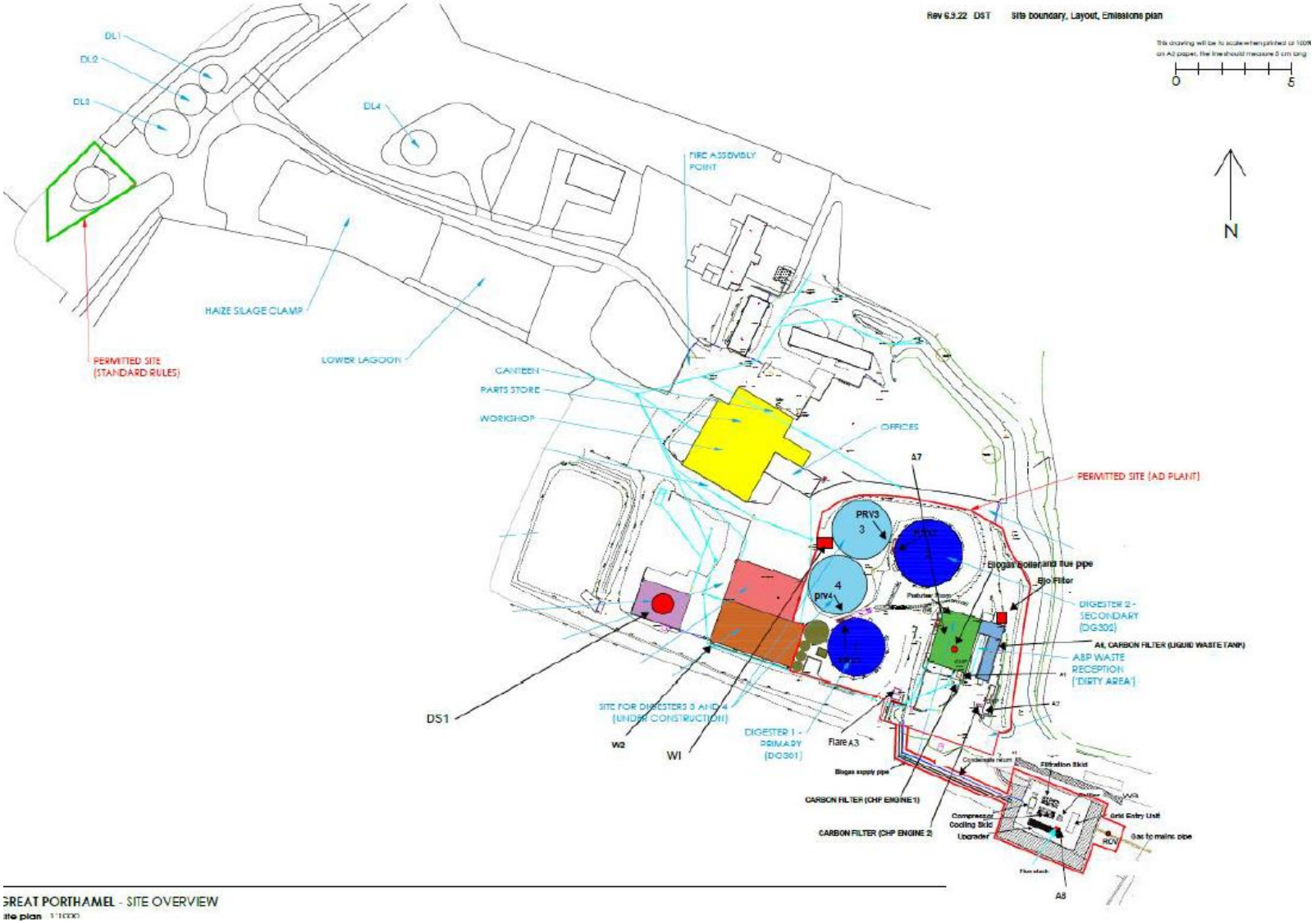
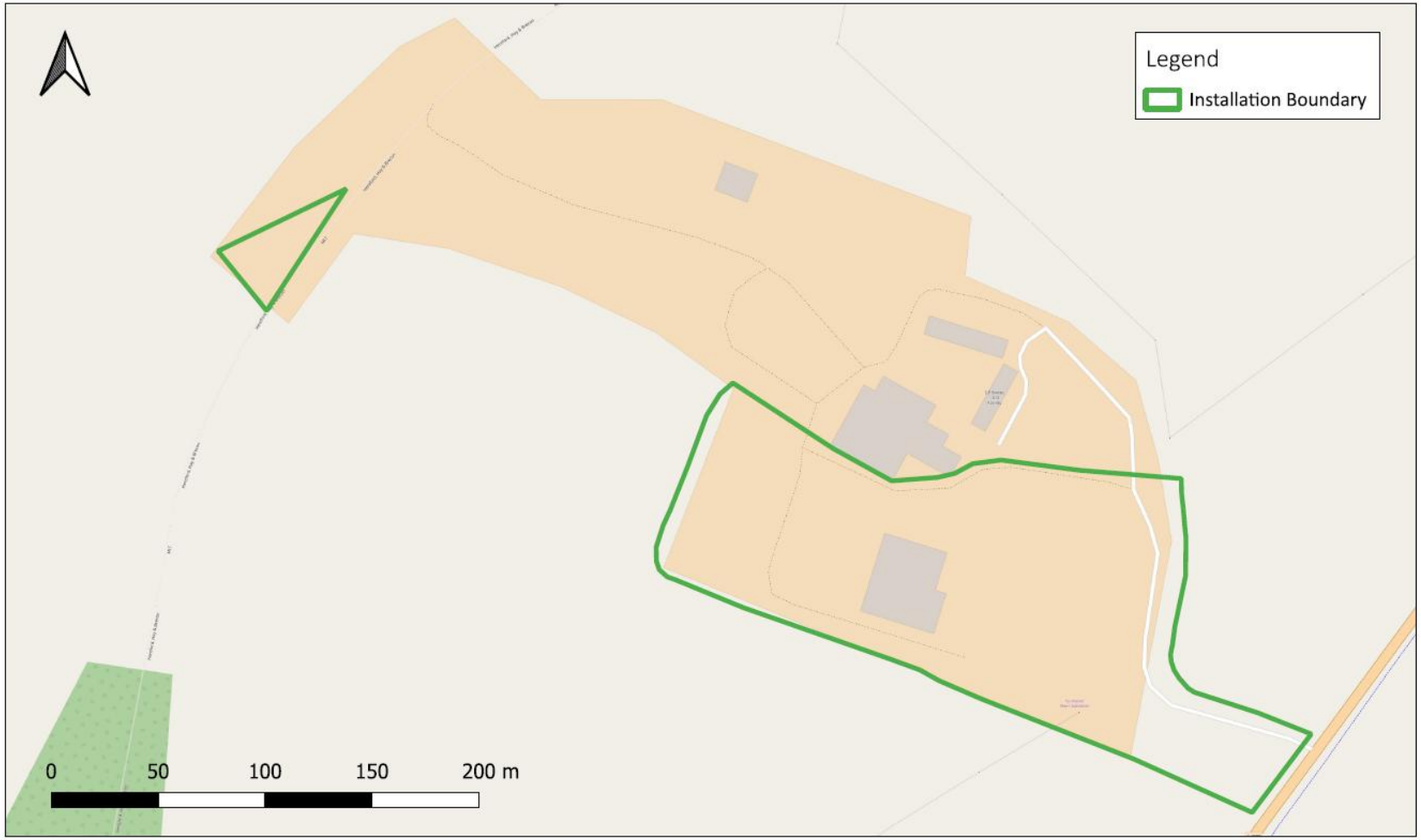


Figure 3.1 – Existing Permitted Boundary



Project Number: SOL_24_P060_GPB Doc Ref: Annex B_Site Plans Map Title: Installation Boundary Date: 15/01/2025 Drawn by: RM Checked by: SR	Site Address: GP Biotec Ltd - Anaerobic Digestion Facility Great Porthamel Brecon LD3 0DL	1. Do not scale off this drawing 2. All dimensions to be confirmed on site 3. This drawing is copyright of Sol Environment Ltd 4. This drawing is to be read in conjunction with relevant consultant drawings and specifications 5. QMS Reference: QMS_7.5.39_TEM - Template - GIS Drawing - Horizontal v1

sol environment
a: Unit 5.3 The Paintworks, Bath Road, Bristol, BS4 3EH
w: www.sol-environment.co.uk
e: enquiries@sol-environment.co.uk
t: 01684 572727

Figure 3.2 – Proposed Site Boundary

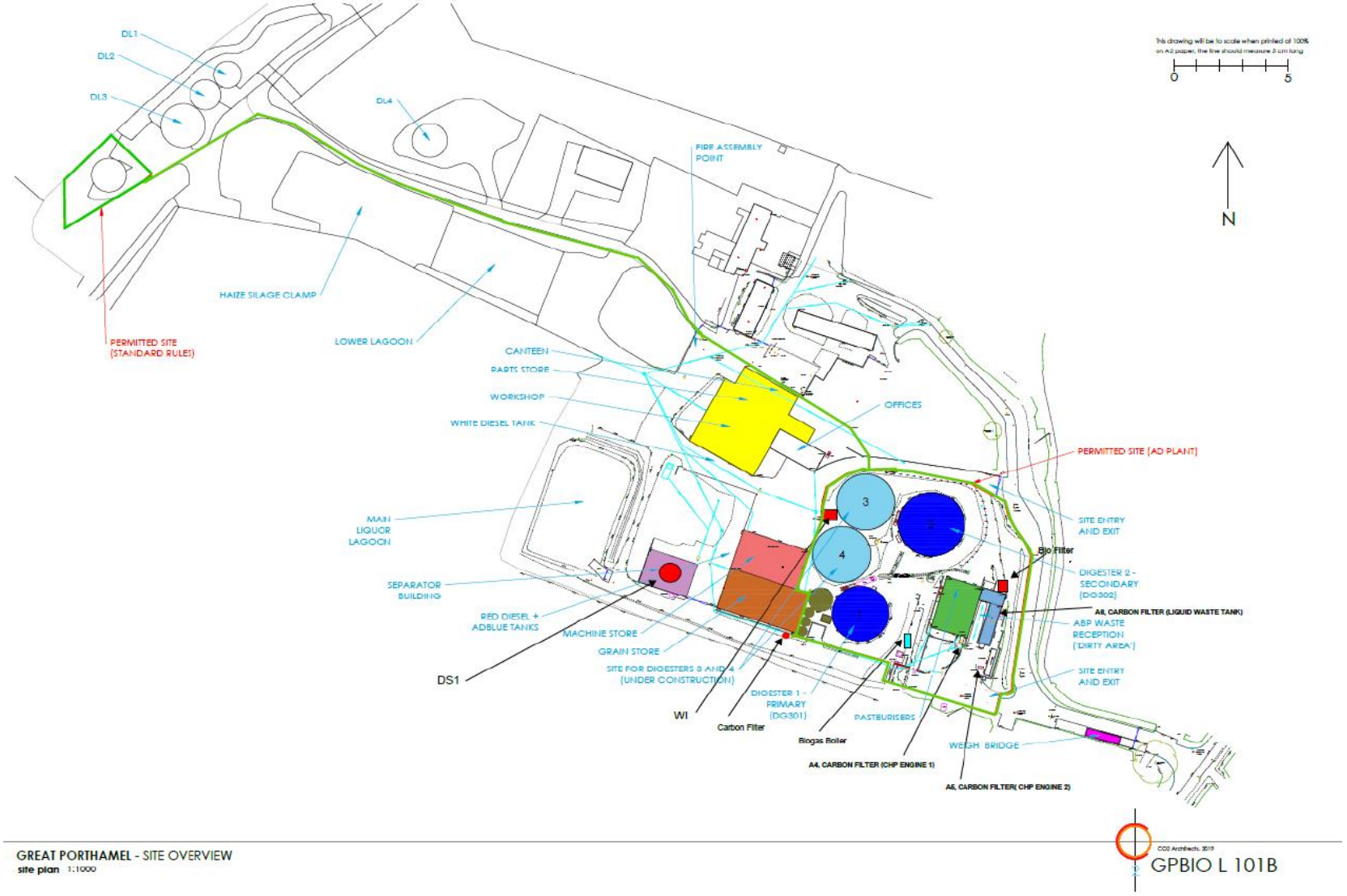


Figure 3.3 – Existing Site Layout

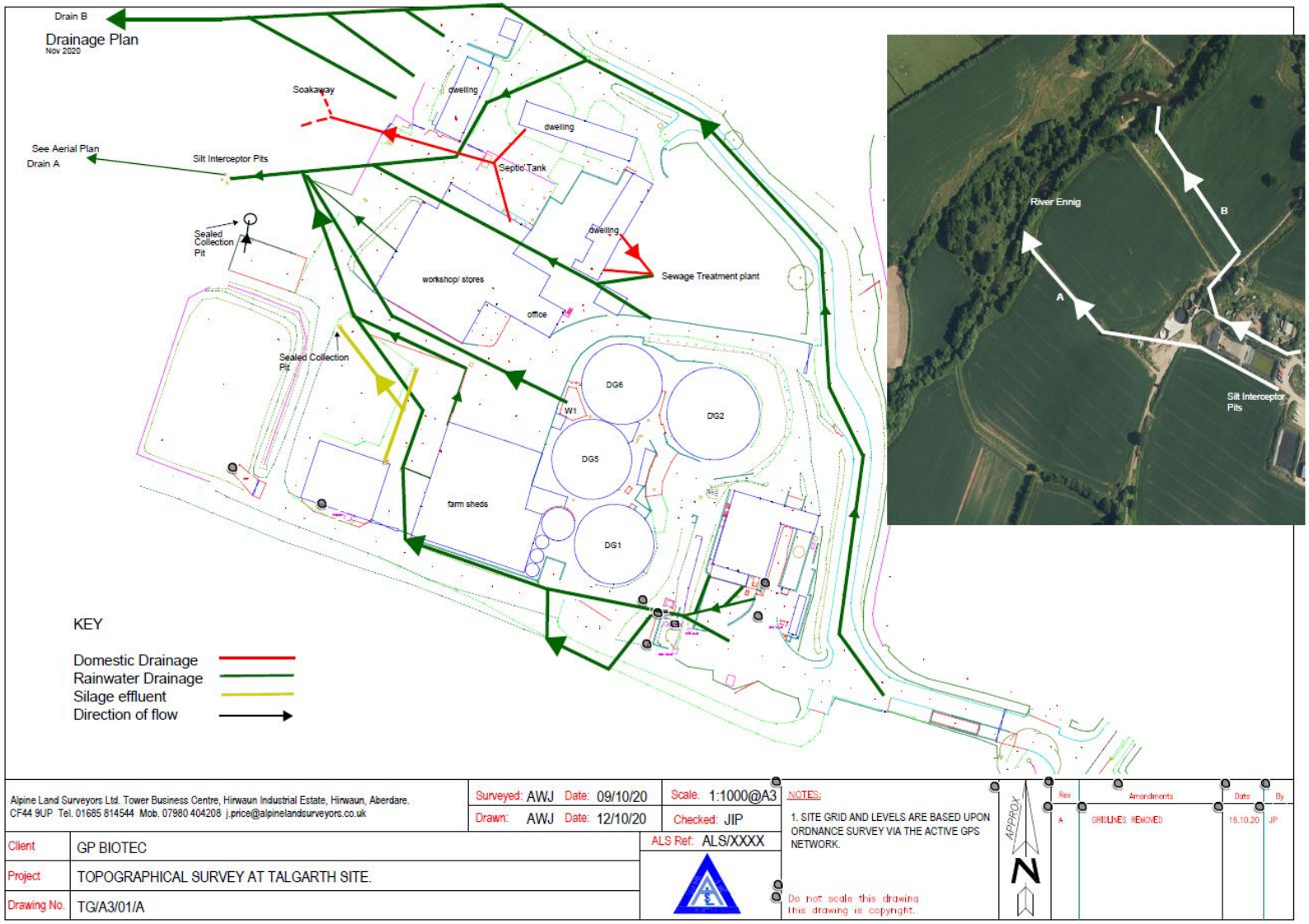


Figure 3.5 – Drainage Plan

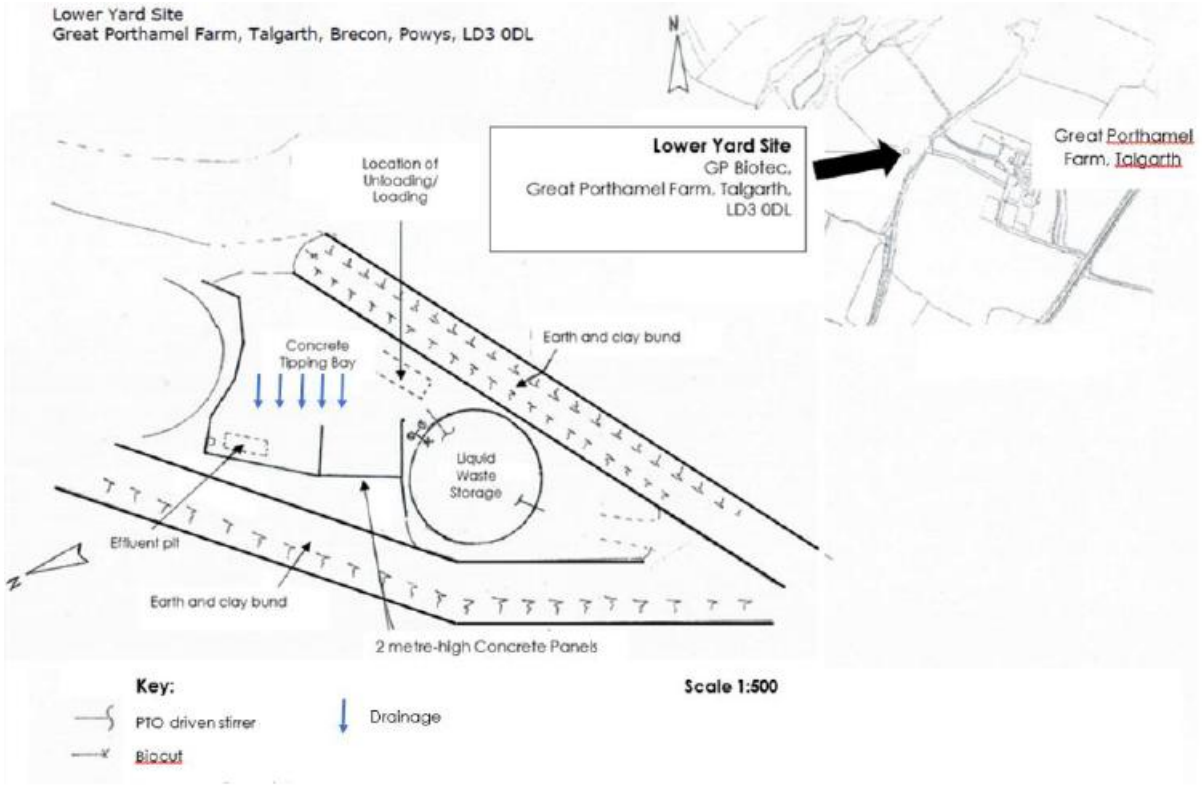


Figure 3.6 – Drainage Plan of SR Area to be included within permit boundary

4. PROPOSED VARIATIONS

4.1 Type of Permit

GP Biotec are proposing a permit variation for their existing permit EPR/AB3233DW/V008 for the following reasons:

- Consolidation of the areas and activities currently covered by SR2010 No.17 EPR/BB3099CG within the main EPR/AB3233DW/V008 Part A(1) installations permit.
- Inclusion of second additional area, currently the site's main digestate lagoon and ancillary buildings and storage including a grain store, machine storage and storage for Red Diesel and AdBlue. This area is situated to the west of the current permitted area.
- Add an additional CHP engine to the permit, allowing for 3 CHPs in total to be operated on site.
- Add two additional liquid waste pre-storage tanks to the permit.
- Add a new waste reception hall to the permit. This would be located to the south of the existing waste reception hall and within the existing permitted boundary. The building and will allow for supplementary/alternative storage of received waste. This new reception hall will not increase the total permitted storage capacity at any one time but will allow for alternative storage options during times of maintenance/upgrades to the existing reception hall.

There will be no changes to the types and volumes of permitted wastes accepted on site. A full list of EWC codes to be included on the permit in accordance with that currently permitted has been provided in Error! R eference source not found. below.

It is proposed to add two new pre-storage tanks to optimise the process and an additional CHP for the production of additional energy. Other than this optimisation, there will be no fundamental changes to the treatment or processing activities.

All activities onsite will continue to meet the definition of an Installation as defined by Schedule 1 of *The Environmental Permitting (England and Wales) Regulations 2018 (as Amended).*

The below table details the activities onsite. Any changes as a result of this proposed variation are shown in red text. It must be noted that waste storage activities undertaken at present under the Standard Rules permit, are already permitted by the Installation permit and no new waste storage activity will be required.

Table 4.1 – Proposed Activity Table

Activity Reference	Description of Specified Activity	Limits of Specified Activity
A1 S5.4A(1)(b)(i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities: Biological Treatment.	Anaerobic Digestion (with a capacity exceeding 100 tonnes per day) of permitted waste. R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes). R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it was produced).	All storage tanks and chambers will be sealed. The digester and waste tanks shall be located on an impermeable surface with sealed drainage with engineered bund(s) with the capacity to contain 110% of the largest volume tank and 25% of the combined volume of all the tanks in the bund in case of spillage.

	D9: Physico-chemical treatment which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 (e.g. evaporation, drying, calcinations etc).	The containment area shall be regularly inspected. Foul water will be discharged via a sealed drainage system to a holding tank and used in the digestion process. Anaerobic Digestion of wastes including pasteurisation and chemical addition. Wastes as specified in table S2.2. Pre-treatment of waste including shredding, sorting, compaction, bailing, mixing and maceration. Gas cleaning by biological or chemical scrubbing and upgrading to biomethane. Gas storage and drying. Treatment of digestate including screening to remove plastic residues, centrifuge or pressing, addition of thickening agents (polymers) or drying. The maximum throughput of animal waste Note 1 shall be 30 tonnes per day. The total quantity of waste accepted at the site shall be less than 75,000 tonnes a year. Use of pressure valves to protect the integrity of the plant. Such systems should not be used routinely to vent unburnt biogas. All food waste to be stored indoors and treated on an impermeable surface with sealed drainage, surrounded by a bund with a capacity of at least 110% of the largest vessel and 25% of the total tankage volume. Digestate shall be stored within covered containers or covered lagoons and should be of a design and capacity fit for purpose. All biogas condensate shall be discharged into a sealed drainage system. From receipt of permitted waste through to its digestion and

		recovery of by-products from the installation.
A2 Biogas storage and supply system	Storage of biogas arising from the Anaerobic Digestion Plant	From receipt of gas into the holders to supply to the listed activity
A3 Emergency flare operation	Use of an auxiliary flare required only for periods of breakdown or maintenance of the CHP engines. D10: Incineration on land	From receipt of biogas to the release of combustion products from the flare stack
A4 Combustion of biogas in three combined heat and power (CHP) engines. The thermal input rate of CHP1 is 2.76 MWth, CHP2 is 3.36 MWth and CHP3 is 1.31MWth R1: Burning of waste as a fuel	From receipt of biogas produced on site to combustion via a CHP engine with the release of combustion gases.	
A5 Combustion of biogas in standby biogas boiler with a thermal input of 928 kWth.	From receipt of biogas produced on site to combustion via a standby boiler with the release of combustion gases.	Standby boiler to provide heat for the anaerobic digestion process in the event one of the CHP engines are offline.
A6 Gas upgrading	Upgrading of biogas to biomethane (including the removal of moisture and other substances such as carbon dioxide, hydrogen sulphide and volatile organic compounds, with optional supplementing with Propane for CV improvement) for injection into the National Grid.	Biomethane production limited to 40,102,820 kWh/annum (up to 700m3/hr)
A7 Raw Material Storage	Storage of raw materials including propane	From the receipt of raw materials to despatch for use within the facility.

4.2 Raw Materials

4.2.1 Feedstocks

The volume and type of wastes accepted at the facility will not alter as a result of this permit variation.

All wastes will be accepted on site in accordance with the site's Environmental Management System which is provided within **Annex C – Environmental Management System.**

A detailed list of European Waste Catalogue (EWC) codes of wastes that are accepted by the site is provided in below. This list has been taken from the current environmental permit and has not changed as a result of this permit variation application.

Table 4.2 – Proposed List of EWC Codes

Waste Code	Description
02	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 01	sludges from washing and cleaning
02 01 02	animal-tissue waste

02 01 03	plant tissue waste
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
02 01 07	waste from forestry
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
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 02 99	wastes not otherwise specified – [lairage waste – soiled animal bedding]
02 03	wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee 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
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 04	wastes from sugar processing
02 04 01	soil from cleaning and washing beet
02 04 03	sludges from on-site effluent treatment
02 05	wastes from the dairy products industry
02 05 01	materials unsuitable for consumption or processing
02 05 02	sludges from on-site effluent treatment
02 06	wastes from the baking and confectionary industry
02 06 01	materials unsuitable for consumption or processing
02 06 03	sludges from on-site effluent treatment
02 07	wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment

In addition to the above feedstocks, the site also stores crops and silage in clamps outside of the permitted area for use in the AD process. There are no proposed changes to crop or silage storage as part of this variation.

As part of this variation, a new waste reception building is proposed. This will provide back-up storage for the main waste reception building, being utilised primarily when maintenance work or cleaning is required within the main reception building. It is not currently proposed to increase the volumes of waste stored onsite at any one time.

4.2.2 Raw Materials

The following raw materials are stored on site for use in the process, its directly associated activities and general use.

Table 4.3 – Raw Materials and Storage Tank Inventory

Material	Tank Inventory	Description	Location	Fate
Sileage / whole crop	5,000 – 10,000 tonnes	Existing feeding hopper	Anaerobic Digestion 'clean' Process Area External	Digested in the anaerobic digestion process. PAS110 Digestate used as soil conditioner and fertilizer for Great Porthamel Farm
Biogas	3 x Primary Digestion Tanks with Integrated Gas Store 24 x 6m 1 x Secondary Digestion Tank with Integrated Gas Store 28m x 6m	Cast-in-situ concrete tank Fully insulated Double membrane gas stores 5,605 m^3 capacity (total for all tanks) Working volume ~ primary tanks 3 x 2714m^3, secondary tanks 1 x 3500 m^3 To digest organic material and convert to biogas.	Anaerobic Digestion Process Area External – within secondary containment	Biogas is transferred to Biogas Upgrade Plant, CHPs or Standby Biogas Boiler
Digestate	2 x Pre-storage tanks 1,000m3 each	Cast in-situ concrete roofed tanks	Anaerobic Digestion Process Area	Transfer to storage lagoon
Liquid Propane Gas	Propane Store 12 tonnes	LPG tank (underground) Supplier Specification	Top Yard External – within secondary containment	Entry to gas grid
Activated Carbon	3 x stainless steel tanks each containing 1100 l of activated carbon	Activated Carbon stainless steel tanks	Biogas upgrading plant	Waste, recycled
Odorant	40 kg odorant in GA50 Stainless Steel Schmidt Container	Neat Blend Mercaptan in stainless steel container, bunded	GEU – bunded container	Entry to gas grid
Red Diesel	10,000 liters	Red diesel for use in onsite vehicles	Machine Store	Use in onsite vehicles
AdBlue	2500 liters	Red diesel for use in onsite vehicles	Machine Store	Use in onsite vehicles
Liquid waste tanks	30,000-liter steel paneled storage tank	Storage of liquid waste	Waste Storage Area (previous SR area to be included within permit boundary)	Use in the digestion process

4.3 Existing Process Description

GP Biotec operates an on-farm wet, mesophilic anaerobic digestion (AD) plant, processing waste from a variety of sources, but predominantly a mixture of animal by-product (ABP) waste and non-ABP waste from abattoirs, as well as farm energy crops (grown by the Sites affiliated farm business) into biogas and digestate.

The biogas is converted into heat and electricity. A proportion of the heat is used to heat the parts of the plant which require it and to heat Site offices and other buildings. All the electricity produced (minus the parasitic load to operate the plant) is metered into the National Grid and sold to a renewable energy supplier.

The digestate produced by the AD process is pasteurised and controlled by a Quality Policy and Quality Management System. The separated digestate liquor and fibre are both certified under the Biofertiliser Certification Scheme and PAS110 and therefore no longer considered a waste material.

The digestate fractions are spread onto farmland owned and/or managed by GP Biotec's affiliated company GP Services (a farm business and haulage company).

A more detailed description of each of the processes is provided below:

4.3.1 Pre-treatment

ABP solid waste is pretreated on site to ensure a more unform particle size is achieve which aids in process efficiency. The solid waste undergoes initial maceration at the base of the ABP solid feeder before being mixed with a small amount of digestate from Digester 1 to improve pumpability. The waste-digestate mix then passed through a *Rotacut* that further reduces particle size to 21mm whilst removing any contaminants that are larger than 21mm in a stone trap.

Liquid wastes do not undergo any pre-treatment other than screening to remove non-liquid impurities. Blood is stored in a designated blood tank and can be operated independently of the liquid waste tank. Both tanks feed the digesters on an hourly basis, controlled by the SCADA system.

Non-ABP/farm derived feedstock is macerated at the bottom of the non-ABP feeder in the same way and is controlled by the SCADA system at an hourly rate.

There are two feeders to segregate the ABP from non-ABP feedstock.

4.3.2 Primary Digestion Phase

Active digestion of all waste takes place within sealed digestion tanks.

Following initial storage, the waste and farm derived materials are pumped into the Primary Digester tank at an hourly rate. A small amount of digestate is recirculated from the Primary Digester to the ABP solid feeder in order that the ABP solid waste is mixed with some digestate and is therefore more easily pumped to the Primary Digester. The waste is retained in the Primary Digester tank for approximately 15 days, and the temperature is maintained at a mesophilic range (25 - 45^{o}C, in accordance with Environment Agency/ Natural Resources Wales Guidance). A range of micro-organisms digest the waste, whereby a methane-rich gas (biogas) is released, and a nutrient rich material (digestate) is produced.

Once the material in the Primary Digester tank has achieved the time/temperature parameters and/or the biogas yield required it is cut and pumped through a 12mm screen, before being pumped to the Secondary Digester tank, where it remains in the secondary digestion phase for approximately 20 days.

Within the primary digestion tank, the digestate settles into different density phases. Less active material naturally migrates to the bottom of the tank.

The feeding is controlled electronically, and a set quantity of each feed stock determined by the Operator is fed hourly.

The material in the digesters is continuously stirred by one submersible mixer and two paddle mixers.

All biogas formed within the digester is collected in the airspace at the very top of the tank and is subsequently pumped through the gas treatment measures (condensate pit and dry carbon filter) designed to remove excess condensate through gas drying and H_2S respectively.

4.3.3 Secondary Digestion Phase

Material transferred from the primary to the secondary digester has already undergone cutting & pumping ready for digestion.

The material in the digesters is continuously stirred by one paddle and two submersible mixers.

All biogas formed within the digester is collected in the airspace at the very top of the tank and is subsequently pumped through the gas treatment measures (condensate pit and dry carbon filter) to remove excess condensate through gas drying and H_2S respectively. Once the biogas has gone through the carbon filter the gas is directed to the onsite CHP engines.

The CHP engines create heat for the onsite hot water circulation system or electricity for export to the National Grid. An additional CHP engine is proposed as part of this permit variation. This will be operated and managed in the same manner as the existing engines.

4.3.4 Batch Pasteurisation

All material from the Secondary Digester is batch pasteurised prior to discharge from the site for landspreading.

Batch pasteurisation takes place within one of three sealed $10m^3$ batch pasteurisation tanks where it is heated in accordance with the time / temperature requirements (1 hour 2 minutes at 72^oC) stipulated by the ABP Directive.

The pasteurisation plant is comprised of 3 pasteurisation tanks each with $10m^3$ volume.

Each pasteuriser tank is equipped with a top-mounted agitator. The purpose of the agitator (4 bladed axial stream turbine) is to keep the product homogeneous and to ensure a good heat transfer. The pasteurisation process is operated in batches.

The pasteurisation cycle comprises the following steps:

- Filling the Pasteurisation tank;
- Heating the digestate;
- Keeping the digestate at a minimum temperature of 72°C for an unbroken period of least 1 hour 2 minutes;
- Emptying the Pasteurisation tank (pumping to storage on site); and
- Testing of material.

The pasteuriser tanks are each equipped with two temperature transmitter and load cells.

An individual batch number is given to each individual batch processed through each of the pasteurisers.

Each batch is monitored (temperature, amount & time) from beginning to end (start filling to pumping empty).

Each batch record is verified to ensure that the time and temperature requirements have been met after which the digestate end product is considered ready for use. In practical terms this Validation process is software controlled, and the plant configured to ensure that pasteurisation comfortably achieves the minimum time/temperature requirements without interruption.

Each pasteuriser is fitted with two thermocouples to ensure the correct temperature is achieved throughout the mix. The heat is produced by hot water circulating through internal pipes within the pasteuriser.

In the event that the above time / temperature requirements are not met, the entire batch is re-pasteurised and processed until the pasteurisation can be confirmed.

Once pasteurisation has finished the material is sampled to ensure it has complied with PAS:110 parameters. Samples for PAS110 testing are taken in accordance with the guidance given in '*Sampling Guidance for Liquid Materials - Sample taking and sample preparation Adapted for PAS 110 from Chapter I – Methods book Bundesgütemeinschaft Kompost*'.

4.3.5 Separation and Storage

All pasteurised digestate is collected in a 1000m^3 glass coated steel tank (DS1) before being passed through a screw press separator with 1mm screen. The liquor is stored in a 4000m^3 lagoon and is deemed ready for use; the fibre is stored in a covered shed in bays and is ready to use.

The digestate lagoon, which will be incorporated into the permit boundary as a result of this variation, complies with PAS 110:2014 and the Anaerobic Digestion Quality Protocol. The lagoon has been constructed in line with the BAT and Appropriate measure guidance and digestate is stored in the lagoon for no longer than 6 months.

The digestates produced – solid and liquid fractions - are used in GP Biotec's own farm operations.

Two additional digestate pre-storage tanks have been proposed as part of this permit variation, each with a 1000m^3 capacity. However, these will not increase the amount of waste stored on site at any given time, nor will it increase the maximum annual storage capacity of the site. The additional tanks are proposed to provide buffer capacity to help improve operational efficiency by providing alternative storage options during cleaning/maintenance of existing tanks.

4.3.6 Biogas Production

The biogas produced in both digesters is fed to the gas cleaning unit. The biogas contains some hydrogen sulphide, so to ensure that this is removed, the biogas is passed through a carbon filter before it is fed to the CHP engines, biogas boiler, or to grid. The site's closed flare is utilised only in emergency.

4.4 Waste

There is limited waste generated on site, with the only waste streams identified arising from office and canteen waste.

This waste will be managed accordingly, with suitable waste being placed in the relevant collection container on site (as part of the permitted activity) with any non-conforming waste arising from either of these sources being disposed of through the normal refuse collection.

Digestate produced by the process is compliant with the Digestate Quality Protocol (WRAP, 2014) and achieves PAS 110 accreditation. As such, digestate is not be considered a waste.

4.5 Water and Energy

The facility has been constructed in-line with Best Available Techniques (BAT) for energy usage. Biogas produced by the digestion process is utilised in combined heat and power units to provide the parasitic heat and energy requirements of the plant.

All plant and equipment has been chosen both on ability to perform and on its energy efficiency. GP Biotec have an operation and maintenance programme in place to undertaken routine inspections and checks. Plant is monitored to ensure that no plant is operating ineffectively leading to the loss of energy. Regular maintenance takes place on site and any inefficient plant is replaced.

Water is segregated and recirculated through the process where possible. Minimal mains water is required; leachate, condensate and contaminated surface water run-off generally meets the water requirements of the process.

5. EMISSIONS

The following sections discuss the changes in emissions to air, controlled waters, ground / land and sewer that may arise from the proposed variation to the activities.

5.1 Emissions to Air

This permit variation seeks to add one additional point source emission to air.

This will arise through the additional CHP unit (1.3MWth), which will bring the onsite total of CHP units to three.

A full Air Quality Assessment has been carried out for the site using the AERMOD atmospheric dispersion modelling software. The significance of the impacts has been assessed in accordance with the Environment Agency'/ NRW's Risk Assessment Guidance and professional judgement.

The tables below outline the emission rates for the CHP units. Additional air emissions onsite are limited to a flare and standby boiler. Nether have been included in the AQA due to the flare being used only in emergency and not operating at the same time as the CHP units and the standby boiler capacity being below the Medium Combustion Plant (MCP) threshold.

Table 5.1 – Emission Parameters - Existing CHP 1

Parameter	CHP 1 (a)	
Stack Height (m)	9.7	
Effective Stack diameter (m)	0.3	
Temperature of release (°C)	171	
Actual flow rate (Am^3/s)	1.24	
Oxygen content (%v/v dry)	8.3	
Moisture content (%v/v)	12.3	
Normalised Flow Rate (Nm^3/s) (b)	0.53	
Emission velocity at stack exit (m/s)	17.5	
Emissions (mg/Nm^3)	**mg/Nm^3(b)**	**g/s**
NOx	500	0.265
SO2	350	0.185
CO	1,400	0.741
VOCs (including methane) VOCs (excluding methane, assumed)	1,000 50	0.529 0.027

(a) Data obtained from the January 2024 extractive monitoring report which provided the highest flow rate for the four years 2022 and 2025

(b) At 5% O_2, 273.15K, 101.3 kPa, dry

Table 5.2 – Emission Parameters -Existing CHP 2

Parameter	CHP 2 (a)
Stack Height (m)	8.0
Effective Stack diameter (m)	0.3

Temperature of release (°C)	165.5 (b)	
Actual flow rate (Am^3/s)	1.86 (c)	
Oxygen content (%v/v dry)	8.4	
Moisture content (%v/v)	14.0	
Normalised Flow Rate (Nm^3/s) (d)	0.78	
Emission velocity at stack exit (m/s)	26.3	
Emissions (mg/Nm^3)	**mg/Nm^3(d)**	**g/s**
NOx	500	0.391
SO2	350	0.274
CO	1,400	1.095
VOCs (including methane) VOCs (excluding methane, assumed)	1,000 50	0.782 0.039

(a) Except for temperature, data obtained from the January 2023 extractive monitoring report which provided the highest flow rate for the four years 2022 and 2025
(b) Sample port is prior to the heat exchanger and measured temperatures do not reflect the exhaust gas at exit to atmosphere, average temperature for CHP1 for the four monitoring periods adopted for CHP 2
(c) At 165.5˚C
(d) At 5% O_2, 273.15K, 101.3 kPa, dry

Table 5.3 – Emission Parameters -New CHP 3

Parameter	CHP 3 (a)	
Stack Height (m)	8.0	
Effective Stack diameter (m)	0.25	
Temperature of release (°C)	165.5 (b)	
Actual flow rate (Am^3/s)	0.98 (c)	
Oxygen content (%v/v dry)	8.5 (d)	
Moisture content (%v/v)	13.1	
Normalised Flow Rate (Nm^3/s) (e)	1.11	
Emission velocity at stack exit (m/s)	19.9	
Emissions (mg/Nm^3)	**mg/Nm^3(e)**	**g/s**
NO_x	500	0.206
SO_2	107	0.044
CO	1,400	0.577
VOCs (including methane) VOCs (excluding methane, assumed)	1,000 50	0.412 0.021

(a) Data taken from manufacturer's technical specification except for temperature
(b) Average temperature for CHP1 for the four monitoring periods adopted for CHP 3
(c) At 165.5˚C
(d) Average of the measured data for CHP 1 and CHP 2 for the four years
(e) At 5% O_2, 273.15K, 101.3 kPa, dry

There is a potential for fugitive emissions to arise on site, in the form of dust, odour, bioaerosols and methane / ammonia. Details regarding these potential emissions can be found below.

5.2 Emissions to Controlled Waters

There are no additional emissions to controlled waters arising from the proposed variation application. Emission points W1 and W2, as stated in the current permit, will remain in operation and unchanged.

5.3 Emissions to Ground or Land

There are no emissions to ground or land arising from the proposed variation application.

5.4 Emissions to Sewer

There are no emissions to sewer arising from the proposed variation application.

5.5 Dust Emissions

There will be no dust emissions arising from this proposed variation.

There are no inherently dusty materials stored onsite. Incoming wastes are stored within the waste reception building or covered tanks/vessels. The additional building proposed will be constructed and designed in accordance with BAT and Appropriate Measures.

5.6 Odour Emissions

The site uses an effective combination of management techniques to ensure odour emissions from the site are minimal. These include (but are not limited to):

- Covering non-waste feedstocks within the storage clamps;
- Minimisation of handling times with materials quickly covered following delivery / transfer to the process;
- Storage of malodourous wastes within an enclosed building;
- Covering of the digestate lagoon and any tanks/vessels;
- Storage of solid digestate under cover;
- Vents from liquid feed tanks / blending tanks and PRVs are connected to the abatement system in the building;
- Treatment of biogas prior to its use in combustion onsite.

The site currently operates a functional Odour Management Plan that aids the site in managing potential risks of odour emissions arising from their activities. This plan has been reviewed and updated where necessary to account for the proposed additions to the permit made in this application. A summary of the OMP can be found below:

- GP Biotec have formulated their OMP in line with the H4 Odour Management guidance provided by NRW.
- The plan details all the sources of odour arising from the activities that are believed to pose a risk. This includes odour arising from waste reception and storage, odour risks from the onsite

digester tanks and CHPs, and separation and storage of digestate (including the digestate lagoon).

- Measures taken to prevent or minimise odour risks include strict adherence to the waste acceptance procedures, the enclosure of waste storage locations and all process pipework and infrastructure and the usage of appropriate abatement to remove odorous species prior to release. The full details of odour prevention and minimisation techniques can be found in Annex E – Odour Management Plan.
- This application does not pose any additional significant odour risk from the site since all activities, with the exception of the new CHP engine, are existing activities already being undertaken by the operator.

5.7 Noise Emissions

The site does not consider there to be any significant changes to the site noise context arising from the changes proposed in this variation. The site is considered to be in a low sensitivity area with regards to noise, being located in a remote area with very few nearby receptors of concern and has not has a history of noise complaints. It is considered that the addition of the CHP, which is itself a small item of equipment, poses a low risk in regard to noise in the wider context of the site. As such, a Noise Impact Assessment has not been undertaken.

The site will continue to assess the risk of noise emissions from its activities, and if complaints are received will be investigated fully.

5.8 Bioaerosol Emissions

There are no new bioaerosol emission sources to be added as part of this variation. This variation is not expected to increase the risk of bioaerosols from any of its activities.

5.9 Fugitive Emissions

The facility minimises any fugitive releases of process emissions (including ammonia, methane and bioaerosols), dust and odour.

Odour, bioaerosols, dust and noise emissions are discussed in the sections above.

Fugitive methane emissions may occur during the transfer and production of biogas. A Leak Detection and Repair Programme (LDAR) in accordance with the guidance, is in place to monitor and assess these emissions, allowing quick implementation of repairs where required.

Additionally, pressure relief valves within the facility may be a source of fugitive emissions. All PRVs are appropriately installed, weather protected and subject to routine inspection and maintenance.

The two additional tanks proposed as part of this permit variation are covered, with vents connected to abatement or the main gas line as required by the Biological Treatment: Appropriate Measures Guidance.

6. EMISSIONS MONITORING

6.1 Emissions to Air

All existing emissions to air will be monitored as per the current permit.

It is assumed CHP 3 will be subject to the same monitoring requirements as CHP 1 and CHP 2 and will be monitored accordingly. These requirements are detailed below, as per the current permit and in accordance with the MCPD requirements:

Table 6.1 – Monitoring Requirements

Emission Point	Parameter	Limit	Reference Period	Monitoring Frequency
A1 Stack 1 on CHP (CHP 1)	Oxides of Nitrogen (NO and NO2 expressed as NO2)	500 mg/m3	Hourly Mean	Annually
	Carbon Monoxide (CO)	1400 mg/m3		
	Sulphur Dioxide (SO2)	350 mg/m3		
	Total Volatile Organic Compounds (TVOCs) (as carbon)	1000 mg/m3		
A2 Stack 2 on CHP (CHP 2)	Oxides of Nitrogen (NO and NO2 expressed as NO2)	500 mg/m3	Hourly Mean	Annually
	Carbon Monoxide (CO)	1400 mg/m3		
	Sulphur Dioxide (SO2)	350 mg/m3		
	Total Volatile Organic Compounds (TVOCs) (as carbon)	1000 mg/m3		
A9 Stack 3 on CHP (CHP 3)	Oxides of Nitrogen (NO and NO2 expressed as NO2)	500 mg/m3	Hourly Mean	Annually
	Carbon Monoxide (CO)	1400 mg/m3		
	Sulphur Dioxide (SO2)	350 mg/m3		
	Total Volatile Organic Compounds (TVOCs) (as carbon)	1000 mg/m3		

The site will monitor in accordance with any future requirements set in the environmental permit.

6.2 Emissions to Controlled Waters

There will be no changes to monitoring of emissions to controlled waters as part of this application.

6.3 Emissions to Ground or Land

There are no emissions to ground or land proposed as part of this application.

6.4 Emissions to Sewer

There are no emissions to sewer proposed as part of this application.

6.5 Fugitive Emissions

6.5.1 Dust Emissions

There is no active monitoring of dust emissions proposed as part of this application. However, on-site staff conduct continuous monitoring of dust emissions by visual inspection means, and appropriate actions are taken to reduce potential impacts in the unlikely event that they arise.

All staff are trained in visual inspections to check for signs of dust.

6.5.2 Odour Emissions

There is no additional active monitoring of odour emissions proposed as part of this application. However, on-site staff conduct periodic monitoring of odour emissions by olfactory surveys in accordance with the OMP and the site operates of vigorous complaints and reports procedures. Appropriate actions are taken to reduce potential impacts in the unlikely event that they arise.

All staff will be trained in olfactory surveys to detect for odour emissions at the earliest opportunity.

Details of odour monitoring can be found in **Annex E – Odour Management Plan.**

6.5.3 Bioaerosol Emissions

There are no new sources of bioaerosols being introduced as part of this variation. All existing sources of bioaerosol emissions are managed in line with appropriate measures for bioaerosols. The site will continue to operate responsibly and ensure that the risk of bioaerosols to nearby receptors remains low. This is done through a comprehensive combination of measures, including:

- Maintenance of plant and equipment to ensure fugitive emissions are not released;
- Storing all waste with sealed units or within the waste reception building. Crop silage will be covered at all times;
- Processing wastes and feedstocks as soon as reasonably practicable to minimise bioaerosol risk; and
- Quarterly monitoring of biogas releases from pressure release valves on digester units.

6.6 Noise Emissions

The site does not currently undertake monitoring of noise emissions on an ongoing basis and there is none proposed as a result of this application. The site will continue to implement appropriate measures when it comes to managing and mitigating noise emissions arising from onsite activities.

A Noise Impact Assessment has not been undertaken for this application on the basis that the site is remote, additional equipment minor and there is no history of noise complaints. Should any noise complaints be received by nearby, local residents, a full investigation will be instigated to determine the source of the noise and corrective actions put in place to mitigate on an ongoing basis.

7. SITE OPERATIONS

The following sections outline key site operations relevant for this permit variation application.

7.1 Environmental Management System

GP Biotec operate the site in accordance with an Environmental Management System which is structured to meet the requirements of the Environmental Permitting Regulations and follows a similar structure to the ISO 14001:2015 standards for environmental management systems (EMS).

The relevant EMS procedures will be updated / created in relation to the CHP units and additional storage tanks.

A summary of the EMS has been provided in **Annex C – EMS Summary.**

7.2 Operating Hours

The proposed operating hours of the site are as follows:

Monday to Friday – 07:00am – 18:00pm

Saturday – 07:00am – 13:00pm

Sunday and Bank Holidays – Non-operational

No variation to these is proposed as part of this permit variation.

7.3 Operator Competency

Paul Jones will continue to provide the technical competency required for the site (Level 4 WAMITAB qualifications as required by the WAMITAB competency scheme). In the case where Paul Jones is unable to provide technical competency for the site for the required duration of time, Lucy Owen will provide technical cover.

Evidence of WAMITAB certification for both TCMs is provided in **Annex H – Operator Competency**

7.4 Site Operational Procedures

The site operates under a suite of operational procedures that ensure the safe and efficient running of site operations. Updates to these procedures to include for the additional CHP and storage tanks have been undertaken.

7.5 Site Security

Site security measures comprise:

- 24/7 CCTV surveillance;
- Automatic security gates that remain shut at all times, unless being access by an authorised person. All access points are locked outside of operational hours.

The additional site areas to be incorporated into the permitted boundary are individually fenced.

7.6 Site Inspection and Maintenance

The site is subject to a regular inspection and maintenance program to ensure the integrity of the site infrastructure remains high in order to prevent pollution to the environment. Site inspections aim to detect

signs of degradation, damage or erosion of any of the site features, including site fencing, concrete, site buildings and waste storage containers.

This maintenance program includes, but is not exclusive to:

- Repair of boundary fences and micro-netting as required.
- Repair, or where necessary replacement, of the site's concrete hardstanding.
- Repair to any part of the site that may result in pollution to the environment or risks to human health if not repaired.

7.7 Accident and Emergencies

The following sections outline the sites accident management procedures. These will remain relevant following the proposed variation.

7.7.1 Accident Management Plan

GP Biotec operate its own Accident Management Plan based around the specific risks associated with the site operations.

The key aspects of the site's Accident Management Plan are:

- Reviewed by Site Management annually, and as soon as practicable after an accident.
- Considers hazards presented by
  - emergency shut-down procedures;
  - actions in case of fire;
  - actions in case of fire/emergencies;
  - contaminated firewater;
  - failure of any equipment;
  - spillages and uncontrolled releases;
  - plant or equipment failure (e.g. over-pressure of vessels and pipework, blocked drains);
  - vandalism; and
  - flooding.
- Identify events or failures that could damage the environment.
- Assesses the likelihood and the potential environmental consequences from accidents at the site.
- Proposes action to minimise the potential causes and consequences of accidents.

The Applicant's Accident Management Plan has been included in **Annex H – Accident Management Plan**. This plan is reviewed annually and updated accordingly. Evidence of its review can be found in the document's status log.

7.7.2 Incident Reporting

The reporting of incidents and non-conformities forms a key component of the companies Environmental Management System. Identified non-conformities under the system include, but are not limited to the following:

- Non-compliance to any permitted conditions or consent limit (excessive waste being stored, missing of reporting deadlines, breach of any permitted limits etc);
- Internal Audit findings (legal non-compliances, EMS procedural breaches, system non-compliances);
- External and Internal Complaints; and
- Whenever a plant malfunction, breakdown or failure, or any near miss occurs.

The company's EMS undergoes periodic external audit and review to ensure that both compliance and continuous improvement is achieved. The EMS requires that all identified incidents, and non-conformities will be investigated and closed out.

8. IMPACTS TO THE ENVIRONMENT

8.1 Impacts to Air

An updated AQA has been completed and submitted as part of this application. The AQA has been provided in Annex D.

Scope of the Assessment

The scope of the assessment has been determined in the following way:

- Review of air quality data for the area surrounding the site, including data from the Defra Air Quality Information Resource (UK-AIR);
- Desk study to confirm the location of nearby areas that may be sensitive to changes in local air quality; and
- Review and modelling of emissions data which has been used as an input to the US AERMOD dispersion model.

Detailed air quality modelling using the AERMOD 12 dispersion model has been carried out to determine the local air quality impacts associated with the retained emissions to air. The assessment has considered emissions of NO_x, SO_2, CO and VOCs associated with the three CHP units onsite.

8.1.1 Sensitive Human Receptors

Specific receptors have been identified where people are likely to be regularly exposed for prolonged periods of time (e.g. residential areas). The location of each of the discrete sensitive receptors is presented in **Table 8.1**.

Table 8.1 – Location of Sensitive Human Receptors

ID	Receptor	Type	Easting	Northing
D1	Coldbrook	Residential	315095	235628
D2	Coldbrook	Residential	315432	236015
D3	Coldbrook	Residential	315898	236238
D4	Residential to West	Residential	314639	235155
D5	Residential to North-east	Residential	315667	236682
D6	Pontithel	Residential	316466	236671
D7	Lower Porthamel	Residential	316254	235698
D8	Porthamel Cottages	Residential	316457	235651
D9	Porthamel Cottages	Residential	316550	235770
D10	Residential to North-east	Residential	316986	235712
D11	Residential to North-east	Residential	317250	235846
D12	Bradwys - East	Residential	316977	235218
D13	Lodge bungalow	Residential	317265	234472
D14	The Lodge	Residential	317244	234423
D15	Farm to South-east	Residential	317323	233816
D16	Park Bungalow	Residential	316408	233732
D17	Talgarth	Residential	315815	234301

D18	Talgarth	Residential	315563	233885
D19	Talgarth	Residential	315203	234034
D20	Castle Green	Residential	315237	234280
D21	The Cobblers	Residential	314831	234553
D22	Bronllys Castle	Residential	314886	234716
D23	Great Porthamel Farmhouse	Residential	315936	235200
D24	P Jones Residential Property	Residential	315972	235103
D25	Porthamel Mill	Residential	315938	235533

The maximum impact of pollutant emissions from the site at sensitive human receptors is considered not significant on the basis of the Environment Agency criteria (as adopted by NRW) and professional judgement considering the worst-case assumptions that have been adopted for the assessment and the change in impact as a result of the new CHP unit.

8.1.2 Sensitive Habitat Receptors

NRW's risk assessment guidance states that the impact of emissions to air on vegetation and ecosystems should be assessed for the following habitat sites within 10 km of the source:

- Special Areas of Conservation (SACs) and candidate SACs (cSACs) designated under the EC Habitats Directive;
- Special Protection Areas (SPAs) and potential SPAs designated under the EC Birds Directive; and
- Ramsar Sites designated under the Convention on Wetlands of International Importance.

Within 2 km of the source:

- Sites of Special Scientific Interest (SSSI) established by the 1981 Wildlife and Countryside Act;
- National Nature Reserves (NNR);
- Local Nature Reserves (LNR);
- Local wildlife sites (Sites of Interest for Nature Conservation, SINC and Sites of Local Interest for Nature Conservation, SLINC); and
- Ancient woodland.

Habitat receptor designations and locations relevant to the assessment are presented in **Table 8.2**.

Table 8.2 – Sensitive Habitat Receptors

Site ID	Receptor	Primary Habitat	Type
H1	Afon Gwy (River Wye) SAC	Raised and blanket bog and dry heaths	SAC
H1	Afon Llynfi SSSI	Otters and some species of fish	SSSI
H2	Pwll-y-wrach SSSI	Broadleaved deciduous woodland	SSSI
H3	Bronlly's Castle SINC	Assumed broadleaved deciduous woodland	LWS
H4	LLangorse Lake SAC	Broadleaved deciduous woodland	SAC
H5	Drostre Bank SAC	Old sessile oak woods	SAC
H6	River Usk SAC	Raised and blanket bogs	SAC

The impact of emissions from the new CHP unit on international, national and local habitat sites was also determined and assessed as not significant compared with existing background conditions and relevant critical levels and critical loads, taking into consideration the worst-case assumptions that have been adopted for the assessment.

Based on the above information, it is considered that the proposed additional operations at the Site do not have an adverse impact on local air quality.

8.2 Impacts to Controlled Waters

There are no impacts to controlled waters as a result of the proposals in this application.

8.3 Impacts to Ground or Land

There are no impacts to ground or land as a result of the proposals in this application.

8.4 Impacts to Sewer

There are no impacts to sewer as a result of the proposals in this application.