

GP Biotech Ltd
Great Porthamel, Talgarth,
LD3 0DL



RESIDUE MANAGEMENT PLAN

1.0 Scope

This plan is produced to fulfil requirements for improvement in line with best available techniques for procedures, processes, work activities and work areas that leads to the generation of residue. Residue for compliances purposes is the solid waste generated by the waste treatment activity and is not directly related to the type of waste treated in the plant.

The main objective is to minimise and prevent if possible, waste or residue from the processes undertaken which is mainly the anaerobic digestion of organic waste products sourced from predominantly abattoirs and food factories.

This plan also contributes to the fulfilment of clause 1.4.2 as stated in GP Biotec's environmental permit (Permit number EPR/AB3233DW). The plan details activities and measures undertaken to recover waste, dispose of waste and avoid waste when it is possible.

2.0 Identification of Residue

The plan will utilise the waste hierarchy framework as defined in article 4 of the Waste Framework Directive.

An evaluation of the hierarchy against activities carried out at GP Biotec with all of its associated benefits as well as applicable legal requirements have been outlined in Table 1.1 below. An interpretive analysis of this review will be covered by considering the following;

- a) Review of waste generated from the site's activities.
- b) Treatment of waste from activities
- c) Assessment of measures
- d) Changes applicable after review taking into consideration effectiveness of systems and their relevance.

Table 1.1 – GP Biotec Residue / Waste Management							
Description of Material	Where is it created?	Landfill classification (inert, non-hazardous, hazardous)	How is it collected / handled?	To be Recycled/ Reused, disposed, hazardous waste/WEE collection etc.	Waste Carrier	Waste Carrier Reg. No	Records Held
Cardboard	Offices and farm	Non-hazardous	Wheelie bin	Reuse and recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Paper	Offices	Non-hazardous	Wheelie bin	Reuse and recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Plastic	Offices	Non-hazardous	Wheelie bin	Recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Metal	Site	Non-hazardous	Wheelie bin	Recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Wood	Farm	Non-hazardous	Wheelie bin	Recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Glass	Site	Non-hazardous	Wheelie bin	Recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Food	Office	Non-hazardous	Wheelie bin	Recycle	Thomas Waste Management	CBDU6295	Waste Transfer Note
Waste engine, gear & lubricating oils	Maintenance & repair of Motor Vehicles	Non-hazardous & hazardous	Road Tanker	Recycle	Oil Salvage Ltd	CBDU125540	Consignment Note

General Waste	Offices, Site & Farm	Non-hazardous	Wheelie bin	Recycle & Disposal	Thomas Waste Management	CBDU6295	Waste Transfer Note
COSHH	Site and Farm	Hazardous	Designated COSHH bin	Disposal	Oil Salvage Ltd	CBDU125540	Consignment Note
Sewage	Offices		Pumped directly into mains sewers	Disposal & Recovery of Biosolids	Dwr Cymru Welsh Water	-	-
Digestate (PAS110 Certified)	AD Process	By – Product	Digestate Liquor is stored in storage tank and lagoons and solid digestate is stored in field piles.	Recovery and recycle	GP Biotec Services		Spreading Records and Waste Returns
Spent Activated Carbon	AD Process	By – Product	USW research project into regeneration of spent carbon. Stored off site.	Recovery and recycle	University South Wales	-	-

2.1 Review of Residue Generated from Site's activities

Digestate which is the by-product resulting from the anaerobic digestion of waste for the production of electricity has achieved the end of waste criteria, hence is not regarded as a waste or in this case a residue. The Digestate is subjected to Anaerobic Digestion Quality Protocol (ADQP) to be certified as a Biofertilizer fit for agricultural land grazing and land restoration.

As part of GP Biotec's odour mitigation measures, the sites uses 4 carbon filtration Systems for the removal of odorous gases and the entrapment of gases that otherwise would have escaped into the atmosphere. This mechanism of odour control leads to the generation of residue, the spent activated carbon.

For every activated carbon that is used, roughly after 12 to 15 months, its absorbing abilities diminishes at which point it has to be replaced. The focus of GP Biotec's waste management system is to recover waste or dispose of waste without endangering human or animal health or cause harm to the environment through the engagement of best technological advise to ensure less material is used in the design and construction of infrastructures.

2.2 Treatment and Preparation for Reuse of Residue

GP Biotec reuses material and energy as part of its waste management system to reduce pollution and prevent harm to the environment.

In consultation with the University of South Wales (USW) and as part of the SMART consortium project, research is being undertaken on the prospects of recovering or regenerating used activated carbon. Plans are underway to fully reuse the spent activated carbon following a successful recovery of spent activated carbon in the laboratory.

Economically, this could be beneficial in a number of ways. Secondly, this contributes to the site's corporate social responsibility and legislative compliance i.e., best available techniques.

2.3 Assessment of Measures

Monitoring and maintenance of infrastructures allows for effective implementation of mitigation measures to prevent accident that could potentially result in contamination leading to the production of waste. The collapse of infrastructure or equipment failures could be potential sources of waste, hence early detection allows for repairs where possible and as a result a reduction in waste produced.

GP Biotec adheres to a strict environmental management policy with the full commitment of management to minimise and where possible prevent pollution and environmental nuisance caused by our activities, by implementing mitigation measures wherever reasonable and practicable. Consideration is given to the activities to prevent harm in particular to water, air,

soil, plant, or animals to ensure Zero nuisance where possible through noise or odours or without adversely affecting the countryside or places of special interest.

Amount and types of waste generated have remained fairly consistent over the years and have followed sustainable paths.

Waste types processed by the plant have also remained consistent and have passed acceptance criteria before being processed in the digestion tanks.

GP Biotec has reviewed its evaluation measures in line with its compliance commitments and company standards. A few best available techniques have been implemented to augment for an improved management of resources.

3.0 Recycling, Other recovery and Disposal

GP Biotec contracts Thomas Waste Recycling and Oil Salvage to collect waste produced on site. Both companies then sorts the waste into recyclable waste and disposal waste and sends a high percentage for recycling, where possible and are continually improving on their procedures to reduce the proportion which is sent for disposal.

4.0 Records

Records kept as part of our Residue Management Plan include;

- Digester Records. See [C:\Users\User\GP Biotec\Office - File Share\Site Records\05 Digester Records](#)
- Weighbridge records. See [C:\Users\User\GP Biotec\Office - File Share\Site Records\05 Digester Records\Weighbridge Reports 2019](#)
- Waste Management Register. See [C:\Users\User\GP Biotec\Office - File Share\Site Management\EMS\ISO DOCS\Register.](#)
- Register of Environmental Aspects. See [C:\Users\User\GP Biotec\Office - File Share\Site Management\EMS\ISO DOCS\Register.](#)