

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Biogen (UK) Limited

Merevale AD Plant

Merevale Lane

Baxterley

Atherstone

Warwickshire

CV9 2LA

Permit number

EPR/ZP3936WZ

Merevale AD Plant

Permit number EPR/ZP3936WZ

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

This permit allows the operation of an Anaerobic Digestion Plant for the processing of waste to produce biogas rich in methane and digestate. Biogas will be used as a fuel for combined heat and power generation. The liquid digestate is rich in nutrients and will be used as a fertiliser.

The facility will comprise of the following operations;

- Anaerobic Digestion (AD) plant undertaken under schedule 1 activity Section 5.4 Part A (1)(b)(i)
- Combined heat and power (CHP) plant (including an emergency flare) undertaken as a directly associated activity.

The installation is located at grid reference SP 28118 97294 on previously developed land. The nearest property is located approximately 250m to the south. The nearest built up areas are Baxterley, approximately 250m to the south west, Baddesley, approximately 800m to the north west and Atherstone approximately 1.9km to the north east.

The facility is designed to process up to 45,000 tonnes per annum of food wastes which will include source segregated food waste from households and commercial and industrial food waste which will contain Category 3 animal by-product material. The operator will operate the facility using a management system in line with the requirements of the ISO14001.

The waste is delivered to the site via road and discharged into an enclosed reception building. This building is equipped with an extraction ventilation system that will extract air to an odour abatement system which consists of activated carbon filters that will treat odour emissions prior to discharge to atmosphere. The solid waste undergoes a series of pre-treatment operations (which includes depackaging, shredding and maceration) to reduce the waste to the appropriate particle size. The resulting feedstock is then transferred to digesting tanks for processing.

Biogas is drawn off the digesters and used to generate electricity and heat using two CHP engines with an aggregated thermal input of 6.4 MW. The heat produced from the engines will be recovered and integrated into the process heating requirements, including the pasteurisation of waste as required by the Animal By-products regulations. The by-product from the process (digestate) will undergo a final screen to remove any foreign objects such as plastics before being transferred to digestate storage tanks, where it will be despatched off site as biofertiliser. The spreading of digestate on land is not included or authorised by this Environmental Permit.

The main releases to the environment are to air and water. The whole of the reception hall roof discharges to the rainwater harvesting system. The tank farm slab is divided into two and rainwater collected around the digestate storage tanks is diverted to rainwater drainage, whilst the floor around the process tanks (digesters, pasteuriser and waste buffer tank) drains to the 'dirty' sump and is returned to the reception hall sump for reprocessing. Surface water caught within the bunded area and tanker reception areas is collected within sumps and tested prior to controlled discharge to a tributary of the River Anker. If surface water is not suitable for discharge it will be pumped to a sump in the reception hall and subject to the treatment process.

Air emissions include point sources emissions from the CHP engines, the emergency flare, the odour control ventilation via a stack and tank pressure relief valves. All emissions have been assessed in line with our guidance and appropriate emissions limits inserted into the permit.

There are sixteen local wildlife sites, twelve Ancient Woodlands and one Site of Special Scientific Interest (SSSI) within 2 km of the installation. There is one Special Area of Conservation within 10 km of the

installation. Assessment by the Environment Agency shows that emissions from the activities undertaken at the installation are unlikely to have a significant impact on the habitats sites.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application EPR/ZP3936WZ/A001	Duly made 23/01/15	Application for an anaerobic digestion facility with combustion of biogas.
Additional information	11/02/15	Onsite fire management
Response to Schedule 5 Notice dated 28/01/2015	13/02/15	Clarification on surface water drainage, pre acceptance, odour management and abatement, accident management and process monitoring.
Response to Schedule 5 Notice dated 26/02/2015	06/03/15	Fire water bund calculations, puddle flange load on bund wall drainage pipe and process monitoring details.
Additional information response	18/03/14	Bund penetrating drainage pipe, back flow management.
Response to Schedule 5 Notice dated 11/03/2015	02/04/15	Digestate screening building and reception building odour abatement technology details. Revised odour management plan.
Permit determined Billing reference: ZP3936WZ	13/05/15	Permit issued to Biogen (UK) Limited

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/ZP3936WZ

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

Biogen (UK) Limited (“the operator”),

whose registered office is

**Milton Parc
Milton Ernest
Bedfordshire
MK44 1YU**

company registration number 05616520

to operate an installation at

**Merevale AD Plant
Merevale Lane
Baxterley
Atherstone
Warwickshire
CV9 2LA**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Thomas Ruffell	13/05/2015

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.4 The operator shall comply with the requirements of an approved competence scheme.

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).
- 2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 the activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.4 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2 and,
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and
 - (e) the waste code of the waste.
- 2.3.6 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Pre-operational conditions

- 2.4.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.3

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
 - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period

specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1 and S3.2;
- (b) process monitoring specified in table S3.3

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

3.6 Pests

3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

3.6.2 The operator shall:

- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution from pests;
- (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and

- (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production/treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must

immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

- 4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (a) any change in the operator's name or address; and
 - (b) any steps taken with a view to the dissolution of the operator.
- In any other case:
- (c) the death of any of the named operators (where the operator consists of more than one named individual);
 - (d) any change in the operator's name(s) or address(es); and
 - (e) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.
- 4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and
 - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types
A1	S5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non hazardous waste with a capacity exceeding 100 tonnes per day involving biological treatment.	R3: Recycling/reclamation of organic substances which are not used as solvents	<p>From receipt of waste through to digestion and recovery of by-products (digestate).</p> <p>Anaerobic digestion of waste in 2 tanks followed by burning of biogas produced from the process.</p> <p>Waste types suitable for acceptance are limited to those specified in Table S2.2.</p>
Directly Associated Activity			
A2	Storage of waste pending recovery or disposal	R13: Storage of waste pending the operations numbered R1 and R3 (excluding temporary storage, pending collection, on the site where it is produced)	<p>From the receipt of waste to despatch for anaerobic digestion or despatch off site for recovery and/or disposal.</p> <p>Storage of waste in an enclosed building fitted with appropriate odour abatement and on an impermeable surface with sealed drainage.</p> <p>Waste types suitable for acceptance are limited to those specified in Table S2.2.</p>
A3	Physical treatment for the purpose of recycling	R3: Recycling/reclamation of organic substances which are not used as solvents	<p>From the receipt of waste to despatch for anaerobic digestion or despatch off site for recovery.</p> <p>Pre-treatment of waste in enclosed building and on impermeable surface with sealed drainage system including shredding, sorting, screening, compaction, baling, mixing and maceration.</p> <p>Post-treatment of digestate in an enclosed building and on an impermeable surface</p>

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types
			<p>with sealed drainage system, including screening to remove contraries, centrifuge or pressing and addition of thickening agents (polymers) or drying.</p> <p>Heat treatment (pasteurisation) of waste in a tank for the purpose of recovery.</p> <p>Gas cleaning by biological or chemical scrubbing.</p> <p>Waste types suitable for acceptance are limited to those specified in Table S2.2.</p>
A4	Steam and electrical power supply	R1:Use principally as a fuel to generate energy	<p>From the receipt of biogas produced at the on-site anaerobic digestion process to combustion with the release of combustion gases.</p> <p>Combustion of biogas in two combined heat and power (CHP) engine(s) with an aggregated thermal input of 6.4 MW.</p>
A5	Emergency flare operation	D10: Incineration on land	<p>From the receipt of biogas produced at the on-site anaerobic digestion process to incineration with the release of combustion gases.</p> <p>Use of an auxiliary flare required only during periods of breakdown or maintenance of the CHP engines.</p>
A6	Raw material storage	Storage of raw materials including lubrication oil, antifreeze, ferric chloride, activated carbon, diesel.	From the receipt of raw materials to despatch for use within the facility.
A7	Gas storage	Storage of biogas produced from on-site anaerobic digestion of permitted waste within the inner gas tight membrane in a purpose built gas holder	From the receipt of biogas produced at the on-site anaerobic digestion process to despatch for use within the facility.

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types
A8	Digestate storage	Storage of whole digestate in 2 storage tanks.	From the receipt of digestate produced from the on-site anaerobic digestion process to despatch for use off-site.
A9	Surface water collection and storage	Collection and storage of uncontaminated roof and site surface water in a storage tank.	From the collection of uncontaminated roof and site surface water from non operational areas only to re-use within the facility or discharge off-site.
A10	Diesel back-up generator (Thermal input 20.5kW approx.)	To power critical equipment in the event of power failure.	From the receipt of fuel to use in generator.

Description	Parts	Date Received
Application	Response to section 3a – Technical Standards, Part B3 of the application form. Best available techniques as described in B43a - Technical Standard & Techniques for Pollution Control	23/01/2015
Application	Section 3B, Table 3b – General Requirements, Part B3 of the application form <ul style="list-style-type: none"> • Fugitive Emissions Management Plan reference B43b(A) • Noise Management Plan reference B43b(c) Section 4a of the application form <ul style="list-style-type: none"> • Emissions Monitoring plan reference B44a Section 4b of the application form <ul style="list-style-type: none"> • Point Source Emissions to Air Section 6d of the application form <ul style="list-style-type: none"> • Raw materials usage and energy efficiency reference B45 	23/01/2015
Additional information response	Fire management clarification.	11/02/2015
Response to Schedule 5 Notice dated 28/01/2015	Responses to questions 1,2,3,4,5,6,8,9,10,11,12,13,15,16.	13/02/2015
Response to Schedule 5 Notice dated 26/02/2015	Fire water bund calculations. Details of load on bund wall drainage pipe puddle flange. Process monitoring details. Confirmation of odour abatement technology for reception hall.	06/03/2015

Table S1.2 Operating techniques		
Description	Parts	Date Received
Additional information response	Bund penetrating drainage pipe, back flow management.	18/03/2014
Response to Schedule 5 Notice dated 11/03/2015	Digestate screening building and reception building odour abatement technology details. Revised odour management plan.	02/04/2015
Additional information response	Diesel backup generator thermal input	07/04/2015

Table S1.3 Pre-operational measures	
Reference	Pre-operational measures
POC1	<p>At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning, the operator shall ensure that a review of the design, method of construction and integrity of the proposed site secondary containment is carried out by a qualified structural engineer. The review shall compare the constructed secondary containment against the standards set out in Section 2.2.5 of Sector Guidance Note IPPC S5.06 - Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste and CIRIA C736 - Containment Systems for the Prevention of Pollution - secondary, tertiary and other measures for industrial and commercial premises or other relevant industry standard.</p> <p>The review shall include:</p> <ul style="list-style-type: none"> - physical condition of the secondary containment; - the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure; - any work required to ensure compliance with the standards set out in CIRIA C736 or other relevant industry standard; and - a preventative maintenance and inspection regime. <p>A written report of the review shall be submitted to the Environment Agency detailing the review's findings and recommendations. Remedial action shall be taken to ensure that the secondary containment meets the standards set out in the guidance documents and implement the maintenance and inspection regime. No site operations shall commence or waste accepted at the facility unless the Environment Agency has given prior written permission under this condition.</p>
POC2	<p>At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of the installation, the operator shall provide a written commissioning plan, including timescales for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.</p>

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
-	-

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	Annual throughput shall not exceed 45,000 tonnes.
Exclusions	Wastes having any of the following characteristics shall not be accepted: - consisting solely or mainly of dusts (except sawdust), powders, or loose fibres - wastes containing treated wood, wood-preserving agents or other biocides, persistent organic pollutants, Japanese Knotweed
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 – food processing waste, food washing waste
02 01 02	animal-tissue waste including blood, animal flesh, fish processing waste, fish carcasses, poultry waste
02 01 03	plant-tissue waste including husks, cereal dust, waste animal feeds, off-cuts from vegetable and fruit and other vegetation waste
02 01 06	animal faeces, urine and manure including spoiled straw
02 01 07	wastes from forestry
02 01 99	residues from commercial mushroom cultivation
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, process water, food washing waste
02 02 02	animal-tissue waste including blood, animal flesh, fish processing waste, fish carcasses, poultry waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 02 99	sludges from gelatine production, animal gut contents
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
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 03 99	sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only
02 04	wastes from sugar processing

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	Annual throughput shall not exceed 45,000 tonnes.
Exclusions	Wastes having any of the following characteristics shall not be accepted: - consisting solely or mainly of dusts (except sawdust), powders, or loose fibres - wastes containing treated wood, wood-preserving agents or other biocides, persistent organic pollutants, Japanese Knotweed
Waste code	Description
02 04 03	sludges from on-site effluent treatment
02 04 99	other wastes
02 05	wastes from the dairy products industry
02 05 01	materials unsuitable for consumption or processing including solid and liquid dairy products, milk, food processing wastes, yoghurt, whey
02 05 02	sludges from on-site effluent treatment
02 06	wastes from the baking and confectionery industry
02 06 01	materials unsuitable for consumption or processing including condemned food, food processing wastes, biscuits, chocolate, yeast, bread, bakery wastes
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 including brewing waste, food processing waste, fermentation waste
02 07 02	wastes from spirits distillation including spent grains, fruit and potato pulp, sludge from distilleries
02 07 04	materials unsuitable for consumption or processing including brewing waste, food processing waste, fermentation waste, beer, alcoholic drinks, fruit juice
02 07 99	spent grains, hops and whisky filter sheets/cloths, yeast and yeast-like residues, sludge from production process
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard
03 01	wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	wastes from pulp, paper and cardboard production and processing
03 03 10	fibre rejects and sludges i.e. paper pulp (de-inked only), paper fibre
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04	Wastes from the leather, fur and textile industries
04 01	wastes from the leather and fur industry
04 01 01	fleshings and lime split wastes
04 02	wastes from the textile industry
04 02 10	organic matter from natural products, e.g. grease, wax
15	Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
15 01	packaging (including separately collected municipal packaging waste)
15 01 01	paper and cardboard packaging – not allowed if any non biodegradable coating or preserving substance is present

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	Annual throughput shall not exceed 45,000 tonnes.
Exclusions	Wastes having any of the following characteristics shall not be accepted: - consisting solely or mainly of dusts (except sawdust), powders, or loose fibres - wastes containing treated wood, wood-preserving agents or other biocides, persistent organic pollutants, Japanese Knotweed
Waste code	Description
15 01 03	Untreated wooden packaging – not allowed if any non biodegradable coating or preserving substance is present
15 01 05	composite packaging – must conform to BS EN 13432 and not allowed if any non biodegradable coating or preserving substance is present
16	Wastes not otherwise specified in the list
16 10	aqueous liquid wastes destined for off-site treatment
16 10 02	liquor/leachate from a composting process that accepts waste input types allowed by the Anaerobic Digestate Quality Protocol.
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use
19 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	waste types listed in this table, Table S2.2, that have been mixed together only
19 02 06	sludge types from waste listed in this table, Table S2.2, that have been heat treated only
19 02 10	glycerol not designated as hazardous i.e. excludes EWC code 19 02 08
19 05	wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 06	wastes from anaerobic treatment of waste
19 06 03	liquor from anaerobic treatment of municipal waste (from a process that treats wastes which are listed in this table only)
19 06 04	digestate from anaerobic treatment of source segregated biodegradable waste (from a process that treats wastes which are listed in this table only)
19 06 05	liquor from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 08	wastes from waste water treatment plants not otherwise specified
19 08 09	grease and oil mixture containing edible oils and fats
19 08 12	sludges from industrial biological treatment
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 12	waste types listed in this table, Table S2.2, that have been subjected to mechanical treatment only
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
20 01	separately collected fractions (except 15 01)

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	Annual throughput shall not exceed 45,000 tonnes.
Exclusions	Wastes having any of the following characteristics shall not be accepted: - consisting solely or mainly of dusts (except sawdust), powders, or loose fibres - wastes containing treated wood, wood-preserving agents or other biocides, persistent organic pollutants, Japanese Knotweed
Waste code	Description
20 01 01	paper and cardboard – not allowed if any non biodegradable coating or preserving substance is present. Excludes laminates such as Tetrapaks.
20 01 08	kitchen and canteen waste
20 01 25	edible oil and fat
20 01 38	untreated wood where no non biodegradable coating or preserving substance is present
20 02	garden and park wastes (including cemetery waste)
20 02 01	biodegradable waste
20 03	other municipal wastes
20 03 01	mixed municipal waste – separately collected biowastes
20 03 02	waste from markets – allowed only if source segregated biodegradable fractions e.g. plant material, fruit and vegetables

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 as shown on site plan in Schedule 7	CHP engine 1 (J420) 3.526 MWth approximately [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	350 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A2 as shown on site plan in Schedule 7	CHP engine 2 (J416) 2.848MWth approximately [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	350 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A3 as shown on site plan in Schedule 7	Emergency flare [note 2]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Hourly average	[note 3]	BS EN 14792
		Carbon monoxide	50 mg/m ³			BS EN 15058
		Total VOCs	10 mg/m ³			BS EN 12619:2013
Odour control stack as shown on site plan in Schedule 7	Odour abatement	No parameter set	No Limit set	--	--	--
Pressure relief valves PRV1, PRV2, PRV3, PRV4, PRV5, as shown on site plan in Schedule 7	Digesters and storage tank pressure relief	No parameter set	No limit set	--	Record of operating hours	--

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
<p>Note 1 - These limits are based on normal operating conditions and load - temperature 0°C (273K); pressure: 101.3 kPa and oxygen: 5 per cent (dry gas). The measurement uncertainty specified in LFTGN08 v2 2010 shall apply.</p> <p>Note 2 - These limits are based on normal operating conditions and load - temperature 0°C (273K); pressure: 101.3 kPa and oxygen: 3 per cent (dry gas). The measurement uncertainty specified in LFTGN05 v2 2010 shall apply.</p> <p>Note 3 - Monitoring to be undertaken 12 months after commissioning of the emergency flare. Following commissioning, monitoring to be undertaken in the event the emergency flare has been operational for more than 10 per cent of a year (876 hours). Record of operating hours to be submitted annually to the Environment Agency.</p>						

Table S3.2 Point source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 7 emission to tributary of River Anker	Uncontaminated site surface water from roofs and non operational areas	No parameter set	No limit set	--	Weekly	Visual assessment – no visible oil or grease

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Biogas from Digesters	Flow	Continuous	In accordance with EU weights and measures Regulations	--
Biogas from Digesters	Methane	None specified	--	Gas monitors to be calibrated every 6 months to manufacturer's recommendations
	Hydrogen sulphide	Continuous	None specified	
Waste reception building; Digesters and storage tanks	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary
Digester and storage tanks	Integrity checks	Weekly	Visual assessment	--

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Reception hall and screening building Odour abatement systems.	Parameters as described in application EPR/ZP3936WZ/A001	As proposed in application EPR/ZP3936WZ/A001	--	Odour abatement system shall be regularly checked and maintained to ensure appropriate control in accordance with the manufacturer's recommendations
Gas Holder	Pressure	Continuous	--	--
Representative sample of each digesters contents	Temperature, pH, dry matter (DM), organic dry matter (ODM), VFA	As described in Application	As described in Application	--

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3	Every 12 months	1 January

Table S4.2 Annual production/treatment	
Parameter	Units
Electricity generated	MWh
Whole digestate	tonnes

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Water usage	Annually	tonnes or m ³
Energy usage	Annually	MWh
Raw material usage	Annually	tonnes or m ³
Emergency flare operation	Annually	hours
Electricity exported	Annually	MWh
CHP engine usage	Annually	hours
CHP engine efficiency	Annually	%

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	13/05/2015
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	13/05/2015
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	13/05/2015
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	13/05/2015
Waste returns	E-waste Return Form	--

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“ADQP” means Anaerobic Digestion Quality Protocol

“anaerobic digestion” means a process of controlled decomposition of biodegradable materials under managed conditions where free oxygen is absent, at temperatures suitable for naturally occurring mesophilic or thermophilic anaerobes and facultative anaerobe bacteria species, which convert the inputs to a methane-rich biogas and whole digestate.

“animal waste” means any waste consisting of animal matter that has not been processed into food for human consumption.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“building” means a construction that has the objective of providing sheltering cover and minimising emissions of noise, particulate matter, odour and litter.

“digestate” means material resulting from an anaerobic digestion process.

“disposal”. Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“impermeable surface” means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“Industry Standard Protocol” means “A standardised protocol for the monitoring of bioaerosols at open composting facilities” published by the Association for Organics Recycling and developed in conjunction with the Environment Agency.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“pests” means Birds, Vermin and Insects.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“sealed drainage system” in relation to an impermeable surface, means a drainage system with impermeable components which does not leak and which will ensure that:

- no liquids will run off the surface otherwise than via the system
- all liquids entering the system are collected in a sealed sump, except where liquids may be lawfully discharged to foul sewer.

“treated wood” means any wood that has been chemically treated (e.g. to enhance or alter the performance of the original wood). Treatments may include penetrating oils, tar oil preservatives, water-borne preservatives, organic-based preservatives, boron and organo-metallic based preservatives, boron and halogenated flame retardants and surface treatments (including paint and venner).

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste.

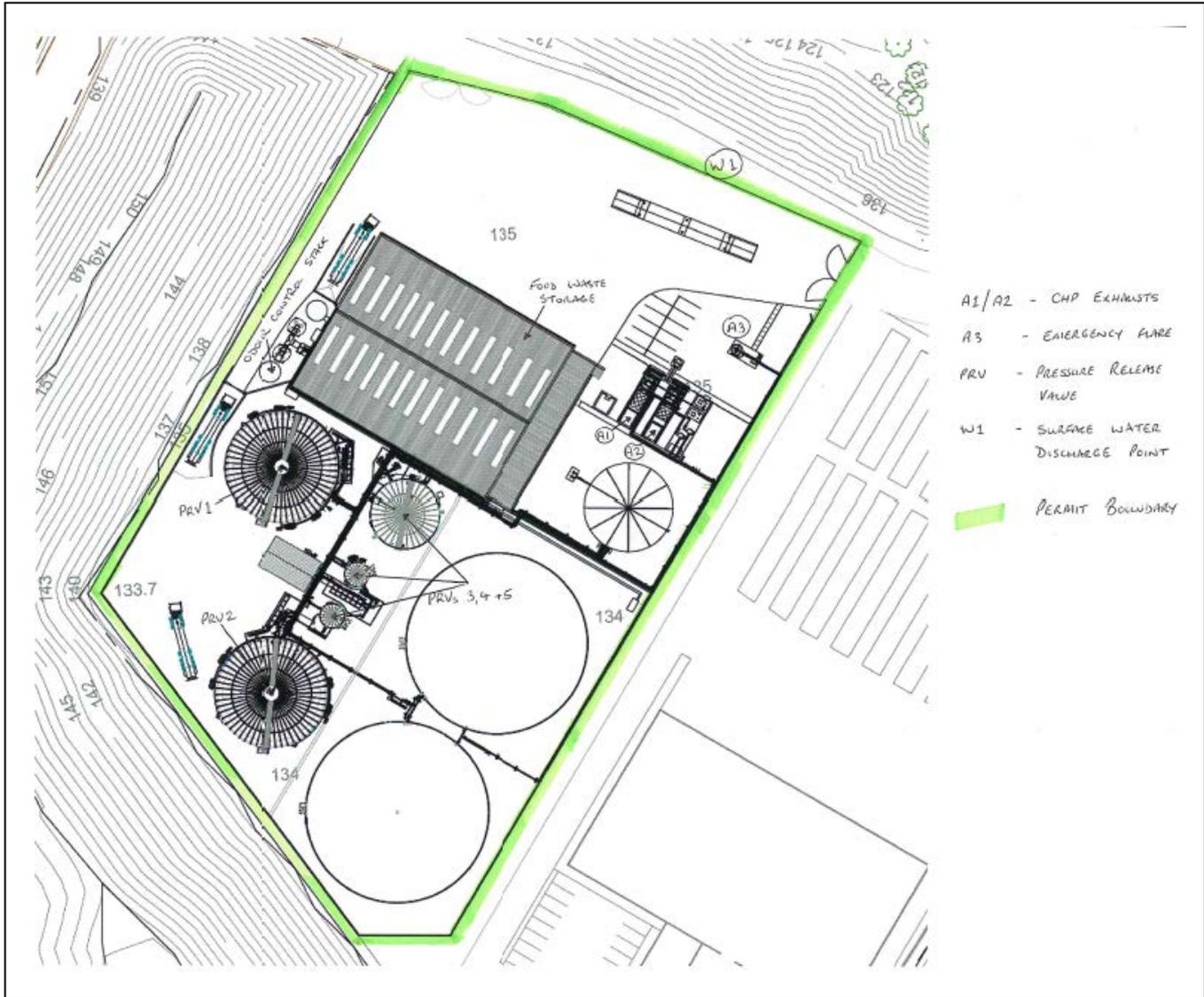
“year” means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid fuels, 3% or 5% for gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

Schedule 7 – Site plan



END OF PERMIT

Permit Number: **EPR/ZP3936WZ** **Operator:** **Biogen (UK) Limited**

Facility: **Merevale AD Plant** **Form Number:** **Air1 / 13/05/2015**

Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	1 hour period		BS EN 14792		
A1	Sulphur dioxide	350 mg/m ³	1 hour period		BS EN 14791		
A1	Carbon monoxide	1400 mg/m ³	1 hour period		BS EN 15058		
A1	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		
A2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	1 hour period		BS EN 14792		
A2	Sulphur dioxide	350 mg/m ³	1 hour period		BS EN 14791		
A2	Carbon monoxide	50 mg/m ³	1 hour period		BS EN 15058		
A2	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
A3	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	1 hour period		BS EN 14792		
A3	Carbon monoxide	50 mg/m ³	1 hour period		BS EN 15058		
A3	Total VOCs	10 mg/m ³	1 hour period		BS EN 12619:2013		

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: EPR/ZP3936WZ

Operator: Biogen (UK) Limited

Facility: Merevale AD Plant

Form Number: WaterUsage1 / 13/05/2015

Reporting of Water Usage for the year

Water Source	Usage (m³/year)	Specific Usage (m³/unit output)
Mains water		
Site borehole		
River abstraction		
TOTAL WATER USAGE		

Operator's comments:

Signed

Date.....

(authorised to sign as representative of Operator)

Permit Number: **EPR/ZP3936WZ** **Operator:** **Biogen (UK) Limited**
Facility: **Merevale AD Plant** **Form Number:** **Energy1 / 13/05/2015**

Reporting of Energy Usage for the year

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh		
Natural Gas	MWh		
Gas Oil	tonnes		
Recovered Fuel Oil	tonnes		
Biogas	tonnes		
TOTAL	-		

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: EPR/ZP3936WZ Operator: Biogen (UK) Limited

Facility: Merevale AD Plant Form Number: Performance1 / 13/05/2015

Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY

Parameter	Units
Total raw material used	tonnes
CHP engine usage	hours
CHP engine efficiency	%
Emergency flare operation	hours
Electricity exported	MWh

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)