

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Wessex Water Services Limited

Avonmouth Bioresources Centre
Kings Weston Lane
Bristol
BS11 0YS

Variation application numbers

EPR/PP3734LK/V014 and C015

Consolidated permit number

EPR/PP3734LK

Avonmouth Bioresources Centre

Permit number EPR/PP3734LK

Introductory note

This introductory note does not form a part of the permit

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Changes introduced by this variation notice/statutory review

The Industrial Emissions Directive (IED) came into force on 7 January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) Conclusions as described in the Commission Implementing Decision. The schedule of waste management activities includes the recovery 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 biological treatment, but excludes activities covered by the Urban Waste Water Treatment Regulations (UWWTR). However, UK environmental regulators concluded that the biological treatment of waste sewage sludge is not an activity covered by the UWWTR and is therefore within the scope of the IED. The BAT Conclusions for Waste Treatment (the BREF) was published on 17 August 2018 following a European Union wide review of BAT, implementing decision (EU) 2018/1147 of 10 August 2018. BAT applies to new waste sewage sludge treatment not covered by the UWWTR. The operations relating to the anaerobic digestion of sewage sludge (AR1) at Avonmouth Bioresources Centre are existing but will be brought into environmental regulation for the first time and are required to operate using BAT.

The previously permitted food waste Anaerobic Digestion (AD) operation at Avonmouth Bioresources Centre (AR3) is also subject to a permit review under Article 21(3) of the IED which requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions.

The scope of the permit review relating to the food waste AD covers the assessment of:

- the bioaerosols monitoring and compliance with M9 bioaerosols monitoring requirements;
- the design and construction of secondary containment;
- the emissions to water, and control of diffuse emissions to air;
- the available storage facilities and measures to reduce ammonia emissions from storage; and
- information on existing medium combustion plant and/or specified generators on site.

This variation has been issued to update some of the conditions following a statutory review of the permits in the industry sector for biowaste treatment. The opportunity has also been taken to consolidate the original permit and subsequent variations.

The following notice gives notice of the variation of multi regime environmental permit EPR/PP3734LK and EPR/UP3797EA referred to in the status logs below and the replacement of those permits with a consolidated environmental permit.

EPR/PP3734LK was previously issued as a bespoke installations permit comprising of a Section 5.5 Part A(1)(a) activity to make solid fuel (other than charcoal) from waste by any process involving the use of heat and a Section 5.4 Part A(1)(b)(i) activity for a food waste AD facility. EPR/UP3797EA was previously issued as a non-hazardous sludge biological chemical and physical treatment site under a standard rules SR2008

No19 permit. The operations under EPR/UP3797EA for the acceptance of sludge for biological treatment shall become part of the directly associated activities (DAAs) to the Section 5.4 Part A (1)(b)(i) scheduled activity for the sewage sludge AD. This variation also includes an increase to the site boundary to accommodate the assets associated with the sludge AD operation as well as the addition of waste operations for the dewatering of raw sludge undertaken when the sludge AD operation is inactive, and the addition of a food soup mixing and pasteurisation treatment activity undertaken when the food waste AD operation is inactive.

Brief description of the process

Avonmouth Bioresources Centre (BC) is located approximately 1.5km southeast of the Severn Estuary and 2km northeast of the Bristol suburb of Avonmouth. It is centred on National Grid Reference ST 53350 79390. The site is surrounded on the north boundary by an industrial estate, on the west boundary by the Local Wildlife Site (LWS) Avonmouth Sewage Works and Hoar Gout. The Mere Bank Rhine water course runs along the southern edge which includes the scheduled monument (The Mere Bank and flanking Ditches) and the M4 motorway runs parallel with the eastern boundary of the site. The facility is located within the curtilage of the wider Avonmouth Water Recycling Centre (WRC) operated under the UWWTR. The WRC does not form part of the installation.

There are two Special Area of Conservation (SAC), one Special Protection Area (SPA) and one RAMSAR within 10km. There is one Site of Specific Scientific Interest (SSSI) and there are a number of LWSs and Ancient Woodlands (AWs) within 2km of the facility.

Sludge AD activity (activity AR1 in Table S1.1)

Indigenous primary sludge is introduced into the strain press feed via the internal pumping station from the wider WRC (originating from the primary sedimentation tanks that do not form part of this permit). From there the sludge passes through three primary sludge strain presses before arriving in the strained sludge sump where it is mixed with imported raw sludge.

Tankered imported raw sludge from satellite sites is received in the import reception tank before being passed through two import strain presses where rag and screenings are removed, collected in skips and sent for export off site. From here the imported sludge is transferred into the strained sludge sump where it is mixed with the indigenous primary sludge.

Strained sludges from the strained sludge sump which also acts as an internal pumping station is moved through either the Bellmer Gravity Belt Thickener (GBT) route or the Acid Phase Digestion (APD) GBT route. For the Bellmer route the sludge is passed into one of two consolidation tanks before transfer into the Bellmer feed tank. From there it is fed into one of two Bellmer GBTs where polymer is added to aid thickening. After this the thickened sludge is fed into the thickened Bellmer tank prior to introduction into the APD feed tank. Alternatively, sludges from the strained sludge sump are passed through one of three APD GBTs via the APD GBT feed tank where polymer is also added to aid thickening. The sludges are then pumped into the APD feed tank.

Indigenous Secondary Activated Sludge (SAS) is introduced into one of three SAS Sequencing Batch Reactors (SBR) GBTs from the pre-thickened SAS transfer tank (i.e. the SAS balance tank) in the wider WRC (these assets are associated with the SBRs that do not form part of this permit). Polymer is added to the sludge to aid thickening process in the SAS SBR GBTs before it is passed on to the APD feed tank via the thickened SAS transfer tank.

Thickening liquors from all GBTs (SAS SBR, GBTs, APD GBTs and Bellmer GBTs) are collected and returned to the wider WRC via the site foul drainage and the liquor sump internal pumping station. The effluent is monitored at sampling points S1 and S2 prior to discharge into the WRC.

From the APD feed tank all screened and thickened sludges both indigenous and imported are introduced into the first APD (vessel 1) where it is heated via a hot water/sludge heat exchanger. The sludge is then batch transferred through a series of five additional APDs (vessels 2-6) to complete the acid phase of digestion for an overall approximate retention time of 2-3 days. After the APDs, the sludge is then pumped into one of eight Mesophilic Anaerobic Digesters (MADs) taking either a route through MAD 1 vessels 5-10 (P1-6 in the process flow) or MAD 2 vessels 2 and 4 (P7-8 in the process flow) for with an overall hydraulic

retention time of approximately 11-12 days. The treatment of sludge in a biological AD process is a Section 5.4 Part A (1)(b)(i) scheduled activity of the Environmental Permitting (England and Wales) Regulations 2016 (EPR).

Heat used for the APDs and MADs is generated from either the onsite 4MWth natural gas fuelled boiler (emission point A18) or the five 3.636MWth Combined Heat and Power engines (CHPs) fuelled on biogas (emission points A25-29). Biogas produced as part of the AD process is captured in the APDs and MADs roof space and transferred via pipework into the two gas holders for storage. From the gas holders the biogas is transferred through a dehumidifier chiller system prior to introduction into the five previously mentioned CHPs for combustion. A waste gas burner emergency flare (emission point A19) can be utilised to burn excess gas during periods of shut down, maintenance or in emergencies. Alternatively, the biogas can be transferred from the gas holders via the pretreatment plant chiller into the biogas upgrading plant which comprises of an absorption column, flash column, desorption column, biofilter and GAC odour control unit (emission point A24), biomethane waste gas burner (emission point A22), carbon filters and grid entry unit and propane tank. Condensate from biogas storage is pumped to the WRC via emission point T1 which is monitored and sampled at points S1 (G2G condensate) and S4 (condensate from rest of gas infrastructure). A 0.9MWth emergency standby generator (emission point A60) fuelled on diesel is also operated less than 50 hours per year for testing and emergency purposes only.

Digested sludge is then gravity fed from the MADs into one of two Secondary Sludge Storage Tanks (SSSTs) where it remains for an average retention time of 2 days if both tanks are used, and one day if only one tank is used. From the SSSTs the digested sludges are then transferred through two potential dewatering routes. The first route is directly through one of two road centrifuges where polymer is added to aid the dewatering process before the resultant cake is transferred into the digested trailers. The second route is that digested sludges are introduced into the centrifuge feed tank before being fed into one of four centrifuges where polymer is added to aid the dewatering process before eventually being transferred into digested trailers. It is from the digested trailers where the digested sludge cake is removed from the permit boundary for onwards recovery and land spreading in accordance with the Sludge (Use in Agriculture) Regulations 1989. Cake storage is limited to the digested trailers and are removed from permit boundary typically within 24 hours.

Dewatering centrate from all six centrifuges is collected and returned to the wider WRC via the liquor sump internal pumping station. The dewatering centrate liquors are monitored at sampling point S1 prior to discharge into the WRC at transfer point T1.

Food waste AD activity (activity AR3 in Table S1.1)

Source-segregated food waste is received from skip deliveries in solid form into the food waste reception hall. The maximum capacity of the reception hall is limited to one days' worth of deliveries which is quantified as 250 tonnes. The food waste reception hall is served by an air abatement system which extracts the foul air and channels the emission via an odour control unit (emission A30).

Delivered food waste is fed into a fixed shredder to remove any packaging or bulk contamination. From here the de-packaged solid waste is introduced into one of two turbo-dissolver batch tanks where it is liquified using water. Shredded packaging and bulk contamination are transferred from the shredder to the hammermill to separate out any residual organic material. The resultant waste packaging is loaded into the plastics and packaging skip where it awaits removal for off-site recovery.

The pulped organic material is transferred from the hammermill into the buffer feed tank sump. The liquified food slurry is transferred from the turbo-dissolver batch tanks and passed through a rotatory drum screen to remove contaminants larger than 10mm in particle size before it is introduced via gravity flow into the buffer feed tank sump where it is combined with the pulped organic material from the hammermill. Any oversized materials captured in the rotatory drum screen are transferred to the hammermill for further organic recovery.

From the buffer tank feed sump, screened food slurry is then pumped from the food waste reception hall building into an external hydrolysis buffer tank where it undergoes hydrolysis with an average retention time of between 1 and 4 days. Off-gas extracted from the hydrolysis buffer tank is transported via pipeline to the air abatement system serving the food waste reception hall (emission A30). From here the hydrolysed food slurry is batch fed into one of three pasteuriser vessels where the food slurry reaches temperatures of 70°C

maintained for one hour to ensure pathogen kill as required by the Animal Plant Health Agency regulations for Animal By-Product Category 3 material. The pasteurised food slurry is then cooled down via a heat recovery heat exchanger to temperatures of between 45 and 55°C before being introduced into one of two mesophilic anaerobic digesters. Within the mesophilic digesters the food slurry undergoes anaerobic digestion for a retention time of between 18 and 30 days with a temperature maintained at 37°C. The treatment of food waste in a biological AD process is a Section 5.4 Part A (1)(b)(i) scheduled activity of the Environmental Permitting (England and Wales) Regulations 2016 (EPR).

The gas infrastructure assets mentioned previously as part of the sludge AD assets (AR1) are also shared with the food waste AD activity. Heat used for the pasteuriser vessels, heat exchanger and mesophilic digesters is generated from either the 4MWth natural gas fuelled boiler (emission point A18) or the five 3.636MWth Combined Heat and Power engines (CHPs) fuelled on biogas (emission points A25-29). Biogas produced as part of the AD process is captured in the mesophilic digesters roof space and transferred via pipework to two gas holders for storage. From the gas holders the biogas is transferred through a dehumidifier chiller system prior to introduction into the five previously mentioned CHPs for combustion. A waste gas burner emergency flare (emission point A19) can be utilised to burn excess gas during periods of shut down, maintenance or in emergencies. Alternatively, the biogas can be transferred from the gas holders via the pretreatment plant chiller into the biogas upgrading plant which comprises of an absorption column, flash column, desorption column, biofilter and GAC odour control unit (emission point A24), biomethane waste gas burner (emission point A22), carbon filters and grid entry unit and propane tank. Condensate from biogas storage is pumped to the WRC via emission points T1 which are monitored at sampling points S1 (G2G condensate) and S4 (condensate from rest of gas infrastructure). A 0.9MWth emergency standby generator (emission point A60) fuelled on diesel is also operated less than 50 hours per year for testing and emergency purposes only.

Digested slurry from the mesophilic digesters overflows into a side chamber (limpet box) and is then pumped onwards via two strain presses and their respective strain press buffer tanks into the Post Digestion Storage Tank (PDST). Remaining contaminants such as glass, eggshell or other large organic fibres are separated out in the strain presses and transferred into the screenings skip for off site recovery to ensure adherence with Anaerobic Digestion Quality Protocol (ADPQ) PAS 110 standard. Digested slurry is stored within the PDST for a retention time of 3-4 days facilitating aeration to impede biogas production, methane emissions and to stabilise the digestate so it can be mixed in its liquid form.

Finally, the aerated digestate is then pumped back into the food waste reception hall building where it is introduced into one of two decanter centrifuges where a polyelectrolyte solution is added to aid the separation of solid matter from the liquid fraction. The liquid centrate is returned to the WRC in the most part via emission point T1 monitored at sampling point S5. In some cases, a small volume of centrate is pumped back to the turbo dissolver tanks for recirculation into the process. The solid fibres are transferred from the centrifuges into one of two cake skips, one for solid fibres that will be certified as PAS 110 standard and achieve the requirements of the digestate resource framework to undergo recycling on farm land to aid crop growth and the other for solid fibres that do not achieve PAS 110 standard that are removed for use in land reclamation under a permit to do so. It should also be noted that the solid fibres that do not achieve PAS 110 standard would still be classified as a waste.

The food waste AD activity (AR3) currently authorised by this permit is mothballed as notified by the operator on the 14/05/2026. Operations can only recommence once written agreement has been provided by the Environment Agency that the permitted activity is in accordance with the requirements of the Waste Treatment BAT conclusions and biological waste treatment and transfer: appropriate measures for permitted sites and other appropriate measures guidance as applicable, and therefore pre-operational condition PO2 as specified in table S1.4 is applicable.

Production of fuel pellets activity (activity AR2 in Table S1.1)

The existing activity which takes digestate from anaerobic treatment of animal and vegetable waste and sludges from treatment of urban waste water uses recovered heat as steam in a belt dryer to produce dry sludge pellets which includes the periodic operation of a standby drum dryer. Channelled emissions to air from the fuel pellet operation include a belt dryer stack (emission point A54), drum dryer stack (emission point A55), pellet silo dust filters (emission points A56 and A57) and a pellet bagging plant dust filter

(emission point A58). The production of fuel pellets is classified as making solid fuel (other than charcoal) from waste by any process involving the use of heat and is therefore a Section 5.5 Part A(1) (a) scheduled activity of the Environmental Permitting (England and Wales) Regulations 2016 (EPR).

The fuel pellet production activity (AR2) currently authorised by this permit is mothballed as notified by the operator on the 10/03/2026. Operations can only recommence once written agreement has been provided by the Environment Agency that the permitted activity is in accordance with the requirements of the Waste Treatment BAT conclusions and biological waste treatment and transfer: appropriate measures for permitted sites and other appropriate measures guidance as applicable, and therefore pre-operational condition PO1 as specified in table S1.4 is applicable.

Sludge dewatering waste operation (activity AR14 in Table S1.1)

Tankered imported raw sludge from satellite sites is received in the import reception tank before being passed through two import strain presses where rag and screenings are removed, collected in skips and sent for export off site. From here the imported sludge is transferred into the strained sludge sump. From the strained sludge sump the imported screened sludge can take several separate routes (either directly to or via the two consolidation tanks or Bellmer feed tank) to the flotweg centrifuge, the two road centrifuges or the four centrifuges via the centrifuge feed tank. All centrifuges have a polymer dosing system to aid the dewatering process. Centrate from the centrifuges are channelled and monitored via sampling point S1 prior to discharge to the WRC following the same route as described in the Sludge AD operation above.

Resultant dewatered raw sludge is transferred into the raw trailers for removal from the permit boundary for further treatment and recovery typically within 24 hours. Raw sludge is never mixed or blended with digested sludges in accordance with waste segregation policy. Assets that are used for the treatment of raw sludge that are normally used to treat digested sludge are fully drained down and washed out between batches to ensure no cross contamination between digested and raw sludges.

Food soup waste operation (activity AR15 in Table S1.1)

Source segregated imported food waste is delivered by skips into the food waste reception hall where it is subject to the same pre-treatment processes and assets as the food waste AD including shredding, dilution through the turbo dissolvers, screening to remove packaging and pulp separation of remaining organic material in the hammermill. The food slurry is then pumped into the hydrolysis buffer tank via the buffer feed tank for storage. From here the food slurry can either be exported directly via tanker at loading point A in the food waste reception hall building for onward recovery or it can be forwarded into one of three pasteurisers to satisfy the APHA regulations for animal by-products category 3 classification of material and undergo pasteurisation at 70°C for one hour before export off site for recovery via tanker at loading point B (also within the food waste reception hall building). Food liquors are monitored and directed back to the WRC via the same sampling point and transfer point specified in the food waste AD operation above.

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

Status log of permit A: EPR/PP3734LK		
Description	Date	Comments
Application received PP3734LK Duly made	Duly made 30/03/2006	Application for the combustion of fuel (biogas and natural gas) for the purpose of the generation of electricity and heat.
Additional information received	09/06/2006 28/06/2006 03/07/2006 13/07/2006 28/09/2006 24/10/2006 02/11/2006	
Permit determined PP3734LK	19/12/2006	Permit issued to Wessex Water Services Limited.

Status log of permit A: EPR/PP3734LK		
Description	Date	Comments
Variation application PP3734LK	Duly made 01/11/2007	Application to vary the permit for the additional digester capacity.
Additional information received	06/11/2007	Installation boundary plan.
Variation determined EPR/PP3734LK	23/11/2007	Varied permit issued.
Variation application EPR/PP3734LK/V004	Duly made 07/03/2009	Application to vary the permit to add new activity relating to the manufacture of fuel pellets.
Variation determined EPR/PP3734LK/V004	16/02/2010	Varied permit issued.
Variation application EPR/PP3734LK/V005	Duly made 20/12/2010	Application to vary the permit to add a new food waste treatment plant.
Additional information received	15/02/2011 21/02/2011 04/03/2011	
Variation determined EPR/PP3734LK/V005	18/03/2011	Varied permit issued.
Variation application EPR/PP3734LK/V006	Duly made 27/11/2012	
Variation determined EPR/PP3734LK/V006	21/01/2013	Varied permit issued.
Variation application EPR/PP3734LK/V007	Duly made 21/03/2013	Application to vary the permit for the reception of incoming waste into the post digestate storage tank.
Variation determined EPR/PP3734LK/V007	09/04/2013	Varied permit issued.
Agency initiated variation determined EPR/PP3734LK/V008	21/02/2014	Agency variation to implement the changes introduced by the Industrial Emissions Directive (IED).
Variation application EPR/PP3734LK/V009 (Billing ref TP3332VH)	Duly made 02/06/2014	Application to vary the permit to add a biomethane upgrade plant (BUP), to consolidate the permit and update the permit to modern conditions.
Variation determined EPR/PP3734LK/V009	20/08/2014	Varied and consolidated permit issued in modern condition format.
Application EPR/PP3734LK/V010 (variation and consolidation)	Duly made 18/03/2016	Application to vary and update the permit to modern conditions.
Variation determined EPR/PP3734LK	07/06/2016	Varied and consolidated permit issued in modern condition format.
Application EPR/PP3734LK/V011	Returned 11/07/2019	Returned as additional information requested was not provided.
Application EPR/PP3734LK/V012 (variation and consolidation)	Duly made 30/10/2019	Application to vary the permit to increase the tonnage of waste accepted for anaerobic digestion from 50,000 to 70,000 tonnes per annum.
Additional information received	11/05/2020	Information on low COD nature of waste.
Variation determined EPR/PP3734LK/V012	13/07/2020	Varied and consolidated permit issued.

Status log of permit A: EPR/PP3734LK		
Description	Date	Comments
Regulation 61 Notice sent to Operator	01/04/2022	Regulation 61 Notice requiring information for statutory review of permit.
Regulation 61 Notice response EPR/PP3734LK/V013 (re-logged as EPR/PP3734LK/V014)	01/10/2022	Response received from the operator.
Additional information received	20/12/2023	Resubmission of documents following agency feedback relating to WaSC permit review.
Additional information received	30/01/2025	Resubmission of documents following pre-application advice.
Application EPR/PP3734LK/C015 (variation and consolidation with EPR/UP3797EA)	Duly made 26/11/2025	Application to vary, consolidate and update the permit to modern conditions, the addition of the existing sludge anaerobic digestion facility with combustion of biogas at a waste sewage sludge treatment site, a food soup waste operation, a raw sludge dewatering waste operation and the mothballing of the fuel pellet operation.
Additional Information provided in response to a Schedule 5 notice	17/04/2026	Response to Schedule 5 notice requesting information in relation to BAT, emissions to air, emissions to water, process flows and bioaerosols.
Variation and statutory review determined and consolidation issued. EPR/PP3734LK/V014 and C015	19/10/2026	Varied and consolidated permit issued in modern format.

Status log of permit B: EPR/UP3797EA		
Description	Date	Comments
Application EPR/UP3797EA/A001 (EAWML 102520)	Duly made 03/03/2011	Application for a standard rules SR2008 no 19 permit for biological, chemical and physical treatment of waste.
Permit determined EPR/UP3797EA	23/03/2011	Permit issued to Wessex Water Services Limited.
Application EPR/PP3734LK/C015 (variation and consolidation with EPR/PP3734LK)	Duly made 26/11/2025	Application to vary and update the permit to modern conditions.
Variation and statutory review determined and consolidation issued. EPR/PP3734LK/V014 and C015	19/10/2026	Varied and consolidated permit issued in modern format. UP3797EA ceases to exist.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulations 18 and 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates environmental permits

Permit numbers

EPR/PP3734LK
EPR/UP3797EA

Issued to

Wessex Water Services Limited ("the operator"),

whose registered office is

Wessex Water Operations Centre
Claverton Down Road
Claverton Down
Bath
BA2 7WW

company registration number 02366648

to operate regulated facilities at

Avonmouth Bioresources Centre
Kings Weston Lane
Bristol
BS11 0YS

to the extent set out in the schedules.

The notice shall take effect from 19/10/2026

The number of the consolidated permit is EPR/PP3734LK.

Name	Date
Maxine Evans	19/10/2026

Authorised on behalf of the Environment Agency

Schedule 1 – changes in the permit

Note: The conditions numbers used in this schedule refer to those in the consolidated permit.

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation, and as a result of the application made by the operator.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/PP3734LK

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/PP3734LK/V014 and C015 authorising,

Wessex Water Services Limited ("the operator"),

whose registered office is

**Wessex Water Operations Centre
Claverton Down Road
Claverton Down
Bath
BA2 7WW**

company registration number 02366648

to operate an installation and waste operations at

**Avonmouth Bioresources Centre
Kings Weston Lane
Bristol
BS11 0YS**

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

Name	Date
Maxine Evans	19/10/2026

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 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR13) 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 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR13) 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 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR13) the activities shall be undertaken in accordance with best available techniques.
- 2.1.3 All process plant and equipment shall be commissioned, operated and maintained and shall be fully documented and recorded in accordance with the manufacturer’s recommendations.
- 2.1.4 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR13) 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 tables S2.2, S2.3 and S2.4; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
 - (c) the facility has sufficient free capacity to store and treat the waste.
- 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.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR13) waste pre-acceptance and acceptance procedures shall be undertaken in accordance with best available techniques.
- 2.3.8 For the following activities referenced in schedule 1, table S1.1 (AR6):
- (a) each MCP must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this.
 - (b) the operator must keep periods of start-up and shut-down of the combustion plant as short as possible.
 - (c) there shall be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.

2.4 Improvement programme

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

- 2.5.1 The activities referenced in schedule 1, table S1.1 (AR2 and AR3) shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

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 but including ammonia) 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 Subject to condition 3.2.4, below, all liquids in containers, whose emission to water or land could cause pollution, shall be provided with adequate secondary containment, unless other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container have been agreed in writing with the Environment Agency.
- 3.2.4 Condition 3.2.3, above, shall apply unless the operator strictly complies in full with IC15a and IC15b below.
- 3.2.5 Subject to condition 3.2.6, below, all liquid wastes in storage tanks and lagoons shall be fully enclosed, with emissions collected and directed to an appropriate abatement system, unless other appropriate measures to prevent or where that is not practicable, to minimise, emissions of waste gases from storage tanks and lagoons have been agreed in writing with the Environment Agency.
- 3.2.6 Condition 3.2.5, above, shall apply unless the operator strictly complies in full with IC16, IC17a, IC17b and IC23 below.
- 3.2.7 Subject to condition 3.2.8, below, the anaerobic treatment of all wastes shall take place within fully enclosed vessels. Combustible biogas or biomethane produced during biological treatment shall be utilised as a fuel or stored for utilisation off site, unless other appropriate measures to prevent or where that is not practicable, to minimise, emissions of biogas or biomethane from treatment/storage vessels have been agreed in writing with the Environment Agency. There shall be no uncontrolled emissions of biogas to the environment. This excludes the venting of biogas in an emergency using pressure release valves and the release of biogas emissions from the digestate in the limpet box riser pipes and digestate in the limpet box overflow chambers only.
- 3.2.8 Condition 3.2.7, above, shall apply unless the operator strictly complies in full with IC17a and IC17b below.
- 3.2.9 The operator shall not discharge waste waters or liquid digestate to the waste water treatment works when that works is operating in storm overflow conditions, unless other appropriate measures to prevent, or where that is not practicable, to minimise emissions that have been agreed in writing with the Environment Agency.
- 3.2.10 The operator shall implement a leak detection and repair (LDAR) programme to detect and mitigate the release of volatile organic compounds, including methane from diffuse sources.

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.

3.4 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 and S3.4;
- 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, S3.2, S3.3 and S3.4 unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 For the following activities referenced in Schedule 1 Table S1.1 (AR6) for existing MCP Monitoring measurements shall be carried out before the relevant compliance date or within four months of the issue date of the permit whichever is the later.
- 3.5.6 Monitoring of MCP shall not take place during periods of start up or shut down.

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) only use approved products for pest control;
 - (b) treat pest infestations promptly;
 - (c) reject pest-infected incoming waste;
 - (d) 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;
 - (e) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.7 Fire prevention

- 3.7.1 The operator shall take all appropriate measures to prevent fires on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.
- 3.7.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;

- (b) implement the fire prevention plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.7.3 The operator shall undertake a DSEAR assessment and maintain an accident management plan.

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.

4.1.3 The operator shall maintain a record of the type and quantity of fuel used and the total annual hours of operation of each MCP.

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 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR13) 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.
- 4.2.6 The operator shall keep records of non-waste materials leaving the site, including the type of material, the batch number, the date of export off-site and the tonnage exported on that date. These records shall be maintained for at least 2 years.
- 4.2.7 The operator shall submit an annual report detailing the efficiency of removal of non-digestible materials from feedstock prior to processing and the level of contamination in the final recovered digestate.

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 Following the detection of an issue listed in condition 4.3.1, the operator shall review and revise the management system and implement any changes as necessary to minimise the risk of re-occurrence of the issue.
- 4.3.4 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.
- 4.3.5 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:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) 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.

4.3.6 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.

4.3.7 The Environment Agency shall be given at least 14 days' notice before implementation of any part of the site closure plan.

4.3.8 The operator shall notify the Environment Agency as soon as is practicable, in writing of any change of medium combustion plant.

4.3.9 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

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
AR1	S5.4 A(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 biological treatment	R3: Recycling/reclamation of organic substances which are not used as solvents	From receipt of sludge waste through to digestion and recovery of by-products (waste treated by anaerobic digestion). Anaerobic digestion of waste in fifteen tanks (6 x acid phase digesters [APDs] and 8 x mesophilic anaerobic digesters [MADs]) followed by burning of biogas produced from the process. Anaerobic digestion shall be limited to 1,863m³ per day in the APDs and 1,863m³ per day in MADs. Waste types suitable for acceptance are limited to those specified in Table S2.2.
AR2	S5.5 A(1) (a) Making solid fuel (other than charcoal) from waste by any process involving the use of heat.	R1: Use principally as a fuel or other means to generate energy.	From receipt of sewage sludge from the adjacent sewage treatment works to final production of fuel pellets. This activity shall not be operated after 19/10/2026 and shall not recommence until pre-operational condition PO1 has been completed and approved. Waste types suitable for acceptance are limited to those specified in Table S2.3.
AR3	S5.4 A(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 biological treatment.	R3: Recycling/reclamation of organic substances which are not used as solvents	From receipt of food waste through to digestion and recovery of by-products (digestate). Anaerobic digestion of waste in two tanks (2 x mesophilic anaerobic digesters (MADs)) followed by burning of biogas produced from the process. Anaerobic digestion shall be limited to 270 tonnes per day (wet tonnes). This activity shall not be operated after 19/10/2026 and shall not recommence until pre-operational condition PO2 has been completed and approved. Waste types suitable for acceptance are limited to those specified in Table S2.4.

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
Directly Associated Activity			
AR4	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)	Undertaken in relation to Activity AR1, AR2 or AR3. From the receipt of permitted waste to pre-treatment and despatch for anaerobic digestion and the production of fuel on site. Storage of residual wastes from pre-treatment to despatch off-site for recovery. For AR1 and AR3 storage of waste in enclosed equipment and tanks or an enclosed building fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system. For AR2 storage of waste in enclosed equipment and tanks or an enclosed building fitted with appropriate odour and dust abatement and on an impermeable surface with a sealed drainage system. This activity in relation to AR2 and AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO1 and PO2 have been completed and approved. Waste types suitable for acceptance are limited to those specified in Table S2.2, S2.3 and S2.4.
AR5	Physical treatment for the purpose of recycling	R3: Recycling/reclamation of organic substances which are not used as solvents	Undertaken in relation to Activity AR1, AR2 or AR3. From the receipt of waste to despatch for anaerobic digestion and the production of fuel or despatch off site for recovery. For AR1 dilution of incoming wastes using final waste waters from the wastewater treatment works to aid pre-treatment and digestion only. For AR1 and AR3 pre-treatment of waste for anaerobic digestion in enclosed equipment and tanks or an enclosed building fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage

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
			system, including shredding, sorting, screening, compaction, baling, mixing, maceration. Pre-treatment and post-treatment of waste for the pelletisation of fuel in enclosed equipment and tanks or an enclosed building fitted with appropriate odour and dust abatement and on an impermeable surface with a sealed drainage system, including shredding, sorting, screening, compaction, baling, mixing, maceration, pulverisation and drying for the purpose of use as a fuel is permitted for activity AR2 only. Post-treatment of digestate produced from the anaerobic digestion process in enclosed equipment and tanks or an enclosed building fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system, including separation, screening to remove contraries, centrifuge or pressing and addition of thickening agents (polymers) or drying for use as a fertiliser or soil conditioner (drying for the purpose of use as a fuel is not permitted for AR1 and AR3). For AR3 heat treatment (pasteurisation) of waste in three tanks for the purpose of recovery. For AR3 heat treatment (thermal hydrolysis) of waste in one hydrolysis buffer tank for the purpose of recovery. Gas cleaning by biological or physical (carbon filtration) or chemical scrubbing. This activity in relation to AR2 and AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO1 and PO2 have been completed and approved. Waste types suitable for acceptance are limited to those specified in Table S2.2, S2.3 and S2.4.

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
AR6	Steam and electrical power supply	R1: Use principally as a fuel to generate energy	Undertaken in relation to Activity AR1 and AR3. From the receipt of biogas produced at the on-site anaerobic digestion processes (food waste AD (AR3) and sludge AD (AR1)) to combustion with the release of combustion gases. Combustion of biogas in five combined heat and power (CHP) engines with an aggregated thermal input of 18.18MWth. Combustion of natural gas in one auxiliary boiler with a thermal input of 4MWth. Operation of one standby 0.9MWth emergency generator fuelled on diesel. Operation of the emergency generator shall be limited to less than 50 hours per annum for testing and emergency purposes only. This activity in relation to AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO2 have been completed and approved.
AR7	Emergency flare operation	D10: Incineration on land	Undertaken in relation to Activity AR1 and AR3. From the receipt of biogas produced at the on-site anaerobic digestion process to incineration with the release of combustion gases. There shall be no venting or flaring of gas for disposal. Use of one auxiliary flare required only during periods of breakdown or maintenance of the CHP engines and/or biogas upgrading plant Use of one gas to grid biomethane flare required only during periods of non-conforming biogas during biogas upgrade plant start up and shut down.

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
			This activity in relation to AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO2 have been completed and approved.
AR8	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) for injection into the National Grid.	Undertaken in relation to Activity AR1 and AR3. From the receipt of biogas produced at the on-site anaerobic digestion process to injection into the National Grid. This includes return of off-specification biogas for combustion to the on-site CHP engines, and/or emergency flares. This activity in relation to AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO2 have been completed and approved.
AR9	Raw material storage	Storage of raw materials including lubrication oil, antifreeze, propane, ferric chloride, activated carbon, diesel.	From the receipt of raw materials to despatch for use within the facility.
AR10	Gas storage	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Undertaken in relation to Activity AR1 and AR3. Storage of biogas produced from on-site anaerobic digestion of permitted waste in two stand-alone gas holders or roof space of digesters. From the receipt of biogas produced at the on-site anaerobic digestion process to despatch for use within the facility. Emissions of unburnt biogas shall be minimised. This activity in relation to AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO2 have been completed and approved.
AR11	Digestate storage	R13: Storage of waste pending any of	Undertaken in relation to Activity AR1 and AR3.

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
		the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	From the receipt of processed digestate produced from the on-site anaerobic digestion process to despatch for use off-site. For AR1 storage of processed liquid sludge digestate (including dewatering liquors post anaerobic digestion) in two secondary sludge storage tanks and one centrifuge feed tank. For AR3 storage of processed liquid food waste digestate (including dewatering liquors post anaerobic digestion) in one post digestion storage tank. For AR1 storage of processed solid sludge digestate in uncovered digested trailers and located on an impermeable surface with sealed drainage system. For AR3 storage of processed solid food waste digestate in enclosed skips or within an enclosed building fitted with appropriate odour abatement on an impermeable surface with sealed drainage system. This activity in relation to AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO2 have been completed and approved.
AR12	Surface water collection and storage	Collection and storage of uncontaminated roof and site surface water	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.
AR13	Air abatement	Collection and treatment of air from the buildings or plant using existing abatement system [biofilters, carbon filters, particulate filters] and as implemented in line with IC16, IC23 and IC24 (and potentially IC17 based on outcome) prior to	Undertaken in relation to Activity AR1, AR2 or AR3. From the collection of air from site processes to treatment and release of treated air to atmosphere. For AR1 collection and treatment of air from the buildings, tanks or plant associated with sludge waste AD using abatement system – [SAS GBT building (A59) channelled emission subject to IC23]

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
		release to atmosphere.	For AR2 collection and treatment of air from the buildings, tanks or plant associated with fuel production using abatement system – [Pellet Bagging Plant (A58) 1 x particulate filter, Pellet Silo (A56 and A57) 2 x particulate filters] For AR3 collection and treatment of air from the buildings, tanks or plant associated with food waste AD using abatement system – [Food Waste OCU (A30) 1x biofilter Gas to Grid OCU (A24) 1x biofilter, 1 x carbon filter] This activity in relation to AR2 and AR3 shall not be operated after 19/10/2026 and shall not recommence until pre-operational conditions PO1 and PO2 have been completed and approved.
Activity reference	Description of activities for waste operations		Limits of activities
AR14 – Dewatering and storage of raw sludge only	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) R3: Recycling/reclamation of organic substances which are not used as solvents		From the receipt of raw sludge via tanker at the import sludge reception tank and primary sludge from the adjacent WRC via pumping stations for treatment and storage within the sludge pre-digestion and post digestion vessels and plant only (excluding APDs and MADs). Treatment of raw sludge in enclosed equipment and tanks fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system, including separation, screening to remove contraries, mixing, centrifugation or pressing and addition of thickening agents (polymers). Collection and treatment of air from the buildings, tanks or plant associated with both this activity and that of the sludge waste AD using abatement system – [SAS GBT building (A59) channelled emission subject to IC23]. The maximum storage capacity of the site shall not exceed 5,249m³. This activity shall only be undertaken during times that the sludge AD (AR1) is non-operational or in periods of maintenance or individual digesters are offline. Full cleanout of plant and vessels shall be undertaken in post digestion assets between batches of raw sludge treated under this activity and the processing of digested waste under activity AR1 to prevent cross-contamination.

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
			Digestate and raw sludge must be stored separately. Food waste and sludge waste must not be stored or treated together. Tanks and vessels used to store or treat wastes that are not compatible as specified above should be fully cleaned/washed out between differing batches. Waste shall not be stored on site for longer than 13 days. Waste types as specified in Table S2.2.
AR15 – Food soup operation	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) R3: Recycling/reclamation of organic substances which are not used as solvents		From the receipt of food waste via tipper lorry and skip deliveries at the food waste reception hall for treatment and storage within the food waste pre-digestion vessels and plant, hydrolysis tank and pasteurisers only (excluding the digesters and food waste post digestion vessels and plant). Treatment of food waste in enclosed equipment and tanks fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system, including separation, screening to remove contraries, mixing, pressing, pulverisation, hydrolysis and pasteurisation. Collection and treatment of air from the buildings, tanks or plant associated with this activity and the food waste AD using abatement system – [Food Waste OCU (A30) 1x biofilter] The maximum storage capacity of food waste on site shall not exceed 800 tonnes. This activity shall only be undertaken during times that the food waste AD is non-operational. Digestate and untreated food waste must be stored separately. Food waste and sludge waste must not be stored or treated together. Waste shall not be stored on site for longer than 3 days. Waste types as specified in Table S2.4.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application PP3734LK	The response to section 2.1 and 2.2 in the application.	30/03/2006
Variation application NP3533XC	The response to section 2.1 and 2.2 in the application.	01/11/2007

Table S1.2 Operating techniques		
Description	Parts	Date Received
Variation application EPR/PP3734LK/V004	The response to section 2.1 and 2.2 in the application.	07/03/2009
Variation application EPR/PP3734LK/V005	Sections 2.1, 2.2, 3.1, 3.2, 3.3, 3.4, 5.1, 5.2, 5.3 and 5.4 in the application.	20/12/2010
Additional information received	The responses specifying process vessel design and capacities.	04/03/2011
Variation application EPR/PP3734LK/V006	Response to question 4 in Part C1 and question 5 in Part C2 in the application.	01/10/2012
Additional information received	Further information on process vessel infrastructure, document GENWMEA003 (Response to PO04).	27/11/2012
Variation application EPR/PP3734LK/V007	Response to application forms Part C2 and Part C3 and supporting documents.	21/03/2013
Variation application EPR/PP3734LK/V009	Response to application forms Part C2 and Part C3 and supporting documents.	02/06/2014
Variation application EPR/PP3734LK/V010	Response to application forms Part C2 and Part C3 and supporting documents.	18/03/2016
Variation application EPR/PP3734LK/V012	Response to application forms Part C2 and Part C3 and supporting documents.	01/11/2019
Application EPR/ PP3734LK /V014 and C015	Response to section 1a, table 1– Part C4 of the application form Environmental risk assessment – parts covering sludge AD activity (version 1.0 – Sept 2022). Additional BAT information document (Sept 2022). SCR - H5 SCR Wessex Water Avonmouth WRC (version 01 – Sept 2022). 2019 2020 and 2021 annual ground monitoring reports (all issue 1 – March 2019, 2020 and 2021). Geotechnical report (Feb 1998), ground investigation report (Dec 2021). Supporting information for the H5 site condition report (Sept 2022). Ground investigation factual report (version 02 – Nov 2021). environmental management system summary (version 01 – Aug 2022). Environmental guidance fire emergencies (version 1 – Sept 2022). H5 SCR Wessex Water Avonmouth food WRC (version 01 – Sept 2022). Waste treatment BAT gap analysis - CHP clean (Oct 2022). Waste treatment BAT gap analysis – G2G clean (Oct 2022). Best available techniques as described in the BAT Reference Document for Waste Treatment (the BREF) and BAT conclusions.	30/09/2022 and 01/10/2022
Additional information received	CIRIA 736 IED report - secondary containment assessment (version 2 – Dec 2023). Avonmouth BC digestion process monitoring description (version 1 – Nov 2023). Avoiding driving off while connected (version 2 – February 2022). Avonmouth BC bioaerosol monitoring report (Nov 2022).	20/12/2023

Table S1.2 Operating techniques		
Description	Parts	Date Received
	Avonmouth C6 form - additional responses (Dec 2023).	
Additional information received	Environmental risk assessment - food waste soup (version 2 – Jan 2025). BFWRF rejection procedure (version 6 March 2024). Acceptance procedure - food waste reception hall (version 8 - Aug 2023). Acceptance procedure - BFWRF liquid tank (version 8 – March 2024). BFWRF - digestion process monitoring description (version 2 – Jan 2025). Pre acceptance and waste acceptance criteria PACWAC volume, quality & quantity (version 11.1 – May 2024). Avonmouth BC (13013) IED permit application response document (Jan 2025).	30/01/2025
Additional information received	Avonmouth sludge mains - full site (Feb 2019) Avonmouth potable and effluent hydrants-full site (Jan 2019). Avonmouth potable and effluent water routes-full site (Jan 2019). Avonmouth gas pipelines (Jan 2019). Avonmouth foul, storm and main culverts-full site (Jan 2019). Avonmouth high level programme (Aug 2025). Letter EA IED response FINAL (dated 07/07/2025).	07/08/2025
Response to a request for further information dated 06/10/2025	Best tankering practice (version 5 – April 2025). Waste pre acceptance, acceptance and rejection procedure (version 6 – May 2025).	09/10/2025
Response to a request for further information dated 12/11/2025	Waste treatment BAT gap analysis - food waste (Nov 2025). Avonmouth bioresources centre process description [sections 1.1 – 1.3 and section 2.3 only] (Nov 2025). Avonmouth BC waste management plan (issue No.3 – Nov 2025). WWSL process flow diagram raw sludge activity (Nov 2025). Avonmouth energy efficiency plan (issue No1 – Nov 2025). Avonmouth air emissions risk assessment (version 3 – 2025). Avonmouth renewable energy site secondary containment report (version 2 – Nov 2025). Energy efficiency - Avonmouth renewable energy site (version 4 – Nov 2025). WWSL process flow diagram sludge AD (Nov 2025). Response to questions 2 detailing EWCs, question 4 detailing limpet boxes, question 8 detailing annual throughput, question 15 detailing mothballing/substituted assets and question 16 detailing waste segregation. Response to section 3a as a revision to that submitted on 30/09/2026 – technical standards, Part C3 of the application form.	26/11/2025
Application EPR/ PP3734LK/T016	Response to section 3a and 3b table 1, Part D2 of the application form. GTG SHEQC management system manual (version 7 – Jan 2026).	28/01/2026

Table S1.2 Operating techniques		
Description	Parts	Date Received
	CHP SHEQC management system manual (version 5 – Jan 2026). BFWRF SHEQC management system manual (version 29.1 – June 2025). Best available techniques as described in the BAT Reference Document for Waste Treatment (the BREF) and BAT conclusions.	
Response to Schedule 5 Notice dated 17/03/2026	Avonmouth renewable energy site (RES) - odour management plan (version 5 – April 2026). GENWMP358 leak detection and repair plan (LDAR) - renewable energy (version 1 – March 2026). Waste management plan – renewable energy (issue no.4 – Nov 2026). Waste management plan – BFWRF (issue no.1 – Nov 2026). WWEL transfer of indirect discharges to water risk assessment (April 2026). Schedule 5, Question 22 response showing pipework operator jurisdiction for overlapping areas document (April 2026). WWEL food soup process flow diagram (April 2026). WWEL food AD process flow diagram (April 2026). Accident management plan - renewable energy (version 1 – March 2026). Avonmouth bioresources centre - residue management plan (issue no.2 – Nov 2026). WWEL plans pack (version C03 – April 2026). APMP risk assessment for Avonmouth BC (April 2026). Avonmouth BC Fugitive emissions leak detection (LDAR plan) (issue no.3 – April 2026). WWEL biogas utilisation - process flow diagram (April 2026). Avonmouth Bioresources Centre odour management plan (version 4 – April 2026). Sludge asset cleandown procedure for handling different waste types (issue no.2 - Aug 2025). Accident management plan - Bristol Food Waste Recycling Facility (version 7 – March 2026). Accident prevention & management plan for Avonmouth BC (issue no.1 – April 2026). Response to questions 1c detailing food waste AD and food soup process description, question 2 detailing hydraulic retention times, question 3 detailing maximum storage times, question 4 detailing cleandown procedure, question 5 detailing daily treatment limits, questions 6 and 7 detailing storage capacity and periods for raw sludge, question 8 and 9 detailing storage capacity and periods for food soup, question 16 detailing NGRs, question 17 detailing breather pipes and question 20 detailing standby generator.	17/04/2026
Response to a request for further information dated 29/04/2026	WWSL plans pack (version C04 – May 2026). Avonmouth combined plans pack (version C05 – May 2026). Response to question 1b relating to the sampling point S1 and the mothballed food waste AD operation.	14/05/2026

Table S1.2 Operating techniques		
Description	Parts	Date Received
16/10/2026 response to peer review	Provision of updated emission point plan	16/10/2026

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1 – IC14	Previous improvement conditions	Complete
Improvement condition for secondary containment design in relation to activity AR1		
IC15a	The operator shall submit a written 'secondary containment implementation plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the finalised designs and an implementation schedule for the identified secondary containment systems proposed in the document CIRIA 736 IED report - secondary containment assessment (version 2 – Dec 2023). The detailed design(s) and specifications shall be produced by appropriate competent individuals (qualified civil or structural engineer), in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance. The plan shall include but not be limited to the following components: • An updated BAT assessment with specific regard to BAT 19 of the Waste Treatment BREF to demonstrate how the finalised designs based on the proposed secondary containment in the documents CIRIA 736 IED report - secondary containment assessment (version 2 – Dec 2023) and Avonmouth renewable energy site secondary containment report (version 2 – Nov 2025) meets BAT 19. • An assessment of the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure. • Finalised designs and specifications of the proposed secondary containment proposal completed by appropriate competent individuals. • A program of works with timescales for the commissioning of the secondary containment systems to comply with CIRIA C736 (2014) guidance, or equivalent. • An updated site and infrastructure plan. • A preventative maintenance and inspection regime. The plan shall be implemented in accordance with the Environment Agency's prior written approval.	31/03/2030 Implementation of all required and approved containment improvements must be completed by 31/03/2030.
Improvement condition for secondary containment design in relation to activity AR3		
IC15b	The operator shall submit a written 'secondary containment implementation plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the finalised designs and an implementation schedule for the identified secondary containment systems proposed in the document Avonmouth renewable energy site	Implementation of all required and approved containment improvements

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	secondary containment report (version 2 – Nov 2025). The detailed design(s) and specifications shall be produced by appropriate competent individuals (qualified civil or structural engineer), in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance. The plan shall include but not be limited to the following components: • An updated BAT assessment with specific regard to BAT 19 of the Waste Treatment BREF to demonstrate how the finalised designs based on the proposed secondary containment in the documents CIRIA 736 IED report - secondary containment assessment (version 2 – Dec 2023) and Avonmouth renewable energy site secondary containment report (version 2 – Nov 2025) meets BAT 19. • An assessment of the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure. • Finalised designs and specifications of the proposed secondary containment proposal completed by appropriate competent individuals. • A program of works with timescales for the commissioning of the secondary containment systems to comply with CIRIA C736 (2014) guidance, or equivalent. • An updated site and infrastructure plan. • A preventative maintenance and inspection regime. The plan shall be implemented in accordance with the Environment Agency's prior written approval.	must be completed prior to the recommencement of operations following the approval of pre-operational condition PO2
Improvement conditions for enclosure of tanks storing (or treating) sewage sludge (tanks pre-digestion) in relation to activity AR1		
IC16	The operator shall submit a written 'enclosure and abatement plan' and obtain the Environment Agency's written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of enclosures/covers and associated emission abatement systems in line with BAT 14 and BAT 53 for storage and treatment tanks pre-anaerobic digestion identified as strain press feed sumps, liquor sumps, strained sludge sump, import sludge reception tank, APD GBT feed tank, APD GBTs (1, 2 and 3), APD feed tank, , consolidation tanks, Bellmer feed tanks, Bellmer GBT (1,2), Bellmer thickened sludge tank and the thickened SAS transfer tank. The plan shall include evidence that the tank enclosures/covers will be designed and installed in accordance with guidance, <u>Biological waste treatment: appropriate measures for permitted facilities</u>, and provide evidence to demonstrate why the emission abatement system will be effective and meet the requirements of BAT 14 and BAT 53.	31/03/2030 Implementation of all required and approved vessel cover improvements must be completed by 31/03/2030.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The plan shall be implemented in accordance with the Environment Agency's prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	
Improvement conditions for enclosure of tanks storing (or treating) digestate in relation to activity AR1		
IC17a	The operator shall submit a written 'post anaerobic digestion vessel cover' plan and obtain the Environment Agency's written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of covers for vessels storing and/or treating digestate in tanks identified as the two secondary sludge storage tank (SSST), centrifuge feed tank, centrifuges 5 and 6, centrifuges 7 and 8, Flottweg centrifuges and road centrifuges. The plan shall also contain a detailed description of the proposed gas utilisation/abatement plant, gas storage infrastructure for the biogas produced during anaerobic digestion, pressure relief valves and gas pipework. The plan shall include but not be limited to the following components: • Evidence that the pollutants of the waste gas (including methane) produced in the secondary sludge storage tank (SSST), centrifuge feed tank, centrifuges 5 and 6, centrifuges 7 and 8, Flottweg centrifuges and road centrifuges will be controlled and/or abated either by the proposed gas utilisation plant or proposed abatement system. • Evidence that the vessel covers, gas utilisation/ abatement plant and ancillary equipment have been designed by appropriately qualified engineers. • Evidence that the vessel covers, and gas utilisation/abatement plant will be designed and installed in accordance with guidance, <u>Biological waste treatment: appropriate measures for permitted facilities</u>. • An updated Hazard and Operability Study (HAZOP) and DSEAR risk assessment. • An assessment of gas storage capacity and gas utilisation/abatement capacity including proposals for additional gas utilisation/ abatement plant. • A program of works with timescales for the commissioning of the vessel cover(s), gas utilisation/ abatement infrastructure and ancillary equipment. The plan shall be implemented in accordance with the Environment Agency's prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement	31/03/2030 Implementation of all required and approved vessel cover improvements must be completed by 31/03/2030.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	
Improvement conditions for enclosure of tanks storing (or treating) digestate for activity AR3		
IC17b	The operator shall submit a written 'post anaerobic digestion vessel cover' plan and obtain the Environment Agency's written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of covers for vessels storing and/or treating digestate in tanks identified as the post digestion storage tank and strain press buffer tank relating to activity AR3. The plan shall also contain a detailed description of the proposed gas utilisation/abatement plant, gas storage infrastructure for the biogas produced during anaerobic digestion, pressure relief valves and gas pipework. The plan shall include but not be limited to the following components: • Evidence that the pollutants of the waste gas (including methane) produced in post digestion storage tank and strain press buffer tank will be controlled and/or abated either by the proposed gas utilisation plant or proposed abatement system. • Evidence that the vessel covers, gas utilisation/ abatement plant and ancillary equipment have been designed by appropriately qualified engineers. • Evidence that the vessel covers, and gas utilisation/abatement plant will be designed and installed in accordance with guidance, <i>Biological waste treatment: appropriate measures for permitted facilities</i>. • An updated Hazard and Operability Study (HAZOP) and DSEAR risk assessment. • An assessment of gas storage capacity and gas utilisation/abatement capacity including proposals for additional gas utilisation/ abatement plant. • A program of works with timescales for the commissioning of the vessel cover(s), gas utilisation/ abatement infrastructure and ancillary equipment. The plan shall be implemented in accordance with the Environment Agency's prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	Implementation of all required and approved vessel cover improvements must be completed prior to the recommencement of operations following the approval of pre-operational condition PO2
Improvement conditions for primary containment tanks relating to AR1		
IC18a	The operator shall submit a written 'primary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of an inspection and program of works undertaken by an appropriately qualified engineer and shall assess the	Within 12 months of permit issue or such other date as agreed in

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	extent, design specification and condition of primary containment systems (including associated pipework) where polluting liquids and solids are being stored, treated, and/or handled. The plan shall include, but not be limited to: • An assessment of the physical condition of all primary containment systems (storage and treatment vessels and associated pipework) using a Written Scheme of Examination and their suitability for providing primary containment when subjected to dynamic and static loads. • A program of works with timescales for the implementation of individual improvement measures necessary to demonstrate that the primary containment is fit for purpose or alternative appropriate measures to ensure all polluting materials will be contained on site. • A preventative maintenance and inspection regime. The plan shall be implemented in accordance with the Environment Agency's written approval.	writing with the Environment Agency.
Improvement conditions for primary containment tanks relating to AR3		
IC18b	The operator shall submit a written 'primary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of an inspection and program of works undertaken by an appropriately qualified engineer and shall assess the extent, design specification and condition of primary containment systems (including associated pipework) where polluting liquids and solids are being stored, treated, and/or handled. The plan shall include, but not be limited to: • An assessment of the physical condition of all primary containment systems (storage and treatment vessels and associated pipework) using a Written Scheme of Examination and their suitability for providing primary containment when subjected to dynamic and static loads. • A program of works with timescales for the implementation of individual improvement measures necessary to demonstrate that the primary containment is fit for purpose or alternative appropriate measures to ensure all polluting materials will be contained on site. • A preventative maintenance and inspection regime. The plan shall be implemented in accordance with the Environment Agency's written approval.	Within 12 months of completion of preoperational condition PO2 or such other date as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
Improvement conditions for establishing an inventory of liquid waste water discharged from sludge anaerobic digestion and associated activities (AR1 and AR4 – AR14)		
IC19a	The operator shall submit a sampling programme in relation to waste water streams and shall obtain the Environment Agency's written approval to it. The sampling programme shall be designed to fully characterise the waste waters discharged to Avonmouth water recycling centre (WRC) from emission points S1, S2, and S4 in table S3.2 of this permit. The programme shall include but not be limited to a methodology for a minimum of one 24-hour flow proportional sample a month, for each emission point, for a period of 12 months. The programme shall detail the sampling methods/standards used. Sampling methods shall be in accordance with BAT conclusion 20 of the Waste Treatment BREF. The programme shall include the National Grid Reference (NGR) of the sampling point locations. The programme shall establish the characteristics of the liquid waste water streams and shall include as a minimum for each emission point: • Average values and variability of flow, pH, temperature and conductivity. • Average concentration and load values of all relevant substances and their variability. • Data on bioeliminability. The programme shall sample for all relevant substances and must include: • Hydrocarbon oil index (HOI) (mg/l) • Free cyanide (CN⁻) (mg/l) • Adsorbable organically bound halogens (AOX) (mg/l) • Metals and metalloids; arsenic (expressed as As), cadmium (expressed as Cd), chromium (expressed as Cr), hexavalent chromium (expressed as Cr(VI)), copper (expressed as Cu), lead (expressed as Pb), nickel (expressed as Ni), mercury (expressed as Hg), zinc (expressed as Zn) (µg/l) The operator shall submit the collected monitoring data in writing to the Environment Agency according to agreed reporting periods. The sampling programme shall be produced in accordance with Environment Agency guidance: • Specific substances and priority hazardous substances – <u>Surface water pollution risk for your environmental permit</u> <u>Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk).</u>	Within 2 months of issue of this permit or such other date as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	<i>Monitoring discharges to water: guidance on selecting a monitoring approach</i> <u>Monitoring discharges to water: guidance on selecting a monitoring approach - GOV.UK (www.gov.uk)</u> The monitoring programme shall be carried out and the monitoring data submitted in accordance with the Environment Agency's written approval.	
Improvement conditions for indirect discharges to water discharged from sludge anaerobic digestion and associated activities (AR1 and AR4 – AR14)		
IC19b	The operator shall submit a report for approval by the Environment Agency, following completion of the sampling programme approved under IC19a. The report shall include but not be limited to; a summary of the sample results, a completed H1 risk assessment(s) and modelling outputs where appropriate. The operator shall provide conclusions on whether the waste waters discharged from S1, S2 and S4 will have any adverse impact on the receiving waters once discharged from Avonmouth water recycling centre (WRC). An assessment shall be made against the parameters specified in the relevant environmental standards as specified within Environment Agency guidance as follows: - Specific substances and priority hazardous substances – <i>Surface water pollution risk for your environmental permit</i> <u>Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk)</u>. - Sanitary substances – <i>H1 annex D2: assessment of sanitary and other pollutants in surface water discharges</i> <u>1076 14 H1 Annex D2 - Assessment of sanitary and other pollutants within Surface Water Discharges (publishing.service.gov.uk)</u> The report shall include any proposals and/or additional measures required to prevent or minimise any significant emissions from the installation along with timescales for implementation.	Within 15 months of the Environment Agency's written approval of the sampling programme submitted under IC19a or such other date as agreed in writing with the Environment Agency
IC19c	The operator shall implement any improvements identified within the report approved under IC19b in accordance with the Environment Agency's written approval and provide written confirmation to the Environment Agency that the improvements have been completed. (Note, approval of reports under this improvement condition does not preclude the need for permit variation application(s) to operate the improvements identified in the report and/or include any necessary emission limit values).	Within 6 months of the report in relation to IC19b being approved by the Environment Agency or such other date as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
Improvement conditions for biogas upgrading plant		
IC20a	The operator shall carry out a monitoring study to verify the assumptions made in the application in relation to the releases of pollutants to air. The study shall include the monitoring of point source releases to air from the biogas upgrading plant emission points A24 during normal operation, having regard to the Environment Agency technical guidance, <i>Monitoring stack emissions: environmental permits</i> and to MCERTS standards. As a minimum, two separate monitoring campaigns in a year shall be completed (one monitoring survey six months following commissioning of the biogas upgrading plant). The pollutants to be monitored shall include: • Total volatile organic compounds. • Hydrogen sulphide.	Within 6 months of issue of this permit or such other date as agreed in writing with the Environment Agency
IC20b	Following the completion of IC20a, the operator shall undertake an emissions impact assessment of point source releases to air from points A24 using the information obtained through the emissions monitoring. The emissions impact assessment report and all associated monitoring reports and assessments shall be submitted in writing to the Environment Agency for review. The emissions impact assessment shall, as a minimum, include: • Reports showing details of the monitoring undertaken and the results obtained. • Results of the assessment of long and short-term impacts from the emissions in accordance with Environment Agency Guidance – Air emissions risk assessment for your environmental permit. • A completed H1 assessment software tool. If the H1 assessment shows potential long or short-term impacts from the emissions, the operator shall propose an action plan to reduce the impacts of the substances identified.	Within 6 months of completion of IC20a or such other date as agreed in writing with the Environment Agency
Improvement condition to address methane slip emissions from gas engines burning biogas		
IC21	The operator shall submit a written plan for approval by the Environment Agency which establishes the methane emissions in the exhaust gas from engines burning biogas and or biomethane and compare these to the manufacturer's specification and benchmark levels. Where manufacturer's data is not available, operators should calculate a default benchmark level based on the TVOC emission limit of 1000mg/Nm³ specified within guidance, <i>Monitoring landfill gas engine emissions: LFTGN 08</i>.	Within 6 months of issue of this permit or as such other agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The plan shall develop proposals to assess the potential for methane slip and take corrective actions where emissions of methane above the manufacturer's specification are identified. The operator shall establish methane emissions in the exhaust gas and methane slip using the following standards: • EN ISO 25139 • EN ISO 25140	
Improvement condition for review of emissions from digestate in riser pipes and the limpet box overflow chambers in relation to activity AR1		
IC22a	The operator shall submit a written 'limpet chamber review' report and shall obtain the Environment Agency's written approval to it. The report shall contain the results of an inspection and program of works undertaken by an appropriately qualified engineer and shall assess the design specification, condition and suitability of limpet chamber utilisation on digesters where there is a risk of uncontrolled emission release during periods of digester fill and spill. The report shall review the limpet chambers in line with the criteria set out in section 11.6 (Point source emission to air – Stacks and vents) and 11.9 (Leak detection and repair) of Environment Agency guidance, <i>Biological waste treatment: appropriate measures for permitted facilities</i>. The report shall also include, but not be limited to: • A quantification of the emission releases from the limpet chambers using leak detection reporting methodology (emission estimate in kg/h for each chamber surveyed and total site emission rate in kg/h, including uncertainty). • A program of works with timescales for the implementation of identified individual improvement measures necessary to demonstrate that the limpet chambers are fit for purpose and operated to ensure emission release is minimised and only from digestate in the limpet box riser pipes and digestate in the limpet box overflow chamber. A preventative maintenance and inspection regime. The report shall be implemented in accordance with the Environment Agency's written approval.	Within 6 months of permit issue or other date as agreed in writing with the Environment Agency
Improvement condition for review of emissions from digestate in riser pipes and the limpet box overflow chambers in relation to activity AR3		
IC22b	The operator shall submit a written 'limpet chamber review' report and shall obtain the Environment Agency's written approval to it. The report shall contain the results of an inspection and program of works undertaken by an appropriately qualified engineer and shall assess the design specification, condition and suitability of limpet chamber utilisation on digesters where there is a risk of uncontrolled emission release during periods of digester fill and spill.	Within 6 months of completion of preoperational condition PO2 or such other date as agreed in writing with the

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The report shall review the limpet chambers in line with the criteria set out in section 11.6 (Point source emission to air – Stacks and vents) and 11.9 (Leak detection and repair) of Environment Agency guidance, <i>Biological waste treatment: appropriate measures for permitted facilities</i>. The report shall also include, but not be limited to: • A quantification of the emission releases from the limpet chambers using leak detection reporting methodology (emission estimate in kg/h for each chamber surveyed and total site emission rate in kg/h, including uncertainty). • A program of works with timescales for the implementation of identified individual improvement measures necessary to demonstrate that the limpet chambers are fit for purpose and operated to ensure emission release is minimised and only from digestate in the limpet box riser pipes and digestate in the limpet box overflow chamber. A preventative maintenance and inspection regime. The report shall be implemented in accordance with the Environment Agency's written approval.	Environment Agency
Improvement condition for the abatement of channelled emissions		
IC23	The operator shall submit a written 'abatement plan' and obtain the Environment Agency's written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of abatement plant at emission points A59 (serving the SAS GBT building) that meets the requirements of BAT 34 and BAT 53 of the Waste Treatment BREF. That plan shall also contain but not be limited to: • The plan shall include a demonstration (whether by a detailed review of technical papers or by trial results) that all odorous chemical compounds and their loading rates expected in the relevant air streams have been considered in the design; and supporting evidence that the odorous compounds will be controlled and/or abated either by operating techniques or by the proposed abatement systems. • Evidence that the abatement plant will be designed and installed in accordance with guidance, <i>Biological waste treatment: appropriate measures for permitted facilities</i>. • A program of works with timescales for the commissioning of the abatement plant infrastructure. The operator shall install and commission the abatement plant in line with the timescales as approved by the Environment Agency.	Within 6 months of permit issue or such other date as agreed in writing with the Environment Agency Implementation of all required and approved abatement improvements must be completed by 31/03/2030.
Improvement condition for review of effectiveness of abatement plant in relation to activity AR1 and AR13		
IC24a	The operator shall carry out a review of the abatement plant SAS GBT building (emission point A59) on site, to determine whether the	Within 6 months from completion

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	measures have been effective and adequate to prevent, or where this is not possible to minimise, emissions released to air (including but not limited to odour and ammonia Hydrogen chloride (HCl), and TVOC). The operator shall submit a written report to the Environment Agency following this review for assessment and approval. The report shall include but not be limited to the following aspects: • Full investigation and characterisation of the waste gas streams. • Evidence that the emission of pollutants in the waste gas stream is being prevented or where this is not possible minimised by the abatement plant. • Abatement stack monitoring results (including but not limited to odour and ammonia, HCl, and TVOC). • Abatement process monitoring results (including but not limited to odour and ammonia, HCl, and TVOC). • Details of air quality quantitative impact assessment including modelling and a proposal for site-specific “action levels” (including but not limited to odour concentration, hydrogen sulphide and ammonia, HCl, and TVOC). • Odour monitoring results at the site boundary. • Records of odour complaints and odour related incidents. • Recommendations for improvement including the replacement or upgrading of the abatement plant. • Timescales for implementation of improvements to the abatement plant. The operator shall implement any improvements in line with the timescales as approved by the Environment Agency. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	of IC16 and IC23 above or such other date as agreed in writing with the Environment Agency
Improvement condition for review of effectiveness of abatement plant in relation to activity AR3 and AR15		
IC24b	The operator shall carry out a review of the abatement plant gas to grid GAC biofilter and carbon OCU (emission point A24), food waste biofilter (emission point A30) to determine whether the measures have been effective and adequate to prevent, or where this is not possible to minimise, emissions released to air (including but not limited to odour and ammonia).	Within 6 months of permit issue or other date as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The operator shall submit a written report to the Environment Agency following this review for assessment and approval. The report shall include but not be limited to the following aspects: • Full investigation and characterisation of the waste gas streams. • Evidence that the emission of pollutants in the waste gas stream is being prevented or where this is not possible minimised by the abatement plant. • Abatement stack monitoring results (including but not limited to odour and ammonia) • Abatement process monitoring results (including but not limited to odour and ammonia), • Details of air quality quantitative impact assessment including modelling and a proposal for site-specific “action levels” (including but not limited to odour concentration). • Odour monitoring results at the site boundary. • Records of odour complaints and odour related incidents. • Recommendations for improvement including the replacement or upgrading of the abatement plant. • Timescales for implementation of improvements to the abatement plant. The operator shall implement any improvements in line with the timescales as approved by the Environment Agency. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	
Improvement condition for monitoring digestate stability in relation to activity AR1		
IC25	The operator shall submit a written report, with supporting evidence, on the stability of whole digestate, (i.e. prior to dewatering), and obtain the Environment Agency’s written approval to it. The report shall assess whether biogas emissions from post digestion storage or treatment of digestate is likely to have been minimised. The report shall include but not be limited to: • An assessment of residual biogas potential in accordance with the OFW004-005 [N6] methodology specified by <i>BSI PAS 110: Producing Quality Anaerobic Digestate</i> or an equivalent methodology for assessing residual biogas potential of the digestate.	Within 6 months of permit issue or such other date as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
Improvement condition for establishing an inventory of liquid waste water discharged from food waste anaerobic digestion and associated activities (AR3 – AR13)		
IC26	The operator shall submit a written report to the Environment Agency for assessment and written approval as required by sections 11.2 and 11.12 of biological waste treatment: appropriate measures for permitted facilities. The emissions inventory must include information about the relevant characteristics of point source emissions to water. The sampling programme shall be designed to fully characterise the waste waters discharged to Avonmouth water recycling centre (WRC) from emission points S5 in table S3.2 of this permit. The report must include: (a) the results and conclusions of the emissions monitoring and assessment undertaken in accordance with your emissions inventory. (a) the results and conclusions from an assessment of the environmental impact of the emissions to water using all relevant parameters identified from your emissions inventory under (a) above. The assessment must be carried out using the Environment Agency's 'H1 Environmental Risk Assessment' tool (or equivalent as agreed with the Environment Agency) and/or modelling as required following our guidance Surface water pollution risk assessment for your environmental permit' Where it is concluded that the impact of an emission may be significant or exceeds an environmental standard (e.g. an environmental quality standard EQS) the operator shall: a) Review whether there is a need for emissions limits in order to prevent exceedance of environmental standards. b) Propose revised emission limits that will prevent exceedance of the environmental standard(s). c) Include proposals for measures to mitigate the emission to meet the relevant emission limit (for example, the provision of additional treatment or abatement) and timescales for the implementation of these measures. The proposals shall be implemented within 6 months of approval of the report or as agreed in writing by the Environment Agency.	Within 12 months of completion of preoperational condition PO2 or such other date as agreed in writing with the Environment Agency
Improvement condition for the recirculation of water from food waste anaerobic digestion and associated activities (AR3 – AR13)		
IC27	The operator shall submit a written 'Waste water reduction plan' for approval by the Environment Agency. The plan shall include a review of the generation, management and disposal of process waters from AR3 at point S5. The plan shall include, but not be limited to: • An assessment of how the generation of Food Waste AD liquors is minimised and managed within the installation,	Within 3 months of completion of preoperational condition PO2 or such other date as agreed in

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	including the extent of recirculation within the process in line with BAT 19b and BAT 35b of the Best available techniques as described in the BAT Reference Document for Waste Treatment (the BREF) and BAT conclusions; • A full explanation of any constraints on full recirculation, where applicable, including process or operational considerations; • A description of the operational and management controls in place to minimise pollution prior to transfer of liquors beyond the installation boundary; • Identification of any improvements required to ensure compliance with BAT 19b and 35b, including measures to reduce reliance on discharge of process waters to sewer; • A programme of any identified improvements, including timescales, to implement any measures identified. Any improvements shall be implemented within 6 months of approval of the report or as agreed in writing by the Environment Agency.	writing with the Environment Agency
Improvement condition for enclosure of raw sludge in relation to activity AR14		
IC28	The operator shall submit a written 'raw sludge enclosure and abatement plan' and obtain the Environment Agency's written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of enclosures/covers and associated emission abatement systems in line with BAT 14 and BAT 53 for the acceptance of raw sludge on site. The plan shall include evidence that raw sludge acceptance will be undertaken in accordance with guidance, <i>Biological waste treatment: appropriate measures for permitted facilities</i>, and provide evidence to demonstrate how the proposals and any abatement will be effective and meet the requirements of <i>Biological waste treatment: appropriate measures for permitted facilities</i>. The plan shall be implemented in accordance with the Environment Agency's prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	Within 6 months of permit issue or such other date as agreed in writing with the Environment Agency Implementation of all required and approval enclosure and abatement improvements must be completed by 31/03/2030.

Table S1.4 Pre-operational measures		
Reference	Operation	Pre-operational measures
Pre-operational condition to submit an assessment of an activity prior to recommissioning		
PO1	Activity reference AR2 and associated waste types table S2.3. (chargeable pre-operational condition)	Prior to the recommencement of AR2 authorised by table S1.1, including any waste acceptance, storage and treatment which are temporarily non-operational under this variation notice, the operator shall confirm to the Environment Agency the intention to recommence operation and provide supporting documents for approval demonstrating activities are in accordance with the requirements of the Waste Treatment BAT Conclusions and Non-hazardous and inert waste appropriate measures for permitted sites and other appropriate measures guidance as applicable. The activities permitted shall only recommence once written agreement has been provided by the Environment Agency.
PO2	Activity reference AR3 and associated waste types table S2.4. (chargeable pre-operational condition)	Prior to the recommencement of AR3 authorised by table S1.1, including any waste acceptance, storage and treatment which are temporarily non-operational under this variation notice, the operator shall confirm to the Environment Agency the intention to recommence operation and provide supporting documents for approval demonstrating activities are in accordance with the requirements of the Waste Treatment BAT Conclusions and Biological waste treatment appropriate measures for permitted sites and other appropriate measures guidance as applicable. This shall also include; • How this operation will interact with the other operations/activities on-site. • A H1 assessment/detailed modelling (if required) looking at the potential impact of emissions from the food waste AD process, together with any measures to reduce or abate emissions where detailed modelling does not screen out such emissions. This will be applicable both to emissions to air and water. • How the centrate generated as part of the food waste AD liquors are directed to Avonmouth WRC via sampling point S5 without the effluent being also included in the monitoring of sampling point S1. This is to prevent double monitoring and to ensure sampling point S1 characterises sludge waste AD liquors only. If the effluent cannot be redirected accordingly a variation will be necessary to identify alternative sampling and transfer points prior to discharge into the works this may also include a variation to sludge AD activity AR1. Once approved the operator must implement the proposals in the report in line with the timescales agreed with the Environment Agency's written approval. The activities permitted shall only recommence once written agreement has been provided by the Environment Agency. (Note that approval of proposals under this pre-operational condition does not preclude the need for a permit variation application to recommission the activity in the case of any changes to that activity from

Table S1.4 Pre-operational measures		
Reference	Operation	Pre-operational measures
		what is already covered in this permit. Any variation may include the insertion of necessary emission limit values).

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
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Table S2.2 Permitted waste types and quantities for anaerobic digestion of sludge and raw sludge dewatering (activity AR1 and AR14 in Table S1.1)	
Maximum quantity	Annual throughput shall not exceed 2,850,000 wet tonnes for activity AR1 and 290,000 tonnes for activity AR14
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Biodegradable wastes that is significantly contaminated with non-compostable or digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • Wastes containing wood-preserving agents or other biocides and post-consumer wood. • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
Waste code	Description
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 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)
19 06	wastes from anaerobic treatment of waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (digested sewage sludge only)
19 08	wastes from waste water treatment plants not otherwise specified
19 08 05	sludges from the treatment of urban waste water
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only) subjected to mechanical treatment only from a process that treats waste which are listed in this table, Table S2.2.
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

Table S2.2 Permitted waste types and quantities for anaerobic digestion of sludge and raw sludge dewatering (activity AR1 and AR14 in Table S1.1)	
Maximum quantity	Annual throughput shall not exceed 2,850,000 wet tonnes for activity AR1 and 290,000 tonnes for activity AR14
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Biodegradable wastes that is significantly contaminated with non-compostable or digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • Wastes containing wood-preserving agents or other biocides and post-consumer wood. • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
Waste code	Description
20 03	other municipal wastes
20 03 04	septic tank sludge

Table S2.3 Permitted waste types and quantities for solid fuel pelletiser plant (activity AR2 in Table S1.1)	
Maximum quantity	Annual throughput shall not exceed 38,000 tonnes
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007.. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
Waste code	Description
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 06	wastes from anaerobic treatment of waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (digested sewage sludge only)
19 08	wastes from waste water treatment plants not otherwise specified
19 08 05	sludges from the treatment of urban waste water

Table S2.4 Permitted waste types and quantities for anaerobic digestion of food waste and food soup operation (activity AR3 and AR15 in Table S1.1)

Maximum quantity	Annual throughput shall not exceed 70,000 tonnes aggregated for both activities
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Biodegradable wastes that is significantly contaminated with non-compostable or digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • Wastes containing wood-preserving agents or other biocides and post-consumer wood • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
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 – vegetables, fruit and other crops
02 01 02	animal tissue waste
02 01 03	plant tissue waste
02 01 06	animal faeces, urine and manure (including spoiled fully biodegradable animal bedding)
02 01 07	wastes 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, peeling, centrifuging and separation including wash waters and sludges from secondary food processing or the cook chill sector
02 02 02	animal tissue waste
02 02 03	materials unsuitable for consumption or processing including animal gut contents
02 02 04	sludges from on-site effluent treatment including sludges from gelatine production
02 03	wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation
02 03 01	sludges from washing, cleaning peeling, centrifuging and separation (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)
02 03 04	materials unsuitable for consumption or processing (including waste from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)

Table S2.4 Permitted waste types and quantities for anaerobic digestion of food waste and food soup operation (activity AR3 and AR15 in Table S1.1)

Maximum quantity	Annual throughput shall not exceed 70,000 tonnes aggregated for both activities
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Biodegradable wastes that is significantly contaminated with non-compostable or digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • Wastes containing wood-preserving agents or other biocides and post-consumer wood • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
Waste code	Description
02 03 05	sludges from on-site effluent treatment (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)
02 04	wastes from sugar processing
02 04 03	sludges from on-site effluent treatment – sludges from the processing of sugar
02 05	wastes from the dairy products industry
02 05 01	materials unsuitable for consumption or processing – biodegradable wastes derived from the processing of dairy products only
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 – biodegradable wastes from the processing of materials used in bakery and confectionery
02 06 03	sludges from on-site effluent treatment – sludges from the processing of materials used in baking and confectionery
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 – biodegradable wastes from the processing of the raw materials used in the production of such beverages only (wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa))
02 07 02	wastes from spirits distillation – spent grains, hops and whisky filter sheets and cloths, yeast and yeast like residues, sludge from production process, or malt husks, malt sprouts, yeasts and yeast-like residues only
02 07 04	materials unsuitable for consumption or processing – biodegradable wastes from the processing of the raw materials used in the production of such beverages only (wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa))
04	Wastes from the leather, fur and textile industries
04 02	wastes from the textile industry

Table S2.4 Permitted waste types and quantities for anaerobic digestion of food waste and food soup operation (activity AR3 and AR15 in Table S1.1)

Maximum quantity	Annual throughput shall not exceed 70,000 tonnes aggregated for both activities
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Biodegradable wastes that is significantly contaminated with non-compostable or digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • Wastes containing wood-preserving agents or other biocides and post-consumer wood • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
Waste code	Description
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 (excluding veneers, plastic coatings or laminates) certified to EN 13432 or equivalent certified compostable standard
15 01 03	wooden packaging – virgin timber only
15 01 05	composite packaging meeting EN 13432 or equivalent certified compostable or digestible standard
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 dechromation, decyanidation, neutralisation)
19 02 10	glycerol not designated as hazardous i.e. excludes EWC code 19 02 08
19 06	wastes from anaerobic treatment of waste
19 06 03	liquor from anaerobic treatment of municipal waste (from a process that accepts wastes which are listed in this table only) and made up of previously pasteurised and stabilised batches only
19 06 04	digestate from anaerobic treatment of source segregated biodegradable waste (from a process that accepts wastes which are listed in this table only) and made up of previously pasteurised and stabilised batches only
19 06 05	liquor from anaerobic treatment of animal and vegetable waste (from a process that accepts wastes which are listed in this table only) and made up of previously pasteurised and stabilised batches only
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (previously digested sewage sludge only)
19 08	wastes from waste water treatment plants not otherwise specified

Table S2.4 Permitted waste types and quantities for anaerobic digestion of food waste and food soup operation (activity AR3 and AR15 in Table S1.1)

Maximum quantity	Annual throughput shall not exceed 70,000 tonnes aggregated for both activities
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Biodegradable wastes that is significantly contaminated with non-compostable or digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • Wastes containing wood-preserving agents or other biocides and post-consumer wood • Wastes which contain persistent organic pollutants (POPs) above the thresholds specified within the Persistent Organic Pollutants Regulations 2007. • Wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Species (Amendment etc.) (EU Exit) Regulations 2019. • Manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013. • Pest infested waste.
Waste code	Description
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water (from a process that treats wastes which are listed in this table 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)
20 01 01	paper and cardboard (excluding veneers, plastic coatings or laminates) meeting EN 13432 or equivalent certified compostable or digestible packaging only
20 01 08	biodegradable kitchen and canteen waste containing compostable plastics meeting EN 13432 or equivalent certified compostable or digestible packaging (Category 3 ABPR waste only)
20 01 25	edible oil and fat
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 – only separately collected biodegradable wastes of types listed within this table, Table S2.4
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
Existing medium combustion plant which are engines fuelled on biogas (1 MW to 5 MW)						
Point A25 on site plan in Schedule 7 ST 53348 79402	CHP engine 1 stack 3.636MWth input [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	650 mg/m ³ [note 2]	Average over sample period	Annual	BS EN 14792
			500 mg/m ³ [note 3]			
		Sulphur dioxide	350 mg/m ³ [note 2]			BS EN 14791 or CEN TS 17021 or by calculation based on fuel sulphur
		Sulphur dioxide	162 mg/m ³ [note 3]			
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	No limit set	--	--	BS EN 12619
Point A26 on site plan in Schedule 7 ST 53345 79400	CHP engine 2 stack 3.636MWth input [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	650 mg/m ³ [note 2]	Average over sample period	Annual	BS EN 14792
			500 mg/m ³ [note 3]			
		Sulphur dioxide	350 mg/m ³ [note 2]			BS EN 14791 or CEN TS 17021 or by calculation based on fuel sulphur
		Sulphur dioxide	162 mg/m ³ [note 3]			
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	No limit set	--	--	BS EN 12619
Point A27 on site plan in Schedule 7 ST 53342 79397	CHP engine 3 stack 3.636MWth input [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	650 mg/m ³ [note 2]	Average over sample period	Annual	BS EN 14792
			500 mg/m ³ [note 3]			

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
		Sulphur dioxide	350 mg/m ³ [note 2]			BS EN 14791 or CEN TS 17021 or by calculation based on fuel sulphur
		Sulphur dioxide	162 mg/m ³ [note 3]			
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	No limit set	--	--	BS EN 12619
Point A28 on site plan in Schedule 7 ST 53335 79391	CHP engine 4 stack 3.636MWth input [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	650 mg/m ³ [note 2]	Average over sample period	Annual	BS EN 14792
			500 mg/m ³ [note 3]			
		Sulphur dioxide	350 mg/m ³ [note 2]			BS EN 14791 or CEN TS 17021 or by calculation based on fuel sulphur
		Sulphur dioxide	162 mg/m ³ [note 3]			
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	No limit set	--	--	BS EN 12619
Point A29 on site plan in Schedule 7 ST 53332 79388	CHP engine 5 stack 3.636MWth input [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	650 mg/m ³ [note 2]	Average over sample period	Annual	BS EN 14792
			500 mg/m ³ [note 3]			
		Sulphur dioxide	350 mg/m ³ [note 2]			BS EN 14791 or CEN TS 17021 or by calculation based on fuel sulphur
		Sulphur dioxide	162 mg/m ³ [note 3]			
		Carbon monoxide	1400 mg/m ³			BS EN 15058

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
		Total VOCs	No limit set	--	--	BS EN 12619
Existing medium combustion plant other than engines and gas turbines fuelled on natural gas (1 MW to 5 MW)						
Point A18 on site plan in Schedule 7 ST 53339 79372	Boiler stack 4MWth input [burning natural gas] [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³ [note 3]	Average over sample period	Annual	BS EN 14792
		Carbon Monoxide	No limit set			MCERTS BS EN 15058
Point A19 on site plan in schedule 7 ST 53227 79411	Emergency flare stack [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Average over sample period	[note 4]	BS EN 14792
		Carbon monoxide	50 mg/m ³			BS EN 15058
		Total VOCs	10 mg/m ³			BS EN 12619
Point A22 on site plan in schedule 7 ST 53190 79581	Gas to Grid Biomethane flare stack [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Average over sample period	[note 4]	BS EN 14792
		Carbon monoxide	50 mg/m ³			BS EN 15058
		Total VOCs	10 mg/m ³			BS EN 12619
Point A59 on site plan in schedule 7 ST 53310 79602	Channelled emissions to air from activity AR1 via an odour abatement stack or vent as implemented in line with IC23 and IC24 [note 6]	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis
		Ammonia	20 mg/m ³	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	1,000 OUE/m ³ [note 9]	Average over sample period	Once every 6 months	BS EN 13725
Point A59 on site plan in schedule 7 ST 53310 79602	Channelled emissions to air from activity AR1 from treatment of water-based liquid waste	Hydrogen chloride (HCl)	5 mg/m ³ [note 5]	Average over sample period	Once every 6 months	EN 1911
		TVOC	20 mg/m ³ [note 5] [note 11]	Average over	Once every 6 months	EN 12619

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
				sample period		
Point A24 on site plan in schedule 7 ST 53234 79576	Channelled emissions to air from activity AR1 and AR3 from the biofilter and carbon filter – Gas to grid OCU [note 6]	Ammonia	20 mg/m ³	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
	Channelled emissions to air from activity AR1 and AR3 from treatment of water-based liquid waste	Hydrogen chloride (HCl)	5 mg/m ³ [note 5]	Average over sample period	Once every 6 months	EN 1911
		TVOC	20 mg/m ³ [note 5] [note 11]	Average over sample period	Once every 6 months	EN 12619
	Biogas upgrading plant stack serving activity AR1 and AR3	Vent gas flow rate	No limit set (mg/Nm ³)	Average over sample period	Annual	By measurement or calculation. Method to be agreed in writing with the Environment Agency.
Point A30 on site plan in schedule 7 ST 53333 79357	Channelled emissions to air from the biofilter – Food waste OCU serving activity AR3 and AR15 [note 6]	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis
		Ammonia	20 mg/m ³	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Point A60 on site plan in Schedule 7 ST 53361 79422	Black Start Emergency Generator 0.9 MWth [burning diesel] [note 7]	--	--	--	--	--

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
Pressure relief valves [Point A16 on site plan in schedule 7] ST 53288 79367	Biogas holders serving activity AR1 and AR3	Biogas release and operational events	No limit set	No limit set	Daily inspection	--
Pressure relief valves [Points A20 and A21 on site plan in schedule 7] ST 53344 79491 ST 53347 79488	Propane tanks	Propane release and operational events	No limit set	No limit set	Daily inspection	--
Pressure relief valves [Point A23 on site plan in schedule 7] ST 53185 79572	Gas entry unit/Gas to grid	Biomethane release and operational events	No limit set	No limit set	Daily inspection	--
Pressure relief valves [Points A1 to A15 on site plan in schedule 7] ST 53261 79334 ST 53269 79325 ST 53277 79317 ST 53272 79310 ST 53265 79305 ST 53257 79314 ST 53249 79322 ST 53234 79480 ST 53249 79464 ST 53214 79466 ST 53231 79448 ST 53200 79445 ST 53212 79431 ST 53267 79409 ST 53249 79393	Sludge digesters/digestate storage tanks serving activity AR1	Biogas release and operational events	No limit set	No limit set	Daily inspection	--
Pressure relief valves [Points A31 to A32 on site plan in schedule 7] [note 10] ST 53282 79392 ST 53264 79375	Food waste digesters/digestate storage tanks serving activity AR3	Biogas release and operational events	No limit set	No limit set	Daily inspection	--

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
Pressure relief valve [Point A61 on site plan in schedule 7] ST 53328 79355	Food waste Pasteuriser	Biogas release and operational events	No limit set	No limit set	Daily inspection	--
Limpet chambers [Points A33 to A46 on site plan in schedule 7] ST 53255 79469 ST 53242 79455 ST 53240 79486 ST 53224 79474 ST 53239 79453 ST 53224 79439 ST 53222 79472 ST 53207 79458 ST 53222 79437 ST 53207 79424 ST 53205 79456 ST 53191 79442 ST 53261 79418 ST 53242 79401	Limpet box chambers on sludge digesters serving activity AR1	--	--	--	--	--
Limpet chambers [Points A47 and A48 on site plan in schedule 7] ST 53289 79384 ST 53264 79366	Limpet box chambers on food waste digesters serving activity AR3	--	--	--	--	--
Points A49 to A53 on site plan in schedule 7 ST 53332 79389 ST 53335 79392 ST 53342 79398 ST 53345 79401 ST 53348 79404	Engine housing breather pipes and CHP house pipe	No parameters set	No limit set	--	--	--
Point A54 on site plan in schedule 7 [note 8] ST 53223 79578	Belt dryer stack serving activity AR2	Total VOCs	No limit set	Hourly average over a period of at least 4 hours	Annually	BS EN 12619 or BS EN 13526 depending on concentration

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
						(Permanent sampling access not required)
		Non methane VOCs (as benzene)	No limit set	Hourly average over a period of at least 4 hours	Annually	BS EN 13649:2002 (Permanent sampling access not required)
Point A55 on site plan in schedule 7 [note 8] ST 53167 79530	Drum dryer stack serving activity AR2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	300 mg/m ³	Hourly average over a period of at least 4 hours	Annually	BS EN 14792 (Permanent sampling access not required)
Points A56 and A57 on site plan in schedule 7 [note 8] ST 53200 79545 ST 53204 79541	Pellet silo dust filters serving activity AR2	Particulates	No limit set	Hourly average over a period of at least 4 hours	Annually	BS EN 13284-1 or MDHS 14/3
Point A58 on site plan in schedule 7 [note 8] ST 53202 79537	Pellet bagging plant dust filter serving activity AR2	Particulates	No limit set	Hourly average over a period of at least 4 hours	Annually	BS EN 13284-1 or MDHS 14/3
Vents from tank(s)	Oil/Fuel Storage tank(s)	No parameter set	No limit set	--	--	--
Note 1 – These emission limits are based on normal operating conditions and load - temperature 0°C (273 K); pressure 101.3 kPa and oxygen 5% (for gas engines burning biogas) and oxygen 3% (for emergency flares and medium combustion plants other than engines and gas turbines burning biogas such as boilers). Note 2 – This emission limit applies until 31 December 2029, unless the gas engine is replaced. Note 3 – This emission limit applies from 1 January 2030, unless otherwise advised by the Environment Agency. Note 4 – Monitoring to be undertaken in the event the emergency flares have 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. Note 5 – Monitoring and limits only apply where the substance concerned is identified as relevant in the waste gas inventory IC24. Note 6 – The monitoring of NH₃ and H₂S can be used as an alternative to the monitoring of the odour concentration subject to the outcome of IC24. Note 7 – Operation of the emergency generators shall be limited to less than 50 hours per year for testing purposes only. Note 8 – This emission limit and monitoring requirement applies upon the completion of PO1 and subsequent recommencement of AR2. Note 9 – This emission limit applies upon the completion of IC23. Note 10 – This emission limit and monitoring requirement applies upon the completion of PO2 and subsequent recommencement of AR3. Note 11 – The upper end of the range is 45 mg/Nm³ when the emission load is below 0.5kg/h at the emission point.						

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter [Note 1]	Limit (incl. unit) [Note 1]	Reference Period	Monitoring frequency [Note 2]	Monitoring standard or method
S1 on site plan in schedule 7 emission to the Severn Estuary via Avonmouth WRC ST 53370 79343	Sludge centrate, GBT filtrate, G2G condensate and G2G process water	Oil and grease	No visible oil or grease	--	Weekly	Visual assessment
		Benzene, toluene, ethylbenzene, xylene (BTEX)	--	Spot sample or flow-proportional composite sample	Once every month	EN ISO 15680
		Hydrocarbon oil index (HOI)	10 mg/l		Once every day	EN ISO 9377-2
		Free cyanide (CN ⁻)	0.1 mg/l			EN ISO 14403-1 or EN ISO 14403-2
		Adsorbable organically bound halogens (AOX)	1 mg/l			EN ISO 9562
		Arsenic (As)	0.1 mg/l	Spot sample or flow-proportional composite sample	Once every day	EN ISO 11885, EN ISO 17294-2 or EN ISO 15586
		Cadmium (Cd)	0.1 mg/l			
		Chromium (Cr)	0.3 mg/l			
		Copper (Cu)	0.5 mg/l			
		Lead (Pb)	0.3 mg/l			
		Nickel (Ni)	1 mg/l			
		Zinc (Zn)	2 mg/l			
		Mercury (Hg)	10 µg/l	Spot sample or flow-proportional composite sample	Once every day	EN ISO 17852 or EN ISO 12846
		Manganese (Mn)	--			EN ISO 11885, EN ISO 17294-2 or EN ISO 15586
		Hexavalent chromium (Cr(VI))	0.1 mg/l			EN ISO 10304-3 or

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter [Note 1]	Limit (incl. unit) [Note 1]	Reference Period	Monitoring frequency [Note 2]	Monitoring standard or method
						EN ISO 23913
		PFOA and PFOS	--		Once every six months	--
S2 on site plan in schedule 7 emission to the Severn Estuary via Avonmouth WRC ST 53316 79590	SAS GBT filtrate	Oil and grease	No visible oil or grease	--	Weekly	Visual assessment
		Benzene, toluene, ethylbenzene, xylene (BTEX)	--	Spot sample or flow-proportional composite sample	Once every month	EN ISO 15680
		Hydrocarbon oil index (HOI)	10 mg/l		Once every day	EN ISO 9377-2
		Free cyanide (CN ⁻)	0.1 mg/l			EN ISO 14403-1 or EN ISO 14403-2
		Adsorbable organically bound halogens (AOX)	1 mg/l			EN ISO 9562
		Arsenic (As)	0.1 mg/l	Spot sample or flow-proportional composite sample	Once every day	EN ISO 11885, EN ISO 17294-2 or EN ISO 15586
		Cadmium (Cd)	0.1 mg/l			
		Chromium (Cr)	0.3 mg/l			
		Copper (Cu)	0.5 mg/l			
		Lead (Pb)	0.3 mg/l			
		Nickel (Ni)	1 mg/l			
		Zinc (Zn)	2 mg/l			
		Mercury (Hg)	10 µg/l	Spot sample or flow-proportional composite sample	Once every day	EN ISO 17852 or EN ISO 12846
		Manganese (Mn)	--			EN ISO 11885, EN ISO 17294-2 or EN ISO 15586

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter [Note 1]	Limit (incl. unit) [Note 1]	Reference Period	Monitoring frequency [Note 2]	Monitoring standard or method
		Hexavalent chromium (Cr(VI))	0.1 mg/l			EN ISO 10304-3 or EN ISO 23913
		PFOA and PFOS	--		Once every six months	--
S4 on site plan in schedule 7 emission to the Severn Estuary via Avonmouth WRC ST 53345 79351	Condensate engine room basement waters, G2G upgrading waters	Oil and grease	No visible oil or grease	--	Weekly	Visual assessment
		Benzene, toluene, ethylbenzene, xylene (BTEX)	--	Spot sample or flow-proportional composite sample	Once every month	EN ISO 15680
		Hydrocarbon oil index (HOI)	10 mg/l		Once every day	EN ISO 9377-2
		Free cyanide (CN ⁻)	0.1 mg/l			EN ISO 14403-1 or EN ISO 14403-2
		Adsorbable organically bound halogens (AOX)	1 mg/l			EN ISO 9562
		Arsenic (As)	0.1 mg/l	Spot sample or flow-proportional composite sample	Once every day	EN ISO 11885, EN ISO 17294-2 or EN ISO 15586
		Cadmium (Cd)	0.1 mg/l			
		Chromium (Cr)	0.3 mg/l			
		Copper (Cu)	0.5 mg/l			
		Lead (Pb)	0.3 mg/l			
		Nickel (Ni)	1 mg/l			
		Zinc (Zn)	2 mg/l			
		Mercury (Hg)	10 µg/l	Spot sample or flow-proportional composite sample	Once every day	EN ISO 17852 or EN ISO 12846
		Manganese (Mn)	--			EN ISO 11885, EN ISO 17294-2 or EN ISO 15586

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter [Note 1]	Limit (incl. unit) [Note 1]	Reference Period	Monitoring frequency [Note 2]	Monitoring standard or method
		Hexavalent chromium (Cr(VI))	0.1 mg/l			EN ISO 10304-3 or EN ISO 23913
		PFOA and PFOS	--		Once every six months	--
S5 on site plan in schedule 7 emission to the Severn Estuary via Avonmouth WRC ST 53292 79333	Food waste centrate	-- [Note 3]	-- [Note 3]	-- [Note 3]	-- [Note 3]	-- [Note 3]
S6 on site plan in schedule 7 emission to River the Severn Estuary via via Avonmouth WRC ST 53224 79542	Discharge of water from activity AR2 in table S1.1	-- [Note 4]	-- [Note 4]	-- [Note 4]	-- [Note 4]	-- [Note 4]
S7 on site plan in schedule 7 emission to River the Severn Estuary via via Avonmouth WRC ST 53141 79515	Discharge of water from activity AR2 in table S1.1	-- [Note 4]	-- [Note 4]	-- [Note 4]	-- [Note 4]	-- [Note 4]
Note 1 – Monitoring and limits only apply where the substance concerned is identified as relevant in the waste water inventory as determined by improvement condition IC19a and IC19b Note 2 – Monitoring frequency as specified unless the Environment Agency has agreed in writing other alternative appropriate monitoring frequencies. Note 3 – Emission limits and monitoring requirements to be set following completion of PO2 and IC26. Note 4 – Emission limits and monitoring requirements to be set following completion of PO1.						

Table S3.3 Process monitoring requirements – For activities AR2 and AR3 monitoring requirements shall only apply once PO1 and PO2 have been completed				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Digester feed (digestion process)	pH	As described in site operating techniques	As described in site operating techniques	Process monitoring to be recorded using a SCADA system where relevant.
	Alkalinity			
	Temperature			
	Hydraulic loading rate			
	Organic loading rate			
	Volatile fatty acids concentration			
	Ammonia			
	Liquid /foam level			
Biogas in digester & biogas storage holders	Flow	Continuous	In accordance with EU weights and measures Regulations	Process monitoring to be recorded using a SCADA system where relevant.
	Methane	Continuous	None specified	Gas monitors to be calibrated every 6 months or in accordance with the manufacturer's recommendations.
	CO ₂	Continuous	None specified	
	O ₂	Continuous	None specified	
	Hydrogen sulphide	Daily	None specified	
	Pressure	Continuous	None specified	
Digestate batch	Volatile fatty acids concentration	One sample at the end of each batch (hydraulic retention time) cycle.	As described in site operating techniques	--
	Ammonia			
Digesters and storage tanks	Integrity checks	Weekly	Visual assessment	In accordance with design specification and tank integrity checks.
Digesters	Agitation /mixing	Continuous	Systems controls	Records maintained in daily operational records.
	Tank capacity and sediment assessment	Once every 5 years from date of commission	Non-destructive pressure testing	In accordance with design specification and

Table S3.3 Process monitoring requirements – For activities AR2 and AR3 monitoring requirements shall only apply once PO1 and PO2 have been completed

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
			integrity assessment every 5 years or as specified by manufacturers technical specification.	tank integrity checks.
Waste reception building or area; Digesters and storage tanks	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary.
Diffuse emissions from all sources identified in the Leak Detection and Repair (LDAR) programme	VOCs including methane	Every 6 months or otherwise agreed in accordance with the LDAR programme	‘Sniffing’ and/or Optical Gas Imaging techniques in accordance with BS EN 15446 & BS EN 17628	Monitoring points as specified in a DSEAR risk assessment and LDAR programme. Limit as agreed with the Environment Agency as a percentage of the overall gas production.
CHP engine stacks	VOCs including methane	Annually	BS EN 12619	Total annual VOCs emissions from the CHP engines to be calculated and submitted to the Environment Agency.
	Exhaust gas temperature		Traceable to National Standards	--
	Exhaust gas pressure		Traceable to National Standards	--
	Exhaust gas water vapour content		BS EN 14790-1	Unless gas is dried before analysis of emissions.
	Exhaust gas oxygen		BS EN 14789	--
	Exhaust gas flow		BS EN 16911-1	--
Meteorological conditions	Wind speed, air temperature, wind direction	Continuous	Method as specified in	Conditions to be recorded in

Table S3.3 Process monitoring requirements – For activities AR2 and AR3 monitoring requirements shall only apply once PO1 and PO2 have been completed

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
			management system	operational diary and records. Equipment shall be calibrated on a 4 monthly basis, in accordance with manufacturer's recommendations or as agreed in writing by the Environment Agency.
Emergency flares	Operating hours	Continuous	Recorded duration and frequency. Recording using a SCADA system or similar system	Date, time and duration of use of auxiliary flare shall be recorded.
	Quantity of gas sent to emergency flare			Quantity can be estimated from gas flow composition, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions.
Pressure relief valves and vacuum systems	Gas pressure	Continuous	Recording using a SCADA system	Continuous gas pressure shall be monitored.
	Re-seating	Weekly inspection	Visual	Operator must ensure that valves are re-seated after release in accordance with the manufacturer's design.
	Inspection, maintenance, calibration, repair and validation	Following foaming or overtopping or at 3 yearly intervals whichever is sooner	Written scheme of examination in accordance with condition 1.1.1	After a foaming event or sticking, build-up of debris, obstructions or damage, operator must ensure that pressure relief valve function remains within designed gas pressure in

Table S3.3 Process monitoring requirements – For activities AR2 and AR3 monitoring requirements shall only apply once PO1 and PO2 have been completed

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				accordance with the manufacturer's design by suitably trained and qualified personnel.
	Inspection, calibration and validation report	In accordance with design and construction specifications or after over topping or foaming event	Written scheme of examination in accordance with condition 1.1.1	Operator must ensure that valves are re-seated after release, after a foaming event or sticking, build-up of debris, obstructions or damage. Operator must ensure that PRV function remains within designed operation gas pressure in accordance with the manufacturer's design by suitably trained/qualified personnel. Inspection, calibration and validation report. In accordance with industry Approved Code of Practice
Storage tanks	Volume	Daily	Visual or flow meter measurement	Records of volume must be maintained.
Drum dryer unit	Hours of operation	Continuous	Not applicable	Not applicable

Table S3.4 Process monitoring requirements – odour abatement (For emission point A59 monitoring will only be applicable following completion of IC23)				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Odour abatement plant				
Open biofilters				
Biofilter at emission point A59 subject to the confirmation of abatement via IC23.	Surface condition (signs of vegetation and channelling)	Daily	Visual assessment	Odour abatement plant shall be regularly checked and maintained to ensure appropriate temperature and moisture content.
	Gas temperature – inlet	Daily	Temperature probe / Traceable to national standards	
	Biofilter media moisture	Daily	Moisture meter, Grab test, oven drying or recognised industry method	Odour abatement plant shall be managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations.
	Thatching /compaction	Weekly	Back pressure	
	Gas flow rate – inlet	Continuous	Gas flow meter	Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	pH (biofilter drainage effluent)	Daily	pH metre or litmus paper	
	Efficiency assessment	Annual	Media health, air-flow distribution and emission removal efficiency (BS EN 13725 for odour removal)	
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	As agreed in the odour management plan and approved by the Environment Agency	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.

Table S3.4 Process monitoring requirements – odour abatement (For emission point A59 monitoring will only be applicable following completion of IC23)				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	As agreed in the odour management plan and approved by the Environment Agency	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Odour concentration – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	BS EN 13725	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
Closed biofilters				
Biofilter at emission point A24 and A30. Biofilter at emission point A59 subject to the confirmation of abatement via IC23.	Gas temperature – inlet and outlet	Daily	Temperature probe / Traceable to national standards	Odour abatement plant shall be regularly checked and maintained to ensure appropriate temperature and moisture content.
	Biofilter media moisture	Daily	Moisture meter, Grab test, oven drying or recognised industry method	
	Thatching /compaction	Weekly	Back pressure	Odour abatement plant shall be managed in accordance with permit condition

Table S3.4 Process monitoring requirements – odour abatement (For emission point A59 monitoring will only be applicable following completion of IC23)				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	3.3, the odour management plan and manufacturer's recommendations. Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	pH (biofilter drainage effluent)	Daily	pH metre or litmus paper	
	Efficiency assessment	Annual	Media health, air-flow distribution and emission removal efficiency (BS EN 13725 for odour removal)	
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	CEN TS 13649 for sampling NIOSH 6013 for analysis	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	EN ISO 21877	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Odour concentration – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	BS EN 13725	Action levels to be agreed on completion of IC24 as approved in writing by the

Table S3.4 Process monitoring requirements – odour abatement (For emission point A59 monitoring will only be applicable following completion of IC23)				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
Scrubbers (water/chemical/dry)				
Scrubber at emission point A59 subject to the confirmation of abatement via IC23.	Gas temperature – inlet and outlet	Continuous	Temperature probe / Traceable to national standards	Odour abatement plant shall be regularly checked and maintained to ensure appropriate temperature and moisture content.
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	
	Moisture content or humidity – inlet and outlet (for dry scrubbers only)	Daily	Moisture meter	
	Moisture content or humidity – outlet (for wet scrubbers if used before other abatement systems)	Daily	Moisture meter	Odour abatement plant shall be managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations.
	Back pressure	Weekly	Pressure differential using sensors	
	Efficiency assessment	Annual	Emission removal efficiency (BS EN 13725 for odour removal)	
	pH scrubber solution (pre-abatement)	Continuous	pH meter	Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	pH scrubber solution (post-abatement)	Continuous	pH meter	
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	CEN TS 13649 for sampling NIOSH 6013 for analysis	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency.

Table S3.4 Process monitoring requirements – odour abatement (For emission point A59 monitoring will only be applicable following completion of IC23)				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	EN ISO 21877	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
Carbon filters				
Carbon filter at emission point A24. Carbon filter at emission point A59 subject to the confirmation of abatement via IC23.	Carbon bed temperature – inlet and outlet	Continuous	Temperature probe	Odour abatement plant shall be managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations.
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	
	Moisture or humidity	Daily	Moisture meter	
	Back pressure	Weekly	Recognised industry method	
	Efficiency assessment	Annual	Emission removal efficiency (BS EN 13725 for odour removal)	Carbon filter(s) to be replaced in accordance with manufacturer's recommendations. Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.

Table S3.4 Process monitoring requirements – odour abatement (For emission point A59 monitoring will only be applicable following completion of IC23)				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	CEN TS 13649 for sampling NIOSH 6013 for analysis	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	EN ISO 21877	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Odour concentration – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	BS EN 13725	Action levels to be agreed on completion of IC24 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.

Table S3.5 Emissions to sewer, effluent treatment plant or other transfers off-site – Monitoring points			
Effluent(s) and discharge point(s)	Monitoring type	Monitoring point NGR	Monitoring point reference
S1 on site plan in schedule 7 emission to the Severn Estuary [via Avonmouth WRC]	Effluent monitoring	ST 53370 79343	Point S1 [Discharge to WRC] in Schedule 7
S2 on site plan in schedule 7 emission to the Severn Estuary [via Avonmouth WRC]	Effluent monitoring	ST 53316 79590	Point S2 [Discharge to WRC] in Schedule 7
S4 on site plan in schedule 7 emission to the Severn Estuary [via Avonmouth WRC]	Effluent monitoring	ST 53345 79351	Point S4 [Discharge to WRC] in Schedule 7
S5 on site plan in schedule 7 emission to the Severn Estuary [via Avonmouth WRC]	Effluent monitoring	ST 53292 79333	Point S5 [Discharge to WRC] in Schedule 7
S6 on site plan in schedule 7 emission to the Severn Estuary [via Avonmouth WRC]	Effluent monitoring	ST 53224 79542	Point S6 [Discharge to WRC] in Schedule 7
S7 on site plan in schedule 7 emission to the Severn Estuary [via Avonmouth WRC]	Effluent monitoring	ST 53141 79515	Point S7 [Discharge to WRC] in Schedule 7

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 from CHP engines and boilers Parameters as required by condition 3.5.1.	A18, A25, A26, A27, A28 and A29	Every 12 months	1 January
Emissions to air from odour abatement plant Parameters as required by condition 3.5.1.	A59, A24 and A30	Every 6 months for A24 and A30 Upon completion of IC23 for A59	1 January, 1 July Upon completion of IC23 for A59
Emissions to air from abatement systems for waste gas treatment plant Reporting only applies where the substance concerned is identified as relevant in the waste gas inventory IC24 (for emission points A59, A24 and A30) Parameters as required by condition 3.5.1.	A59, A24, A30, A54, A55, A56, A57 and A58	Every 6 months for A24 and A30 Upon completion of IC23 for A59. Upon completion of PO1 for A54, A55, A56, A57 and A58	1 January, 1 July Upon completion of IC23 for A59. Upon completion of PO1 for A54, A55, A56, A57 and A58
Emissions to sewer Parameters as required by condition 3.5.1	S1, S2, S4, S5, S6 and S7	Upon completion of IC19a and IC19b for S1 – S4 Upon completion of IC26 for S5 Upon completion of P01 for S6 and S7	1 January Upon completion of IC19a and IC19b for S1 – S4 Upon completion of IC26 for S5 Upon completion of P01 for S6 and S7
Process monitoring – digester tank integrity Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.3	Every 5 years from the date of commissioning or as per the manufacturer's recommendation, whichever is sooner	1 January
Process monitoring – under and over pressure relief systems Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.3	Every 12 months Yearly summary report of over-pressure and under-pressure events detailing mass balance release	1 January

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Process monitoring – pressure relief systems - leak detection and repair (inspection, calibration and maintenance) Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.3	Every 3 years	1 January
Process monitoring – leak detection and repair surveys Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.3	Every 12 months LDAR report to be submitted annually	1 January
Process monitoring – use of emergency flare Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.3	Every 12 months	1 January
Non-compostable contamination removal efficiency Parameters as required by conditions 2.3.4 and 2.3.7	--	Every 12 months Yearly report of detailing contamination removal efficiency and progress with plastic reduction contamination	1 January
Total annual VOCs emissions from gas engines (calculated)	As specified in schedule 3 table S3.3	Every 12 months	1 January

Table S4.2 Annual production/treatment	
Parameter	Units
Electricity generated	MWh
Biomethane generated	tonnes or m ³
Liquid digestate by activity	m ³
Solid digestate by activity	tonnes
Recovered outputs by activity	tonnes or m ³
Sewage sludge imported to the Pellet Drying Plant (Upon completion of PO1)	tonnes
Sludge pellets exported from the Pellet Drying Plant (Upon completion of PO1)	tonnes
Waste imported to the Food Waste Treatment Plant	tonnes
Non digestible residues exported from the Food Waste Treatment Plant	tonnes
Digestate cake exported from the Food Waste Treatment Plant (upon completion of PO2)	tonnes

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Water usage	Annually	tonnes or m ³
Energy usage	Annually	MWh

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Raw material usage	Annually	tonnes or m ³
Emergency flare operation	Annually	hours
Electricity exported	Annually	MWh
Biomethane exported	Annually	tonnes or m ³
CHP engine usage	Annually	hours
CHP engine efficiency	Annually	%
Auxiliary boiler usage	Annually	hours
Drum dryer operation (Upon completion of PO1)	Annually	hours

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	19/10/2026
Process monitoring	Form process 1 or other form as agreed in writing by the Environment Agency	19/10/2026
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	19/10/2026
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	19/10/2026
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	19/10/2026
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	19/10/2026
Waste returns	E-waste Return Form or other form as agreed in writing by the Environment Agency	--

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	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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.

“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.

“appropriate abatement system” means the appropriate treatment technique for channelled emissions to air defined in 6.6.1 ‘Channelled emissions to air’ from the ‘Best Available Techniques (BAT) Reference Document for Waste Treatment’.

“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.

“Best available techniques” means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole:

(a) ‘techniques’ includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;

(b) ‘available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;

(c) ‘best’ means most effective in achieving a high general level of protection of the environment as a whole.

“Biodegradable” means a material is capable of undergoing biological anaerobic or aerobic degradation leading to the production of CO₂, H₂O, methane, biomass, and mineral salts, depending on the environmental conditions of the process.

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

“BREF” means Best Available Techniques (BAT) Reference Document.

“Capacity” means the potential capacity and not historical or actual production levels or throughput. This means that the designed capacity is the maximum rate at which the site can operate. Biological treatment of waste usually takes place over more than one day, so the physical daily capacity can be calculated by dividing the maximum quantity of waste that could be subject to biological treatment at any one time by the minimum residence time. For in-vessel composting, the residence time for sanitisation should be calculated separately and then aggregated to the complete composting time. Further guidance [‘RGN2: Understanding the meaning of regulated facility Definition of regulated facility’](#) is available.

“channelled emissions” means the emissions of pollutants into the environment through any kind of duct, pipe, stack, etc. This also includes emissions from open top biofilters.

“combined heat and power” (CHP) or Cogeneration means the simultaneous generation in one process of thermal energy and electrical or mechanical energy.

“competent persons and resources” means that a technically competent person accredited to a relevant scheme must attend site and record their attendance, and that all roles and responsibilities are clearly stated in the management systems along with records of operatives’ training. See the guidance on the [level of competence and duration of attendance](#)

“compliance date” means 01/01/2025 for existing MCPs with net rated thermal input of greater than 5MWth or 01/01/2030 for existing MCPs with a net rated thermal input of less than or equal to 5MWth.

“compost” means solid particulate material that is the result of composting, which has been sanitised and stabilised, and which confers beneficial effects when added to soil, used as a component of growing media or used in another way in conjunction with plants.

“compostable plastics” means waste containing packaging or non-packaging items (or both) with a valid certificate of conformity to EN 13432 or an equivalent standard for compostable and digestible items, the certificate issued by an independent certification body capable of fully biodegrading by a biological process to create compost or digest.

“composting” means the managed biological decomposition of biodegradable waste organic materials, under conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat and that result in compost.

“composting batch” means an identifiable quantity of material that progresses through the composting system and when fully processed has similar characteristics throughout. For composting systems that operate on a continuous- or plug-flow basis, batches will be taken to mean a series of “portions of production”.

“direct discharge” means discharge to a receiving water body.

“diffuse emissions” mean non-channelled emissions (e.g. of dust, organic compounds, odour) which can result in ‘area’ sources (e.g. tanks) or ‘point’ sources (e.g. pipe flanges). This also includes emissions from open-air windrow composting.

“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.

“DSEAR” means the Dangerous Substances and Explosive Atmospheres Regulations 2002.

“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 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“existing medium combustion plant” means an MCP which was put into operation before 20 December 2018.

“generator” means any combustion plant which is used to generate electricity, excluding mobile, unless it is connected to the national grid.

“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.

“Indirect discharge” means a discharge to a sewer or off-site waste water treatment plant.

“Industrial Emissions Directive” and/or “IED” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“Leak detection and repair (LDAR) programme” means a structured approach to reduce fugitive emissions of organic compounds by detection and subsequent repair or replacement of leaking components. Currently, sniffing (described by EN 15446) and optical gas imaging methods are available for the identification of leaks as set out in BAT 14 and section 6.6.2 of the Waste Treatment BAT Conclusions.

“limited operating hours MCP” means an MCP that meets the requirements of paragraph 8 of Part 2 of Schedule 25A of the Environmental Permitting Regulations.

“maturation” means optional period of treatment or storage of separated fibre digestate under predominantly aerobic conditions.

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

“medium combustion plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“new medium combustion plant” means an MCP which was put into operation after 20 December 2018. This includes replacement MCP and Generators.

“operating hours” means the time, expressed in hours, during which a combustion plant is operating and discharging emissions into the air, excluding start-up and shut-down periods

“operational area” means any part of a facility used for the handling, storing and treatment of waste.

“operator” means in relation to a regulated facility:

- (a) the person who has control over the operation of the regulated facility,
- (b) if the regulated facility has not yet been put into operation, the person who will have control over the regulated facility when it is put into operation, or
- (c) if a regulated facility authorised by an environmental permit ceases to be in operation, the person who holds the environmental permit

“pests” means Birds, Vermin and Insects.

“PFOA” means Perfluorooctanoic acid.

“PFOS” means Perfluorooctanesulphonic acid.

“pollution” means emissions as a result of human activity which may—

- (a) be harmful to human health or the quality of the environment,
- (b) cause offence to a human sense,
- (c) result in damage to material property, or
- (d) impair or interfere with amenities and other legitimate uses of the environment.

“POPs Regulations” means the Persistent Organic Pollutants Regulations SI 2007 No.3106. Thresholds for Persistent Organic Pollutants are specified in Identify and classify waste containing persistent organic pollutants published on 19 December 2022 and updated on 8 May 2025.

“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.

“sanitisation” means the actively managed and intensive stage of composting, lasting for at least 5 days, characterised by high oxygen demand and temperatures of over 55°C, during which biological processes, together with conditions in the composting mass, eradicate human and animal pathogens or reduce them to acceptably low levels. The operator also needs to meet ABPR requirements.

“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.

“specified generator” means a group of generators other than excluded between 1 and 50 megawatts or less than 50 megawatts as defined in Schedule 25B(2) of SI 2018 No.110 of the EPR.

“stable” and/or “stabilised” means the degree of processing and biodegradation at which the rate of biological activity has slowed to an acceptably low and consistent level and will not significantly increase under favourable, altered conditions.

“VOC” means Volatile organic compounds as defined in Article 3(45) of Directive 2010/75/EU – ‘volatile organic compound’ means any organic compound as well as the fraction of creosote, having at 293.15K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use.

“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” and/or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

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 and 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.

“year” means a calendar year ending on 31 December.

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Annex 1 of MCP

1. Rated thermal input (MW) of the medium combustion plant.	CHPs 1-5 – 3.636MWth (each) Auxiliary Boiler – 4MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	CHP engines fuelled on biogas Auxiliary Boiler fuelled on natural gas
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Gaseous fuels other than natural gas Natural gas
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	CHPs 1-5 – August 2002 Auxiliary Boiler – October 2016
5. Sector of activity of the medium combustion plant or the facility in which it is applied (NACE code).	37.00
6. Expected number of annual operating hours of the medium combustion plant and average load in use.	CHPs 1-5 - 8,760 hours per year Auxiliary Boiler - 8,760 hours per year
7. Where the option of exemption under Article 6(3) or Article 6(8) is used, a declaration signed by the operator that the medium combustion plant will not be operated more than the number of hours referred to in those paragraphs.	N/A
8. Name and registered office of the operator and, in the case of stationary medium combustion plants, the address where the plant is located.	Company name and registered office: Wessex Water Services Limited Wessex Water Operations Centre, Claverton Down Road, Claverton Down, Bath, BA2 7WW Address where the plant is located: Avonmouth Bioresources Centre, Kings Weston Lane, Bristol, BS11 0YS

END OF PERMIT