Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Anglian Water Services Limited

Whitlingham Sludge Treatment Centre (STC)
Kirby Bedon Road
Trowse
Norwich
Norfolk
NR14 8TZ

Variation application number

EPR/LP3499SY/V006

Consolidated permit number

EPR/LP3499SY

Whitlingham Sludge Treatment Centre (STC) Permit number EPR/LP3499SY

Introductory note

This introductory note does not form a part of the permit

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 at Whitlingham Sludge Treatment Centre (STC) are existing but will be brought into environmental regulation for the first time and are required to operate using BAT.

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

The following notice gives notice of the variation of environmental permits EPR/LP3499SY, EPR/RP3435GB and EPR/ZP3437EF referred to in the status logs below and the replacement of those permits with a consolidated environmental permit EPR/LP3499SY/V006

EPR/LP3499SY/V005 allowed for the operation of a standard rules permit SR2008No19 for a non-hazardous sludge biological chemical and physical treatment site up to 250kte.

EPR/RP3435GB/V003 allowed for the combustion of biogas in three combined heat and power (CHP) engines and one boiler.

EPR/ZP3437EF/A001 allowed the site to operate as a green waste composing and phytoconditioning site with the temporary storage of digested cake under a Section S5.4 A(1)(b)(i) activity for the recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving biological treatment.

This variation amends the current standard rules permit SR2008No19 for a non-hazardous sludge biological chemical and physical treatment to a S5.4 Part A (1)(b)(i) scheduled activity. The CHP and boilers under permit EPR/RP3435GB will become directly associated activities to the section S5.4 Part A (1)(b)(i) scheduled activity and EPR/RP3435GB will cease. Permit EPR/ZP3437EF has been varied to remove the Section S5.4 A(1)(b)(i) activity and include two waste activities for the temporary storage of raw, limed and digested cake, and the import of waste to the head of the works. The land as part of this permit will not be surrendered, only the activity.

Permit EPR/LP3499SY will be the lead permit, Permits EPR/RP3435GB and EPR/ZP3437EF will cease.

Brief description of the process

Whitlingham STC is located within Whitlingham WRC Waste water Treatment Works (WwTW) to the east of Norwich with the River Yare running to the west and north of the site. The national grid reference (NGR) for the site is TG 27880 07554.

Whitlingham Sludge Treatment Centre (STC) will accept up to 269,000 tonnes per annum of indigenous and imported waste sludge.

Sewage sludge produced at Whitlingham WRC (WwTW) (indigenous sludge) and sewage sludge produced at Anglian water satellite sites (imported sludge) is received at one of three strain presses where it is screened to remove any contraries. Following screening, sludge is then passed to the centrifuges where it is thickened before being transferred to the thermal hydrolysis plant (THP).

Undigested raw sludge cake can also be imported to Whitlingham STC via a dedicated cake import facility. Raw cake is imported via bulk tipper trucks and received in a cake reception building before being tipped into a reception bunker. The sludge is immediately transferred by conveyors and pumps into a storage silo. From the storage silo the cake is diluted with final effluent before being pumped to blend with the other sludge in the pre-thermal hydrolysis plant (THP) silo. Liquor produced in the thickening and dewatering process is discharged to the Whitlingham WRC (WwTW) (which does not form part of the permit boundary).

The combined sludge is then fed into CAMBI THP with the application of temperature and pressure used to enhance the digestion of the sludge, in an enclosed system. The CAMBI THP process includes three primary digesters, one pulper tank, one CAMBI pressure vessel and a THP cake silo before it is then transferred on to the flash tank. Compressed condensate from the CAMBI reactors is fed directly into the digester process.

From the THP process, sludge is transferred to one of two anaerobic digesters (AD). The treatment of sludge in a biological AD process is a section 5.4 Part A (1)(b)(i) scheduled activity of the above regulations. This variation adds the section 5.4 Part A (1)(b)(i) scheduled activity to the permit and consolidates the waste activity.

Biogas produced as part of the AD process is stored in the roof of the primary digesters and one biogas storage holder prior to being used for combustion in two combined heat and power (CHP) engines (with a thermal input of 4.6 MWth and 3.0 MWth), and one dual fuel boiler (with a thermal input of 4.4 MWth) operated on biogas and gas oil. The electrical energy and heat produced, is used to power on-site processes and provide heat to the sludge treatment process, with some exported to the grid. Biogas condensate produced from the CHP and boiler is discharged to sewer and returned to the WRC as an indirect emission to water.

In the event of emergency, biogas is flared in a waste gas burner.

Digested sludge is transferred to one of two secondary digester tanks, before being transferred to a post digestion storage tank. Digested sludge is pumped forward from a post digestion storage tank to dewatering presses where the final treated cake is produced. The dewatered cake is stored on storage pads prior to being exported offsite for land spreading under the Sludge (Use in Agriculture) Regulations (SUiAR) and undergoes quality assurance under the Biosolids Assurance Scheme (BAS). Liquors from the dewatering press process are pumped to a liquor tank before being discharged to the WRC.

The site also operates four Odour Control Units (OCU) which include:

- OCU 1 at emission point A11 which consists of a biofilter & carbon filter and serves the P&I tank & post digestion assets
- OCU 2 at emission point A12 which consists of a wet chemical scrubber and serves the Klampress Building

- OCU 3 at emission point A13 which consists of a biofilter & carbon filter and serves the cake reception
- OCU 4 at emission point A14 which consists of a carbon filter and serves the liquid import tank

This permit also allows a further two waste operations, the first relates to the import of sludge and liquid waste to the head of works. Effluents and waste waters in the form of sludge and liquid only, will be delivered by tanker to the head of the works for discharge directly into the head of the works for treatment under the UWWTR. This activity involves discharge to the main WRC. The discharge is classed as an indirect emission to water. In this case, the River Yare. We have imposed improvement conditions in the permit to determine the impact on the River Yare from the tankered wastes imported and subsequently discharged to the WRC.

The second allows a waste operation relating to the temporary storage of digested, limed and raw cake. The digested, limed and raw cake will be stored separately in designated area/s on the cake pad prior to transfer off site. Cake that is temporarily stored on site shall only undergo treatment to achieve a correct moisture concentration prior to onward spreading to land. The storage of non-waste straw and lime is not permitted on site.

There is one Special Protection Area (SPA) situated approximately 3.5km east from the site, two Special Areas of Conservation (SAC), and one Ramsar site within relevant screening distances of the installation.
The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status log of permit A:		
Description	**Date**	**Comments**
Application received (EAWML 100310)	Duly made 04/04/2008	Application for Non-hazardous Sludge Chemical and Physical Treatment Site
Permit determined (EAWML 100310)	22/07/2009	Permit issued to Anglian Water Services Limited.
Variation determined. EPR/LP3499SY/V002 (formally EAWML 100310)	10/06/2010	Notice of variation issued to vary the fixed condition licence to a facility subject to standard rules SR2008No19_250kte and to increase the area of the standard facility.
Variation determined. EPR/LP3499SY/V003	05/01/2011	Notice of variation issued to increase the area of the standard facility.
Application EPR/LP3499SY/V004 (variation)	Application received 27/10/2014	Application to consolidate permit with EPR/RP3435GB.
Application EPR/LP3499SY/V004 withdrawn	Withdrawn 19/11/2014	Application withdrawn by operator
Application EPR/LP3499SY/V005 (variation)	Duly made 18/03/2015	Application to increase the area of the standard facility.
Variation determined. EPR/LP3499SY	02/04/2015	Notice of variation issued
Application EPR/LP3499SY/V006 (variation and consolidation with, EPR/RP3435GB and EPR/ZP3437EF)	Duly made 26/08/2021	Application to vary the permit to a installation activity from a standard rules waste activity with the addition of an section 5.4 Part A (1)(a)(i) scheduled activity (anaerobic digestion facility with combustion of biogas at a waste sewage sludge treatment site) with the consolidation of permits EPR/RP3435GB and EPR/ZP3437EF
Additional information received	21/12/2021	Response to Schedule 5 notice dated 15/12/2021

Status log of permit A:		
Description	**Date**	**Comments**
Additional information received	28/02/2025	Response to request for information dated 13/02/2025
Variation determined and consolidation issued. EPR/LP3499SY/V006	26/03/2025	Varied and consolidated permit issued in modern format to Anglian Water Services Limited

Status log of permit B: EPR/RP3435GB		
Description	**Date**	**Comments**
Permit determined EAWML 400037	16/07/2009	Permit issued to Anglian Water Services Limited.
Agency Variation EPR/RP3435GB/V002 (variation)	03/04/2013	Agency variation to implement the changes introduced by IED
Application EPR/RP3435GB/V003 (variation)	Duly made 15/12/2014	Application to include a 1.2mwe CHP, new waste heat boiler, a dedicated flue stack and a new site plan.
Variation determined	26/02/2025	Notice of variation issued
Application EPR/LP3499SY/V006 (variation and consolidation with , EPR/RP3435GB and EPR/ZP3437EF)	Duly made 26/08/2021	Application to vary the permit to a installation activity from a standard rules waste activity with the addition of an section 5.4 Part A (1)(a)(i) scheduled activity (anaerobic digestion facility with combustion of biogas at a waste sewage sludge treatment site) with the consolidation of permits EPR/RP3435GB and EPR/ZP3437EF
Variation determined and consolidation issued. EPR/LP3499SY/V006	26/03/2025	Varied and consolidated permit issued in modern format to Anglian Water Services Limited

Status log of permit C: EPR/ZP3437EF		
Description	**Date**	**Comments**
Application EPR/ZP3437EF	Duly made 14/09/2012	Application for composting facility
Additional information requested 05/11/2012	Received 28/11/2012	Odour Management Plan - amended
Additional information requested	Received 13/02/2013	Air modelling data files and revised plan (final version)
Additional information requested	Received 11/07/2013	Odour Management Plan (final version 4a)
Permit EPR/ZP3437EF determined	05/06/2014	Permit issued to Anglian Water Services Limited
Application EPR/LP3499SY/V006 (variation and consolidation with , EPR/RP3435GB and EPR/ZP3437EF)	Duly made 26/08/2021	Application to vary the permit to a installation activity from a standard rules waste activity with the addition of an section 5.4 Part A (1)(a)(i) scheduled activity (anaerobic digestion facility with combustion of biogas at a waste sewage

Status log of permit C: EPR/ZP3437EF		
Description	**Date**	**Comments**
		sludge treatment site) with the consolidation of permits EPR/RP3435GB and EPR/ZP3437EF
Variation determined and consolidation issued. EPR/LP3499SY/V006	26/03/2025	Varied and consolidated permit issued in modern format to Anglian Water Services Limited

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/LP3499SY
EPR/RP3435GB
EPR/ZP3437EF

Issued to

Anglian Water Services Limited ("the operator")

whose registered office is

Lancaster House
Lancaster Way
Ermine Business Park
Huntingdon
Cambridgeshire
PE29 6YJ

company registration number 02366656

to operate a regulated facility at

Whitlingham Sludge Treatment Centre (STC)
Kirby Bedon Road
Trowse
Norwich
Norfolk
NR14 8TZ

to the extent set out in the schedules.

The notice shall take effect from 26/03/2025

The number of the consolidated permit is EPR/LP3499SY.

Name	Date
Maxine Evans	**26/03/2025**

Authorised on behalf of the Environment Agency

Schedule 1 – changes in the permit

All conditions have been varied by the consolidated permit 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/LP3499SY

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/LP3499SY/V006 authorising,

Anglian Water Services Limited ("the operator"),

whose registered office is

Lancaster House
Lancaster Way
Ermine Business Park
Huntingdon
Cambridgeshire
PE29 6YJ

company registration number 02366656

to operate an installation and waste operation at

Whitlingham Sludge Treatment Centre (STC)
Kirby Bedon Road
Trowse
Norwich
Norfolk
NR14 8TZ

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

Name	Date
Maxine Evans	**26/03/2025**

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 AR10), 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 AR10), 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 AR10), 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 AR10), 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 AR10), 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 (AR4):

(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 operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table 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 IC1below.

3.2.5 Subject to condition 3.2.6, below, the operator shall use buffer storage to store waste water and digestate to prevent waste water or digestate being discharged off site during the receiving waste water treatment works storm overflow operating, unless other appropriate measures to prevent or where that is not practicable, to minimise, emissions during waste water treatment works storm overflow operation, 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 IC1 below.

3.2.7 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;

(c) bioaerosols monitoring specified in tables S3.5

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, S3.4, S3.5 and S3.6 unless otherwise agreed in writing by the Environment Agency.

3.5.5 For the following activities referenced in Schedule 1 Table S1.1 (AR4):

(a) 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 Bioaerosols

3.6.1 The operator shall take all appropriate measures, to prevent or where that is not practicable to minimise the release of bioaerosols. Emissions of bioaerosols from the operational activities shall not exceed the emission action levels specified in tables S3.5.

3.6.2 The operator shall where the emission action levels are exceeded:

(a) notify the Environment Agency and investigate and take remedial action;

(b) submit to the Environment Agency for approval within the period specified, a bioaerosols management plan which identifies and minimises the risks of pollution from bioaerosols; and

(c) implement the bioaerosols management plan from the date of approval and revise the plan periodically, unless otherwise agreed in writing by the Environment Agency.

3.7 Pests

3.7.1 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.

3.7.2 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.

3.8 Fire prevention

3.8.1 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.

3.8.2 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.

3.8.3 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 AR10), 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.

4.4 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 waste through to digestion and recovery of by-products (waste treated by anaerobic digestion). Thermal hydrolysis of sludge undertaken in THP plant followed by mesophilic anaerobic digestion of waste in two tanks followed by burning of biogas produced from the process. Anaerobic digestion shall be limited to 820m/^{3} per day. Waste types suitable for acceptance are limited to those specified in Table S2.2.
Directly Associated Activity			
AR2	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)	From the receipt of permitted waste to pre-treatment and despatch for anaerobic digestion on site. Storage of residual wastes from pre-treatment to despatch off-site for recovery. 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. Waste types suitable for acceptance are limited to those specified in Table S2.2.
AR3	Physical treatment for the purpose of recycling	R3: Recycling/reclamation of organic substances which are not used as solvents	From the receipt of waste to despatch for anaerobic digestion or despatch off site for recovery. Dilution of incoming wastes using final waste waters from the wastewater treatment works to aid pre-treatment and digestion only. Pre-treatment 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, including shredding, sorting, screening, compaction, baling, mixing and maceration.

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**
			Post-treatment of digestate 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). Heat treatment (thermal hydrolysis) of waste in six tanks for the purpose of recovery. Tanks are comprised of two primary digesters, one pulper tank, four CAMBI pressure vessels, flash tank and a THP cake silo. Gas cleaning by biological or physical (carbon filtration) or chemical scrubbing. Waste types suitable for acceptance are limited to those specified in Table S2.2.
AR4	Steam and electrical power supply	R1: Use principally as a fuel to generate energy	From the receipt of biogas produced at the on-site anaerobic digestion process to combustion with the release of combustion gases. Combustion of biogas in two combined heat and power (CHP) engines with an aggregated thermal input of 7.6 MWth. Combustion of biogas and gas oil in one auxiliary boiler with a thermal input of 4.4 MWth.
AR5	Emergency flare operation	D10: Incineration on land	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 auxiliary boiler.

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	Raw material storage	Storage of raw materials including lubrication oil, antifreeze, propane, ferric sulphate, polymer, anti foam, activated carbon and diesel.	From the receipt of raw materials to despatch for use within the facility.
AR7	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)	Storage of biogas produced from on-site anaerobic digestion of permitted waste in one stand-alone tank 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.
AR8	Digestate 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)	From the receipt of processed digestate produced from the on-site anaerobic digestion process to despatch for use off-site. Storage of processed liquid digestate in three storage tanks (2 x digesters and 1 x digestion storage tank) Storage of processed solid digestate in uncovered bays on an impermeable surface with sealed drainage system.
AR9	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.
AR10	Air abatement	Collection and treatment of air from the buildings or plant using abatement system – [biofilters, carbon filters, scrubber] prior to release to atmosphere.	From the collection of air from site processes to treatment and release of treated air to atmosphere. Collection and treatment of air from the buildings, tanks or plant using abatement system – [2x biofilters, 3x carbon filters, 1x wet chemical scrubber]

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**
Activity reference	**Description of activities for waste operations**		**Limits of activities**
AR11 - Temporary storage of raw, limed and digested cake with moisture adjustment treatment only	R3 Recycling/reclamation of organic substances which are not used as solvents 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)		From the receipt of raw, limed and digested cake waste sludges for temporary storage prior to transfer of site. Blending and mixing shall not be undertaken to achieve a reaction or a dilution of contaminants. Subject to any other requirements of this permit wastes shall be stored for no longer than 1 year prior to disposal. The maximum amount of waste stored must not exceed 35,000 tonnes at any one time. Waste will be stored in bays. Individual wastes must be stored separately Treatment shall be limited to adjusting moisture content of digested waste prior to onward spreading to land. Treatment is limited to; the addition of non-waste straw or lime. The quantity of digested cake (19 06 06) treated to achieve required moisture concentration by the addition and mixing of non-waste straw or non-waste lime is limited to 10,000 tonnes per year. Storage of non-waste straw and lime is not permitted on-site. Storage of waste shall take place on an impermeable surface with a sealed drainage system. Waste types as specified in Table S2.4.
AR12 – Blending of waste for discharge to the WwTW	D13: D13 Blending or mixing prior to submission to any of the operations numbered D1 to D12		From the receipt of waste sludges and waste liquids via tanker at the *head of the works* for treatment. Treatment operations shall be limited to the blending and mixing of waste. This treatment is limited to blending and mixing without significantly altering the nature of the waste Blending and mixing shall not be undertaken to achieve a reaction or a dilution of contaminants. The discharge of waste shall take place on an impermeable surface with a sealed drainage system. Waste types as specified in Table 2.3.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	All sections of the application document “Tranche 1 site BAT Analysis” (Whitlingham columns only) and response to section 3a – technical standards in application form document “Whitlingham MSD”, dated March 2021. Best available techniques as described in the BAT Reference Document for Waste Treatment (the BREF) and BAT conclusions. Process flow diagram for Whitlingham STC process, p.7 of document “Whitlingham MSD”, dated March 2021 Odour management plan reference OMP “Whitlingham Sludge Treatment Centre” v12, dated 16/03/2021 Accident management plan (AMP) referenced “Whitlingham CHP plant” last reviewed: 05/02/2021	26/08/2021
Response to Schedule 5 Notice dated 15/12/202	Response to BAT points (technical standards) in document “Whitlingham Schedule 5” (excel file format), all of document except item: 13. Updated infrastructure plan detailing impermeable and permeable surfaces as currently built document ref: “WHITST Permeable & Impermeable”	19/01/2022
	Response to BAT conclusion 19. Containment assessment including a completed ABDA risk assessment tool, 2D spill modelling results, assessment against CIRIA 763 guidance and proposed improvement to achieve site-wide containment at the facility. Final containment design and implementation are to be finalised upon completion of improvement programme. Containment assessment document reference: “Whitlingham STC - Containment assessment Revision 2”, dated July 2022	5/072022
Response to request for further information dated 03/03/2025	Response to questions raised Updated site plan	05/03/2025

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
Improvement condition for secondary containment design		
IC1	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 Whitlingham STC - Containment assessment Revision 2”, dated July 2022. The finalised 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	31/3/2025 Implementation of all required and approved containment improvements must be completed by 31/03/2025.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	designs based on the proposed secondary containment in the document Whitlingham STC - Containment assessment Revision 2", dated July 2022 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.	
Improvement conditions for primary containment tanks		
IC2	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.	12 months of permit issue or such other date as agreed in writing with the Environment Agency.
Improvement conditions for operational storage buffer capacity		
IC3	The operator shall submit a written "waste water and digestate buffer storage plan" and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review of the current storage of waste water and digestate produced from site operations. The review shall propose and describe site contingency	31/3/2025 Implementation of all required containment

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	arrangements to provide appropriate storage capacity or other appropriate measures to prevent or minimise emissions of waste water or digestate being discharged off site during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. The storage plan shall include but not be limited to: • Proposals for additional storage capacity with secondary containment within the site boundary for wastewater and/or other digestate during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. • Procedures to cease discharges during these conditions. • Calculation of a reasonable contingency capacity of waste water and/or other digestate during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. • A description and design specification of the buffer storage infrastructure and secondary containment measures. The design shall be completed by an appropriately qualified engineer and secondary containment shall be designed in line with CIRIA C736. • A program of works with timescales for the implementation and construction of the buffer storage. • A preventative maintenance and inspection regime. The plan shall be implemented in accordance with the Environment Agency's prior written approval.	improvements must be completed by 31/03/2025
Improvement conditions for establishing an inventory of liquid waste water discharged from anaerobic digestion and associated activities (AR1 – AR10)		
IC4a	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 Whitlingham wastewater treatment works (WwTW) from emission points S2, S3, S4, S5 and S6 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(s) location(s). The programme shall establish the characteristics of the liquid waste water streams and shall include as a minimum for each emission point:	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**
	• 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 – *Surface water pollution risk for your environmental permit* Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk). • *Monitoring discharges to water: guidance on selecting a monitoring approach* Monitoring discharges to water: guidance on selecting a monitoring approach - GOV.UK (www.gov.uk) The monitoring programme shall be carried out and the monitoring data submitted in accordance with the Environment Agency's written approval.	
Improvement conditions for establishing an inventory of liquid waste water discharged from anaerobic digestion and associated activities (AR1 – AR10)		
IC4b	The operator shall submit a report for approval by the Environment Agency, following completion of the sampling programme approved under IC4a. 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 S2, S3, S4, S5 and S6 will have any adverse impact on the receiving waters once discharged from Whitlingham WwTW. An assessment shall be made against the parameters specified in the relevant environmental standards as specified within Environment Agency guidance as follows:	Within 15 months of the Environment Agency's written approval of the sampling programme submitted under IC4a or such other date as agreed in

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	• Specific substances and priority hazardous substances – *Surface water pollution risk for your environmental permit* Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk). • Sanitary substances – *H1 annex D2: assessment of sanitary and other pollutants in surface water discharges* 1076_14 H1 Annex D2 - Assessment of sanitary and other pollutants within Surface Water Discharges (publishing.service.gov.uk) 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.	writing with the Environment Agency
IC4c	The operator shall implement any improvements identified within the report approved under IC4b 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 IC4b being approved by the Environment Agency or such other date as agreed in writing with the Environment Agency
Improvement condition to address methane slip emissions from gas engines burning biogas		
IC5	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. 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	Within 6 months of permit issue or as such other agreed in writing with the Environment Agency
Improvement condition for establishing a Leak detection and repair programme		
IC6	The operator shall establish a site-specific leak detection and repair (LDAR) programme to detect and mitigate the release of volatile organic compounds, including methane from diffuse sources. The programme shall include, but not be limited to an LDAR survey, diffuse emissions source inventory and associated monitoring arrangements. The programme shall be submitted to the Environment Agency for approval.	Within 6 months of permit issue or as such other date as agreed in writing with the

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	The programme shall take into account the appropriate measures for LDAR plans specified in Section 11.9 of Environment Agency guidance, *Biological waste treatment: appropriate measures for permitted facilities*. The operator shall also have regard to BS EN 17628 when designing the LDAR programme and consider the use of optical gas imaging cameras in addition to the mandatory application of 'sniffer' techniques according to BS EN 15446.	Environment Agency
Improvement condition for the abatement of OCUs that do not meet BAT		
IC7	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 point A10 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, *Biological waste treatment: appropriate measures for permitted facilities.* • 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. (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 permit issue or such other date as agreed in writing with the Environment Agency
Improvement condition for review of effectiveness of abatement plant		
IC8	The operator shall carry out a review of the abatement plant at emissions points A9, A10, A11 and A12 on the site including the recommendations in document: "Odour Assessment Report" for Whitlingham WRC, Section 7 (p.22 onwards) 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, ammonia, Hydrogen chloride (HCl), and TVOC if applicable). The operator shall submit a written report to the Environment Agency following this review for assessment and approval.	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**
	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, ammonia HCl, and TVOC if applicable). • Abatement process monitoring results (including but not limited to odour, ammonia, HCl, and TVOC if applicable). • 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, ammonia, HCl, and TVOC if applicable) • 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		
IC9	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 *BSI PAS 110: Producing Quality Anaerobic Digestate* 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
Improvement condition for establishing an inventory of liquid/sludge waste discharged from the Head of works Waste operation activity (AR12)		
IC10a	The operator shall submit a sampling programme in relation to liquid/sludge waste streams that are to be discharged to emission point S1 and shall obtain the Environment Agency's written approval to it. The sampling programme shall be designed to fully characterise the	**Submission of sampling programme**

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	liquid/sludge waste discharged to Whitlingham wastewater treatment works (WwTW) from emission point S1 in table S3.2 of the permit. The programme shall include but not be limited to a methodology for gathering a representative chemical pollutant suite of analysis of all incoming wastes, that will be discharged to emission point S1, for a minimum period of 12 months. A minimum of 12 spot samples from each waste producer shall be taken, provided the liquid/sludge waste is appropriately mixed, homogeneous, and is representative of the specific waste stream being discharged. The programme shall detail the sampling methods/standards and limits of detection (LOD)/minimum reporting values (MRV) used. Waste Characterisation sampling methods shall be in accordance with guidance, *Non-hazardous and inert waste: appropriate measures for permitted facilities* and *Biological waste treatment: appropriate measures for permitted facilities,* and shall fully characterise the liquid/sludge waste streams, including as a minimum for each waste stream the: • Maximum, minimum and average values and variability of flow, pH, temperature and conductivity. Flow rates shall be based upon the capability of the discharging tanker. • Chemical names, the units of measurement, maximum, minimum and average concentration and load values of all substances that have an environmental quality standard (EQS) or ecotoxic properties, and their variability. • Total and dissolved metals data • Data on bioeliminability. • Information on the liquid/sludge waste stream source • National Grid Reference (NGR) of the sampling point The sampling programme shall be produced in accordance with the following Environment Agency guidance: • Section 3 (Waste pre-acceptance, acceptance and tracking) of guidance *Non-hazardous and inert waste: appropriate measures for permitted facilities* • Section 6 (Waste pre-acceptance, acceptance and tracking) of guidance *Biological waste treatment: appropriate measures for permitted facilities* • Specific substances and priority hazardous substances – *Surface water pollution risk for your environmental permit* Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk).	3 months from the issue of this permit] or such other date as may be agreed in writing with the Environment Agency **Quarterly sampling data results at three monthly intervals** Quarter 1 Initial sampling data results submitted 3 months from the date the Environment Agency approves the sampling programme, or other such date as may be agreed in writing with the Environment Agency Quarter 2 Sampling data results submitted 6 months from the date the Environment Agency approves the sampling programme, or other such date as may be agreed in writing with the

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	• *Monitoring discharges to water: guidance on selecting a monitoring approach* Monitoring discharges to water: guidance on selecting a monitoring approach - GOV.UK (www.gov.uk) • *Monitoring discharges to water: CEN and ISO monitoring methods* Monitoring discharges to water: CEN and ISO monitoring methods - GOV.UK (www.gov.uk) The sampling programme shall be carried out as approved by the Environment Agency and the sampling data shall be submitted in accordance with the Environment Agency's written approval.	Environment Agency Quarter 3 Sampling data results submitted 9 months from the date the Environment Agency approves the sampling programme, or other such date as may be agreed in writing with the Environment Agency Quarter 4 Final sampling data results submitted 12 months from the date the Environment Agency approves the sampling programme, or other such date as may be agreed in writing with the Environment Agency
Improvement conditions for indirect discharges to water discharged from the Head of works waste operation activity (AR12)		
IC10b	The operator shall submit a report for audit and approval by the Environment Agency, following completion of the sampling programme referred to in IC10a. The report shall include but shall not be limited to: • the raw data used to undertake the screening, • a summary of the sample results, • a completed H1 risk assessment or equivalent risk assessments and • modelling outputs where appropriate,	Within 6 months of the submission of the final sampling data results submitted under IC10a or such other date as may be

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	in order to assess the impact from each individual liquid/sludge waste stream discharged to point S1. The operator shall provide conclusions on whether the liquid/sludge wastes discharged to S1 will have any adverse impact on the receiving waters once discharged from Whitlingham WwTW. An assessment shall be made against the parameters identified in IC10a and against the relevant environmental quality standards (EQS – or Predicted No Effect Concentrations (PNECs) for substances that have ecotoxic properties but no established EQS) as specified within Environment Agency guidance as follows: • Specific substances and priority hazardous substances – *Surface water pollution risk for your environmental permit* Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk). • Sanitary substances – *H1 annex D2: assessment of sanitary and other pollutants in surface water discharges* 1076_14 H1 Annex D2 - Assessment of sanitary and other pollutants within Surface Water Discharges (publishing.service.gov.uk). • H1 risk assessment tool ADMLC https://admlc.com/h1-tool/ The report shall include proposals for any additional measures/abatement required to prevent or minimise any significant emissions from the waste operation. The operator shall implement the proposals in the report in accordance with the timescales as approved in writing by the Environment Agency.	agreed in writing with the Environment Agency
IC10c	The operator shall submit a report that provides written confirmation to the Environment Agency that the proposed improvements identified within the report approved under IC10b have been implemented and completed in accordance with the Environment Agency's written approval. (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 IC10b being submitted to the Environment Agency or such other date as may be agreed in writing with the Environment Agency

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
Pre-operational condition to submit an assessment of the fate and impact of new waste streams not previously accepted, and that change the risk of the waste stream to be discharged under existing waste codes as specified in Table S2.4		
P01	AR12	Prior to accepting new waste streams under activity AR12 for existing permitted waste codes identified in table S2.4 for discharge into the head of works (emission point S1), the operator shall undertake an assessment of the fate and impact on the receiving waters by updating the environmental risk assessment established in IC10b, the additional measures/abatement implementation plan as approved under IC10b and in accordance with the sampling plan as approved under IC10a. Acceptance of the new liquid/sludge waste streams under existing waste codes shall only commence following submission of the above risk assessment and any recommendations for additional measure/abatement considered to be required, written approval from the Environment Agency and the submission of written confirmation to the Environment Agency that any additional measures/abatement considered to be required have been implemented and completed as approved.

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 (AR1 – AR10)	
Maximum quantity	**Annual throughput shall not exceed 269,000 tonnes**
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 containing persistent organic pollutants. • 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 08	**wastes from waste water treatment plants not otherwise specified**
19 08 05	sludges from the treatment of urban waste water

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR12)	
Maximum quantity	**Annual throughput shall not exceed 20,000 tonnes**
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Wastes containing persistent organic pollutants. • 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. • Hazardous waste. • Solid wastes (only wastes of liquid free flowing form shall be accepted).
Waste code	**Description**
16	**Wastes not otherwise specified in the list**
16 10	**aqueous liquid wastes destined for off-site treatment**
16 10 02	Aqueous liquid wastes other than those mentioned in 16 10 01
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 09	**wastes from the preparation of water intended for human consumption or water for industrial use**
19 09 02	sludges from water clarification

Table S2.4 Permitted waste types and quantities for non-hazardous waste storage (Temporary storage of digested sludge cake and raw cake) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 150,000 tonnes**
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Wastes containing persistent organic pollutants. • 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. • Hazardous 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**

Table S2.4 Permitted waste types and quantities for non-hazardous waste storage (Temporary storage of digested sludge cake and raw cake) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 150,000 tonnes**
Exclusions	Wastes having any of the following characteristics shall not be accepted: • Wastes containing persistent organic pollutants. • 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. • Hazardous waste.
Waste code	**Description**
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (digested sewage sludge only)

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 A1 on site plan in Schedule 7 TG 27806 07472	CHP engine 1 stack [note 1]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500 mg/m^3	Average over sample period	Annual	BS EN 14792
		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 A2 on site plan in Schedule 7 TG 27837 07449	CHP engine 2 stack [note 1]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500 mg/m^3	Average over sample period	Annual	BS EN 14792
		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
Existing medium combustion plant other than engines fuelled on biogas (1 MW to 5 MW)						
Point A8 on site plan in Schedule 7 TG 27800 07485	Boiler 1 stack [burning biogas] [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

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	200 mg/m^3 [note 3]			BS EN 14791 or CEN TS 17021 or by calculation based on fuel sulphur
Existing medium combustion plant other than engines and gas turbines fuelled on gas oil (1 MW to 5 MW)						
Point A8 on site plan in Schedule 7 TG 27800 07485	Boiler 1 stack [burning gas oil] [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			BS EN 15058
Point A3 on site plan in schedule 7	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 A9 on site plan in schedule 7	Channelled emissions such as odour abatement stack or vent(s) [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
	Channelled emissions to air 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]	Average over sample period	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**
Point A10 on site plan in schedule 7	Channelled emissions such as odour abatement stack or vent(s) [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
	Channelled emissions to air 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]	Average over sample period	Once every 6 months	EN 12619
Point A11 on site plan in schedule 7	Channelled emissions such as odour abatement stack or vent(s) [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
	Channelled emissions to air 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]	Average over sample period	Once every 6 months	EN 12619
Point A12 on site plan in schedule 7	Channelled emissions such as odour abatement stack or vent(s) [note 6]	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis

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**
		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 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]	Average over sample period	Once every 6 months	EN 12619
Pressure relief valves [Point A4 on site plan in schedule 7]	Gas holder	Biogas release and operational events	No limit set	Recorded duration and frequency	Daily inspection	--
Pressure relief valves [Point A5, A6 on site plan in schedule 7]	Digesters 1 and 2	Biogas release and operational events	No limit set	Recorded duration and frequency	Daily inspection	--
Pressure relief valves [Point A7 on site plan in schedule 7]	Thermal hydrolysis plant	Biogas release and operational events	No limit set	Recorded duration and frequency	Daily inspection	--
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 flare has been operational for more than 10 per cent of a year (876 hours). Record of operating hours to be submitted annually to the Environment Agency.

Note 5 – Monitoring and limits only apply where the substance concerned is identified as relevant in the waste gas inventory IC8.

Note 6 – The monitoring of NH_3 and H_2S can be used as an alternative to the monitoring of the odour concentration subject to the outcome of IC8.

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**
S2, S3, S4, S5 and M5 on site plan in schedule 7 emission to River Yare via Whitlingham WRC	Filtrate returns, Centrate returns, raw centrifuge returns and return liquors from the cake storage area.	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 EN ISO 23913

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**
		PFOA and PFOS	--		Once every six months	--
S1 on site plan in schedule 7 emission to River Yare via Whitlingham WRC	Discharge of tankered waste waters to the head of works	-- [Note 3]	-- [Note 3]	-- [Note 3]	-- [Note 3]	-- [Note 3]
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 IC4a and IC4b 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 IC10a, IC10b.						

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
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 digesters & biogas storage holder	Flow	Continuous	In accordance with EU weights and measures Regulations	Process monitoring to be recorded using a SCADA system where relevant. Gas monitors to be calibrated every 6 months or in accordance with the manufacturer's recommendations.
	Methane	Continuous	None specified	
	CO_2	Continuous	None specified	
	O_2	Continuous	None specified	
	Hydrogen sulphide	Daily	None specified	

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
	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 integrity assessment every 5 years or as specified by manufacturers technical specification.	In accordance with design specification and 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 engine(s) to be calculated and submitted to the

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
				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 management system	Conditions to be recorded in 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 flare	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.

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
	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 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

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Storage tanks	Volume	Daily	Visual or flow meter measurement	Records of volume must be maintained.

Table S3.4 Process monitoring requirements – odour abatement				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Odour abatement plant				
Closed biofilters				
Biofilter 1 and 2 at emission points A9 and A11 on the site plan in schedule 7	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. Odour abatement plant shall be managed in accordance with permit condition 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.
	Biofilter media moisture	Daily	Moisture meter, Grab test, oven drying or recognised industry method	
	Thatching /compaction	Weekly	Back pressure	
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	
	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 IC8 as approved in writing by the Environment Agency.

Table S3.4 Process monitoring requirements – odour abatement				
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 IC8 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 IC8 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.
Scrubbers (chemical)				
Scrubber 1 at emission point A10 on site plan in schedule 7	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. Odour abatement plant shall be
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	
	Moisture content or humidity – inlet and outlet (for dry scrubbers only)	Daily	Moisture meter	

Table S3.4 Process monitoring requirements – odour abatement				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
	Moisture content or humidity – outlet (for wet scrubbers if used before other abatement systems)	Daily	Moisture meter	managed in accordance with permit condition 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.
	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	
	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 IC8 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 IC8 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				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Carbon filters				
Carbon filter 1 and 2 at emission points A9 and A11 on the site plan in schedule 7	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. Carbon filter 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.
	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)	
	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 IC8 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 IC8 as approved in writing by the Environment Agency. Action levels to be achieved in

Table S3.4 Process monitoring requirements – odour abatement				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
				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 IC8 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 Bioaerosols monitoring requirements – ambient monitoring					
Location or description of point of measurement	**Parameter**	**Bioaerosols action levels (CFU m^{-3})**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Upwind of the operational area, as described in the Technical Guidance Note M9 Downwind of the operational area, as described in the Technical Guidance Note M9	Total bacteria	1000 Note 1	Quarterly for the first year of operation and twice a year thereafter, unless another frequency is agreed in writing by the Environment Agency Note 2	In accordance with Technical Guidance Note M9 – Environmental monitoring of bioaerosols at regulated facilities.	As described in the Technical Guidance Note M9, including all the additional data requirements specified therein.
	Aspergillus Fumigatus	500 Note 1			
Note 1 – The bioaerosols action levels are only applicable at downwind sampling locations equivalent to the distance of the nearest sensitive receptor. Where these action levels are elevated, the operator must take action to mitigate the impact on sensitive receptors. Assessment of compliance will be based on risk and in line with guidance. Note 2. Where the bioaerosols action levels are exceeded, then monitoring remain quarterly until such time that it is demonstrated that the site has adequate mitigation for a 12 month period.					

Table S3.6 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 River Yare via Whitlingham WwTW – Discharge of tankered waste to the HoW	Effluent monitoring	TG 27713 07607	Point M1 [Discharge to WwTW] in Schedule 7
S2 on site plan in schedule 7 emission to River Yare via Whitlingham WwTW – Centrate returns		TG 27721 07486	Point M2 [Discharge to WwTW] in Schedule 7
S3 on site plan in schedule 7 emission to River Yare via Whitlingham WwTW – Filtrate returns		TG 27793 07488	Point M3 [Discharge to WwTW] in Schedule 7
S4 on site plan in schedule 7 emission to River Yare via Whitlingham WwTW – Liquor returns from cake storage area		TG 27471 07327	Point M4 [Discharge to WwTW] in Schedule 7
S5 on site plan in schedule 7 emission to River Yare via Whitlingham WwTW – Liquor returns from cake storage area		TG 27602 07597	Point M5 [Discharge to WwTW] 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 boiler Parameters as required by condition 3.5.1.	A1, A2 and A8.	Every 12 months	1 January
Emissions to air from odour abatement plant Parameters as required by condition 3.5.1.	A9, A10, A11 and A12	Every 6 months	1 January, 1 July
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 IC8 Parameters as required by condition 3.5.1.	A9, A10, A11 and A12	Every 6 months	1 January, 1 July
Emissions to sewer Parameters as required by condition 3.5.1	S1, S2, S3, S4, S5 and S6	Upon completion of IC4a, IC4b IC10a and IC10b	Upon completion of IC4a, IC4b IC10a and IC10b
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
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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
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
Bioaerosols monitoring Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.5	Every 3 months or as agreed in writing by the Environment Agency	1 January, 1 April, 1 July, 1 October

Table S4.2 Annual production/treatment	
Parameter	**Units**
Electricity generated	MWh
Liquid digestate	m^3
Solid digestate	tonnes
Recovered outputs	tonnes or m^3

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Water usage	Annually	tonnes or m^3
Energy usage	Annually	MWh
Raw material usage	Annually	tonnes or m^3
Emergency flare operation	Annually	hours
Electricity exported	Annually	MWh
CHP engine usage	Annually	hours
CHP engine efficiency	Annually	%
Auxiliary boiler usage	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	26/03/25
Bioaerosols	As specified in the Technical Guidance Note M9 or other form as agreed in writing by the Environment Agency	--
Process monitoring	Form process 1 or other form as agreed in writing by the Environment Agency	26/03/25
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	26/03/25
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	26/03/25
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	26/03/25
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	26/03/25
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.

“bioaerosols action levels” mean the acceptable bioaerosols concentrations at the nearest sensitive receptor, or at an equivalent distance downwind of the biowaste treatment operations, which are attributable to the biowaste treatment operations. The acceptable concentrations are respectively 1000 and 500 CFU m^{-3} for total bacteria and Aspergillus fumigatus. Where these action levels are elevated, the operator must take action to mitigate the impact on sensitive receptors.

“Biodegradable” means a material is capable of undergoing biological anaerobic or aerobic degradation leading to the production of CO_2, H_2O, 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.

“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.

“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 55^0C, 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.

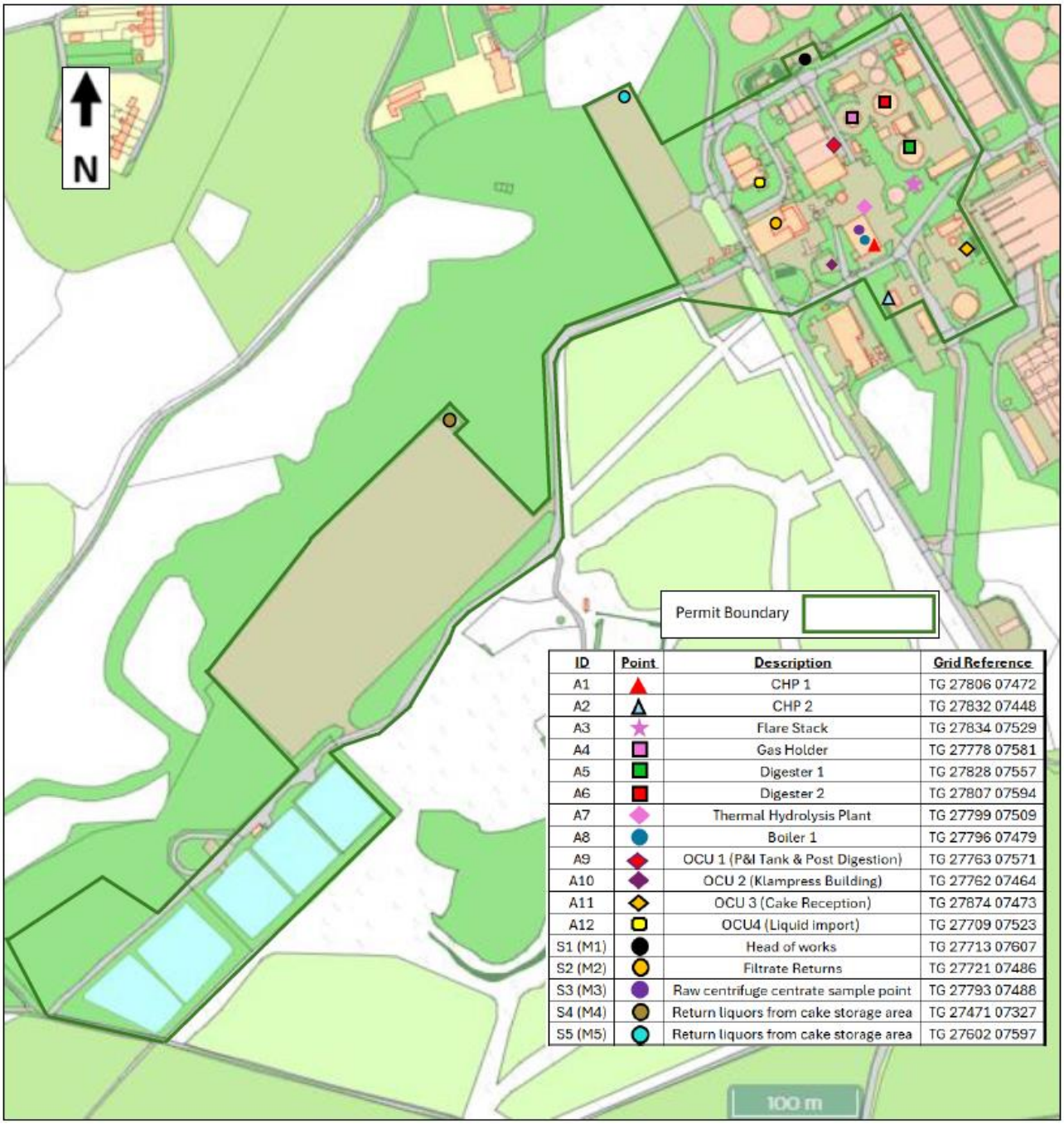
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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.

Schedule 7 – Site plan



ID	Point	Description	Grid Reference
A1		CHP 1	TG 27806 07472
A2		CHP 2	TG 27832 07448
A3		Flare Stack	TG 27834 07529
A4		Gas Holder	TG 27778 07581
A5		Digester 1	TG 27828 07557
A6		Digester 2	TG 27807 07594
A7		Thermal Hydrolysis Plant	TG 27799 07509
A8		Boiler 1	TG 27796 07479
A9		OCU 1 (P&I Tank & Post Digestion)	TG 27763 07571
A10		OCU 2 (Klampress Building)	TG 27762 07464
A11		OCU 3 (Cake Reception)	TG 27874 07473
A12		OCU4 (Liquid import)	TG 27709 07523
S1 (M1)		Head of works	TG 27713 07607
S2 (M2)		Filtrate Returns	TG 27721 07486
S3 (M3)		Raw centrifuge centrate sample point	TG 27793 07488
S4 (M4)		Return liquors from cake storage area	TG 27471 07327
S5 (M5)		Return liquors from cake storage area	TG 27602 07597

Annex 1 of MCP

1. Rated thermal input (MW) of the medium combustion plant.	CHP Engine 1 – 4.6 MWth CHP Engine 2 – 3 MWth Boiler – 4.4 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	CHP Engine 1 – Biogas (Gaseous fuels other than natural gas) CHP Engine 2 – Biogas (Gaseous fuels other than natural gas) Boiler – Biogas (Gaseous fuels other than natural gas) and gasoil
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	CHP 1 and 2 - Gaseous fuels other than natural gas Boilers - Gaseous fuels other than natural gas and gasoil.
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.	CHP Engine 1 – 2008 CHP Engine 2 – 2014 Boiler – 2008
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.	CHP Engine 1 – 8,147 (90%) CHP Engine 2 – 8,147 (90%) Boiler – 8,147 (90%)
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:** Anglian Water Services Limited, Lancaster House, Lancaster Way, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6YJ **Address where the plant is located:** Whitlingham Sludge Treatment Centre (STC) Kirby Bedon Road, Trowse, Norwich, Norfolk, NR14 8TZ

END OF PERMIT