Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Severn Trent Water Limited

Monkmoor Sewage Treatment Works
Monkmoor Road
Shrewsbury
Shropshire
SY2 5TL

Variation application number

EPR/RP3799CW/C004

Consolidated permit number

EPR/RP3799CW

Monkmoor Sewage Treatment Works
Permit number EPR/RP3799CW

Introductory note

This introductory note does not form a part of the permit

Changes introduced by this variation

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 Monkmoor Sewage Treatment Works 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.

The following notice gives notice of the variation of multi regime environmental permits EPR/RP3799CW and EPR/AP3937QK referred to in the status logs below and the replacement of those permits with a consolidated environmental permit. EPR/RP3799CW previously issued as a bespoke waste operation permit for a non-hazardous waste chemical and physical treatment facility. EPR/AP3937QK was previously issued as a Tranche B specified generator permit. The Combined Heat and Power (CHP) engine was previously operated under EPR/AP3937QK. Both the CHP and the three boilers are to be added to the permit as directly associated activities (DAAs) to the Section 5.4 Part A (1)(b)(i) scheduled activity. This variation also includes an increase to the site boundary to accommodate the assets associated with the sludge Anaerobic Digestion (AD) operation and the waste operation for the import of waste to the head of works.

Brief description of the process

Monkmoor Sewage Treatment Works is located to the east of Shrewsbury situated on the outskirts of the town. To the north, east and south of the site is land used largely for agricultural purposes with the River Severn looping around the site from the south and continuing off towards the northwest. The A49 road runs north to south approximately 500m to the east of the site. Residential properties are located immediately to the southwest of the site and industrial use properties are located to west and north west approximately 200m away. The site is located within the curtilage of the wider Waste Water Treatment Works (WwTW) operated under the UWWTR. The WwTW do not form part of this permit.

There are numerous Local Wildlife Sites (LWS) within 2km, with the closest being located approximately 215m away and there is one ancient woodland located 1,730m away from the site. There are no Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) within 10km of the site and no Sites of

Specific Scientific Interest (SSSI) located within 2km. There are two RAMSARs within 10km of the site boundary with the closest situated approximately 3.5km away.

Tankered sludge imported from other waste water treatment sites are received at the sludge import tank and then transferred into one of four consolidation tanks where it is mixed with indigenous sludges. The sludge import tank is served by an abatement system (OCU 4 – emission point A13) and the consolidation tanks are served by an abatement system (OCU 2 – emission point A11).

Indigenous primary sludges from the WwTW are introduced into the consolidation tanks via the main sludge pumping station that is served by an abatement system (OCU 1 – emission point A10). From the consolidation tanks sludges are introduced into the crude belt feed tank prior to screening to remove rag and grit. Both the crude belt feed tank and the screen are served by an abatement system (OCU 3 – emission point A12). The screened sludge is then forwarded on for thickening in the belt thickener where polymer is added to aid the thickening process. Indigenous surplus activated sludges (SAS) from WwTW are introduced from the SAS belt feed tank (which does not form part of the installation) into the SAS belt thickeners where polymer is added to aid the thickening process. Filtrate from both thickening processes is returned to the wider WwTW and sampled via point S6. Thickened sludges from both belt thickeners are blended together in the pre-digestion blending tank. The predigestion blending tank is served by an abatement system (OCU 5 – emission point A14).

From the pre-digestion tanks the blended sludges are introduced into one of three above ground primary digesters operating on a continual basis with a hydraulic retention time of approximately 12-17 days dependant on process monitoring results. The retention time range is subject to potential change based on compliance with HACCP methodology. The treatment of sludge in a biological AD process is a Section 5.4 Part A (1)(b)(i) scheduled activity of the Environmental Permitting (England and Wales) Regulations 2016 (EPR).

After the sludge has undergone AD in the primary digesters it is transferred into either one of four pathogen kill tanks or one of five storage tanks for a total of nine post digestion tanks. Preference is given to the pathogen kills tanks with the storage tanks being utilised as additional capacity as and when needed. Digested sludge filtrate is returned from the pathogen kills tanks to the wider WwTW and sampled via points S2-S5. The digested sludge is then removed from the site for onwards dewatering and storage at a permitted satellite site prior to land spreading in accordance with the Sludge Use in Agriculture Regulations (SUiAR) (1989).

Biogas produced as part of the AD process is captured and stored in a flexible membrane biogas holder before transfer via biogas pipeline for combustion in either the 1.3MWth combined heat and power (CHP) engine or the one of three auxiliary dual fuelled boilers (biogas and gas oil). Two of the boilers have a thermal input of 0.46MWth whilst the third has a thermal input of 0.30MWth. The biogas holder and the primary digesters are fitted with pressure release valves to ensure the system avoids over pressurisation. The biogas pipeline is fitted with condensate pots that capture entrained moisture from the generated biogas and allow it to be directed to the wider waste water treatment works.

The site also operates an emergency flare which can be used in the event of an emergency.

Head of works waste operation (activity AR11 in Table S1.1)

This permit also allows a further waste operation relating to the import of waste to the head of works. Effluents and waste waters in the form of sludge and liquid only, will be delivered by tanker to either the three trade waste import tanks for storage (prior to discharge) or the head of the works itself for direct discharge for treatment under the UWWTR. This activity involves the storage of liquid wastes and discharge to the main WwTW. The discharge is classed as an indirect emission to water, in this case, the River Severn. We have imposed improvement conditions in the permit (IC9) to determine the impact on the River Severn from the tankered wastes imported and subsequently discharged to the WwTW via emission point T1 (sampled at sampling point S1).

Moos skip waste operation (activity AR12 in Table S1.1)

The site also accepts wet well cleaning wastes from other smaller sites within the catchment. These materials are delivered to the inlet of the works for processing. However, in some cases there is too high a

level of rags or fats within the material for it to be processed. This material is directed to a dedicated skip and has a limit of 10,000 tonnes per annum (the 'moos' skip) located on the former road sweepings pad, for excess liquid to drain, prior to removal from site to landfill. All liquids which drain off the skip are captured and returned to the works inlet for aerobic processing.

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

Status log of the permit A: EPR/RP3799CW		
Description	**Date**	**Comments**
Permit Determined EAWML 47018	05/02/1991	Permit issued to Severn Trent Water Limited.
Modification to licence [1] EAWML 47018	18/08/1994	
Modification to licence [2] EAWML 47018	25/07/2001	Variation to accepted wastes and annual throughputs.
Modification to licence [3] EAWML 47018	25/07/2001	Modification to generic permit conditions.
Modification to permit EPR/RP3799CW	13/10/2010	Change of registered office address
Application EPR/RP3799CW/V002 (variation and consolidation)	Duly made 27/12/2019	Application to vary and update the permit to modern conditions.
Variation determined EPR/RP3799CW	29/05/2020	Varied permit issued.
Application EPR/RP3799CW/V003	23/12/2021	Withdrawn to be relogged as C004 in line with consolidation guidance.
Application EPR/RP3799CW/C004 (variation and consolidation with EPR/AP3937QK)	Duly made 11/12/2024	Application for an anaerobic digestion facility with combustion of biogas at a waste sewage sludge treatment site.
Additional Information provided in response to a Schedule 5 notice	Received 21/02/2024	Response to Schedule 5 notice requesting information in relation to BAT, head of works, digestate storage removal and secondary containment.
Variation determined and consolidation issued EPR/RP3799CW/C004	11/03/2025	Varied and consolidated permit issued in modern format.

Status log of the permit B: EPR/AP3937QK		
Description	**Date**	**Comments**
Application EPR/RP3799CW/A001	Duly made 20/05/2019	Bespoke application for a Specified Generator.
Permit determined EPR/AP3937QK	17/09/2019	Permit issued to Severn Trent Water Limited.
Application EPR/RP3799CW/V002	Duly made 11/12/2024	Application for an anaerobic digestion facility with combustion of biogas at a waste sewage sludge treatment site.

Status log of the permit B: EPR/AP3937QK		
Description	**Date**	**Comments**
(variation and consolidation with EPR/RP3799CW)		
Variation determined and consolidation issued EPR/RP3799CW/C004	11/03/2025	Varied and consolidated permit issued in modern format. AP3937QK ceases to exist.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit numbers

EPR/RP3799CW

EPR/AP3937QK

Issued to

Severn Trent Water Limited ("the operator")

whose registered office is

Severn Trent Centre
2 St John's Street
Coventry
CV1 2LV

company registration number 02366686

to operate an installation at

Monkmoor Sewage Treatment Works
Monkmoor Road
Shrewsbury
Shropshire
SY2 5TL

to the extent set out in the schedules.

The notice shall take effect from 11/03/2025

The number of the consolidated permit is **EPR/RP3799CW**

Name	Date
Rebecca Warren	**11/03/2025**

Authorised on behalf of the Environment Agency

Schedule 1

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/RP3799CW

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Severn Trent Water Limited (“the operator”),

whose registered office is

Severn Trent Centre
2 St John's Street
Coventry
CV1 2LV

company registration number 02366686

to operate an installation and a waste operations at

Monkmoor Sewage Treatment Works
Monkmoor Road
Shrewsbury
Shropshire
SY2 5TL

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

Name	Date
Rebecca Warren	**11/03/2025**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

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

1.2 Energy efficiency

1.2.1 For the following activities referenced in schedule 1, table S1.1 (AR1 to 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 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 IC1 below.

3.2.5 Subject to condition 3.2.6, below, all liquid wastes in storage tanks and lagoons shall be fully enclosed, with emissions collected and directed to an appropriate abatement system, unless other appropriate measures to prevent or where that is not practicable, to minimise, emissions of waste gases from storage tanks and lagoons have been agreed in writing with the Environment Agency.

3.2.6 Condition 3.2.5, above, shall apply unless the operator strictly complies in full with IC2, IC3 and IC4 below.

3.2.7 Subject to condition 3.2.8, below, the anaerobic treatment of all wastes shall take place within fully enclosed vessels. Combustible biogas or biomethane produced during biological treatment shall be utilised as a fuel or stored for utilisation off site, unless other appropriate measures to prevent or where that is not practicable, to minimise, emissions of biogas or biomethane from treatment/storage vessels have been agreed in writing with the Environment Agency. There shall be no uncontrolled emissions of biogas to the environment. This excludes the venting of biogas in an emergency using pressure release valves.

3.2.8 Condition 3.2.7, above, shall apply unless the operator strictly complies in full with IC4 below.

3.2.9 The operator shall implement a leak detection and repair (LDAR) programme to detect and mitigate the release of volatile organic compounds, including methane from diffuse sources.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

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

3.5 Monitoring

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

(a) point source emissions specified in tables S3.1 and S3.2;

(b) process monitoring specified in table S3.3 and S3.4;

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

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

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1,S3.2, S3.3 and S3.4, unless otherwise agreed in writing by the Environment Agency.

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

(b) In the case of new medium combustion plant, the first monitoring measurements shall be carried out within four months of the issue date of the permit or the date when the MCP is first put into operation, whichever is later.

3.5.6 Monitoring of MCP shall not take place during periods of start up or shut down.

3.6 Pests

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

3.6.2 The operator shall:

(a) only use approved products for pest control;

(b) treat pest infestations promptly;

(c) reject pest-infected incoming waste;

(d) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution from pests;

(e) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.7 Fire prevention

3.7.1 The operator shall take all appropriate measures to prevent fires on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.

3.7.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;

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

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

4 Information

4.1 Records

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

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

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

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

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

4.2 Reporting

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

4.2.2 For the following activities referenced in schedule 1, table S1.1 (AR1 to 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). Anaerobic digestion of waste in three tanks followed by burning of biogas produced from the process. Anaerobic digestion shall be limited to 366m^3/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)	Undertaken in relation to Activity AR1. 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	Undertaken in relation to Activity AR1. 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

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**
			abatement and on an impermeable surface with a sealed drainage system, including shredding, sorting, screening, compaction, baling, mixing and maceration. Post-treatment of digestate in enclosed equipment and tanks fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system, including separation and screening to remove contraries. 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	Undertaken in relation to Activity AR1. 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 one combined heat and power (CHP) engine with a thermal input of 1.3MWth. Combustion of biogas and gas oil in three auxiliary boilers with an aggregated thermal input of 1.3MWth.
AR5	Emergency flare operation	D10: Incineration on land	Undertaken in relation to Activity AR1. 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 engine and/or auxiliary boilers.
AR6	Raw material storage	Storage of raw materials including lubrication oil, antifreeze, ferric	From the receipt of raw materials to despatch for use within the facility.

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**
		chloride, activated carbon, diesel.	
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)	Undertaken in relation to Activity AR1. Storage of biogas produced from on-site anaerobic digestion of permitted waste in one stand-alone biogas holder 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)	Undertaken in relation to Activity AR1. 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 nine storage tanks (four pathogen kill tanks and five tanks referred to as 'storage tanks') prior to removal from site via tanker.
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 – [dry scrubbers, catalytic iron filters, carbon filters] 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 – [OCU 1 (A10) – chlorine dioxide impregnated pellets and carbon adsorption, OCU 2 (A11) 3 x chlorine dioxide impregnated pellets and 3 x carbon adsorption, OCU 3 (A12) chlorine dioxide impregnated pellets and carbon adsorption, OCU 4 (A13) chlorine dioxide impregnated pellets and carbon adsorption and OCU 5 (A14) catalytic iron filter, chlorine dioxide impregnated pellets and carbon adsorption].

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 – Storage and 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 D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced)	From the receipt of waste sludges and waste liquids via tanker at the *head of the works* for storage and 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. 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 800 tonnes at any one time. Waste will be stored in three tankered waste storage tanks (trade waste import tanks). Storage and discharge of waste in an enclosed tank fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system. Waste types as specified in Table S2.3.
AR12 – Storage and pre-treatment of solid waste (Moos skip operation)	D9: Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12. D15: Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where the waste is produced)	From the receipt of wet well cleansing wastes via tipper lorry/tanker for storage and screening. 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 20 tonnes at any one time. Storage of waste shall take place on an impermeable surface with a sealed drainage system. Waste types as specified in Table S2.4.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/RP3799CW/C004	Section 3 - Application Form Questions: Form C3, Appendix Site Location Plan, Form C2, Question 3d Management systems.	23/12/2021

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
	Best available techniques as described in the BAT Reference Document for Waste Treatment (the BREF) and BAT conclusions.	
Additional information	Accident and Incident Management Plan (December 2023). Leak detection and repair plan (version 1.0 - December 2023). Air quality impact assessment (version 1.0 – December 2021). SOP 01 TTW sampling (version 3.0 – October 2021) SOP 01 TTW waste pre-acceptance (version 3.0 – October 2021). SOP 02 TTW Waste Acceptance (version 3.0 - November 2021). SOP 03 TTW Non-Conformance (version 3.0 - November 2021).	21/12/2023
Additional information	Revised ASD Section 2: Technical description. Surface plan (version P03 – January 2024) IED Containment Assessment – Risk identification Report (version 2.1– February 2024). IED Containment Assessment - Proposed Option Report (version 1.1 – July 2023). Odour management plan (version 2 – November 2023).	09/02/2024
Additional information	Emision point plan (version P04 – December 2024).	11/12/2024
Response to Schedule 5 Notice dated 30/01/2025	Monkmoor process flow diagram (version 4). Raw material and water efficiency residue management plan (version 4 – February 2025). Response to question 1 relating to SAS belt thickening. Response to question 2 relating to sampling points. Response to question 4 relating to the trade waste tanks. Response to question 5 relating to digestate storage and removal. Response to question 6 relating to the inclusion of the consolidation tanks in final secondary containment designs.	21/02/2025

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 documents 'IED Containment Assessment – Risk identification Report' (version 2.1 – February 2024), 'IED Containment Assessment - Proposed Option Report' (version 1.1 – July	31/03/2025 Implementation of all required and approved containment

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	2023) and the schedule 5 notice response document received 21/02/25 (specifically response to question 6 - as referenced in table S1.2). 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 designs based on the 'IED Containment Assessment – Risk identification Report' (version 2.1 – February 2024), 'IED Containment Assessment - Proposed Option Report' (version 1.1 – July 2023) and the schedule 5 notice response document received 21/02/25 (specifically response to question 6 - as referenced in table S1.2) 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.	improvements must be completed by 31/03/2025.
Improvement condition for enclosure of tanks storing tankered trade waste prior to discharge into the head of works (AR11)		
IC2	The operator shall submit a written 'enclosure and abatement plan' and obtain the Environment Agency's written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of enclosures/covers and associated emission abatement systems in line with section 6.3 'Fugitive emissions to air' in the guidance: *Non-hazardous and inert waste: appropriate measures for permitted facilaites* for tanks used for the storage of tanker trade waste prior to discharge into the head of the works identified as the trade waste import tanks. The plan shall include evidence that the tank enclosures/covers will be designed and installed in accordance with guidance, *Non-hazardous and inert waste: appropriate measures for permitted facilaites* and provide evidence to demonstrate why the emission abatement system	31/03/2025. Implementation of all required vessel cover improvements must be completed by 31/03/2025

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	will be effective and meet the requirements of section 6.3 ‘Fugitive emissions to air’. The plan shall be implemented in accordance with the Environment Agency’s prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	
Improvement conditions for enclosure of tanks storing (or treating) sewage sludge (tanks pre-digestion)		
IC3	The operator shall submit a written ‘enclosure and abatement plan’ and obtain the Environment Agency’s written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of enclosures/covers and associated emission abatement systems in line with BAT 14 and BAT 53 for storage and treatment plant pre-anaerobic digestion identified as the SAS belt thickener building. The plan shall include evidence that the tank enclosures/covers will be designed and installed in accordance with guidance, *Biological waste treatment: appropriate measures for permitted facilities*, and provide evidence to demonstrate why the emission abatement system will be effective and meet the requirements of BAT 14 and BAT 53. The plan shall be implemented in accordance with the Environment Agency’s prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	31/03/2025 Implementation of all required vessel cover improvements must be completed by 31/03/2025
Improvement conditions for enclosure of tanks storing (or treating) digestate		
IC4	The operator shall submit a written ‘post anaerobic digestion vessel cover’ plan and obtain the Environment Agency’s written approval to it. The plan shall contain the final designs and an implementation schedule for the installation of covers for vessels storing and/or treating digestate in tanks identified as the four pathogen kill tanks and the five tanks referred to as ‘storage tanks’. The plan shall also contain a detailed description of the proposed gas utilisation/abatement plant, gas storage infrastructure for the biogas produced during anaerobic digestion, pressure relief valves and gas pipework. The plan shall include but not be limited to the following components:	31/03/2025 Implementation of all required vessel cover improvements must be completed by 31/03/2025

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	• Evidence that the pollutants of the waste gas (including methane) produced in the four pathogen kill tanks and the five tanks referred to as 'storage tanks' will be controlled and/or abated either by the proposed gas utilisation plant or proposed abatement system. • Evidence that the vessel covers, gas utilisation/ abatement plant and ancillary equipment have been designed by appropriately qualified engineers. • Evidence that the vessel covers, and gas utilisation/abatement plant will be designed and installed in accordance with guidance, *Biological waste treatment: appropriate measures for permitted facilities.* • An updated Hazard and Operability Study (HAZOP) and DSEAR risk assessment. • An assessment of gas storage capacity and gas utilisation/abatement capacity including proposals for additional gas utilisation/ abatement plant. • A program of works with timescales for the commissioning of the vessel cover(s), gas utilisation/ abatement infrastructure and ancillary equipment. The plan shall be implemented in accordance with the Environment Agency's prior written approval. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	
Improvement conditions for primary containment tanks		
IC5	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	Within 12 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**
	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.	
Improvement conditions for establishing an inventory of liquid waste water discharged from anaerobic digestion and associated activities (AR1 – AR10)		
IC6a	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 Monkmoor 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: • 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.	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**
	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 indirect discharges to water discharged from anaerobic digestion and associated activities (AR1 – AR10)		
IC6b	The operator shall submit a report for approval by the Environment Agency, following completion of the sampling programme approved under IC6a. 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 emission points S2, S3, S4, S5 and S6 will have any adverse impact on the receiving waters once discharged from Monkmoor WwTW. An assessment shall be made against the parameters specified in the relevant environmental standards as specified within Environment Agency guidance as follows: • Specific substances and priority hazardous substances – *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.	Within 15 months of the Environment Agency's written approval of the sampling programme submitted under IC6a or such other date as agreed in writing with the Environment Agency
IC6c	The operator shall implement any improvements identified within the report approved under IC6b 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	Within 6 months of the report in relation to IC6b being approved by the

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	improvements identified in the report and/or include any necessary emission limit values).	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		
IC7	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 review of effectiveness of abatement plant		
IC8	The operator shall carry out a review of the abatement plant (OCUs 1-5 at emission points A10, A11, A12, A13 and A14 and the abatement systems serving the trade waste import tanks and the SAS belt thickener building) on site, to determine whether the measures have been effective and adequate to prevent, or where this is not possible to minimise, emissions released to air (including but not limited to odour and ammonia, Hydrogen chloride (HCl), and TVOC). The operator shall submit a written report to the Environment Agency following this review for assessment and approval. The report shall include but not be limited to the following aspects: • Full investigation and characterisation of the waste gas streams. • Evidence that the emission of pollutants in the waste gas stream is being prevented or where this is not possible minimised by the abatement plant. • Abatement stack monitoring results (including but not limited to odour and ammonia, Hydrogen chloride (HCl), and TVOC). • Abatement process monitoring results (including but not limited to odour and ammonia, Hydrogen chloride (HCl), and TVOC). • Details of air quality quantitative impact assessment including modelling and a proposal for site-specific "action levels"	Within 6 from completion of IC2 and IC3 or such other date as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	(including but not limited to odour concentration, hydrogen sulphide and ammonia, Hydrogen chloride (HCl), and TVOC). • Odour monitoring results at the site boundary. • Records of odour complaints and odour related incidents. • Recommendations for improvement including the replacement or upgrading of the abatement plant. • Timescales for implementation of improvements to the abatement plant. The operator shall implement any improvements in line with the timescales as approved by the Environment Agency. (Note that approval of reports under this improvement condition does not preclude the need for permit variation applications to implement the improvements identified in the report. Any variation may include the insertion of necessary emission limit values).	
Improvement condition for establishing an inventory of liquid waste water discharged from the Head of works waste operation activity (AR11)		
IC9a	The operator shall submit a sampling programme in relation to liquid/sludge waste streams that are to be discharged to emission point T1 via sampling point S1 and shall obtain the Environment Agency's written approval to it. The sampling programme shall be designed to fully characterise the liquid/sludge waste discharged to Monkmoor wastewater treatment works (WwTW) from emission point T1 via sampling 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 T1 via sampling point S1 for a 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. Where multiple waste streams are accepted to a holding tank prior to discharge to emission point T1 the programme shall include verification sampling at points S1 to confirm that the characteristics of the waste have not been significantly altered by the holding tank activity. 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	**Submission of sampling programme** Within 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

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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 capacity of the discharging holding tank, with clear evidence to demonstrate how this has been calculated. • 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). • *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.	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 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

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
		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 (AR11)		
IC9b	The operator shall submit a report for audit and approval by the Environment Agency, following completion of the sampling programme referred to in IC9a. 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 in order to assess the impact from the liquid/sludge wastes stream discharged via three trade waste import tanks to emission point T1, sampled at point S1. The operator shall provide conclusions on whether the liquid/sludge wastes discharged to emission point T1 via sampling point S1 will have any adverse impact on the receiving waters once discharged from Monkmoor WwTW. An assessment shall be made against the parameters identified in IC9a 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/	Within 6 months of the submission of the final sampling data results submitted under IC9a or such other date as may be agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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.	
IC9c	The operator shall submit a report that provides written confirmation to the Environment Agency that the proposed improvements identified within the report approved under IC9b 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 IC9b being submitted to the Environment Agency or such other date as may be agreed in writing with the Environment Agency
Improvement condition for monitoring digestate stability		
IC10	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

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 S2.3		
PO1	AR11	Prior to accepting new waste streams under activity AR11 for existing permitted waste codes identified in table S2.3 for discharge into the head of works (emission point T1 via sampling point S1), the operator shall undertake an assessment of the fate and impact on the receiving

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
		waters by updating the environmental risk assessment established in IC9b, the additional measures/abatement implementation plan as approved under IC9b and in accordance with the sampling plan as approved under IC9a. 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 443,590 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 06	**wastes from anaerobic treatment of waste**
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (digested sewage sludge only)
19 08	**wastes from waste water treatment plants not otherwise specified**
19 08 05	sludges from the treatment of urban waste water
20	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**
20 03	**other municipal wastes**
20 03 04	septic tank sludge

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
01	**Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals**
01 05	**drilling muds and other drilling wastes**
01 05 04	freshwater drilling muds and wastes
01 05 07	barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
01 05 08	chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing**
02 02	**wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 01	sludges from washing and cleaning
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 03	**wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**
02 03 01	Sludges from washing, cleaning, peeling, centrifuging and separation
02 03 02	wastes from preserving agents
02 03 03	wastes from solvent extraction
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 04	**wastes from sugar processing**
02 04 01	soil from cleaning and washing beet
02 04 02	off-specification calcium carbonate
02 04 03	sludges from on-site effluent treatment
02 05	**wastes from the dairy products industry**
02 05 01	materials unsuitable for consumption or processing

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
02 05 02	sludges from on-site effluent treatment
02 06	**wastes from the baking and confectionery industry**
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on-site effluent treatment
02 07	**wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 03	wastes from chemical treatment
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
03	**Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard**
03 03	**wastes from pulp, paper and cardboard production and processing**
03 03 02	green liquor sludge (from recovery of cooking liquor)
03 03 05	de-inking sludges from paper recycling
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04	**Wastes from the leather, fur and textile industries**
04 01	**wastes from the leather and fur industry**
04 01 01	fleshings and lime split wastes
04 01 05	tanning liquor free of chromium
04 01 07	sludges, in particular from on-site effluent treatment free of chromium
04 01 09	wastes from dressing and finishing
04 02	**wastes from the textile industry**

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
04 02 10	organic matter from natural products (for example grease, wax)
04 02 15	wastes from finishing other than those mentioned in 04 02 14
04 02 17	dyestuffs and pigments other than those mentioned in 04 02 16
04 02 20	sludges from on-site effluent treatment other than those mentioned in 04 02 19
05	**Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal**
05 01	**wastes from petroleum refining**
05 01 10	sludges from on-site effluent treatment other than those mentioned in 05 01 09
06	**Wastes from inorganic chemical processes**
06 05	**sludges from on-site effluent treatment**
06 05 03	sludges from on-site effluent treatment other than those mentioned in 06 05 02
07	**Wastes from organic chemical processes**
07 01	**wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals**
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11
07 02	**wastes from the MFSU of plastics, synthetic rubber and man-made fibres**
07 02 12	sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 15	wastes from additives other than those mentioned in 07 02 14
07 03	**wastes from the MFSU of organic dyes and pigments (except 06 11)**
07 03 12	sludges from on-site effluent treatment other than those mentioned in 07 03 11
07 04	**wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides**
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 05	**wastes from the MFSU of pharmaceuticals**
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 06	**wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics**
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
07 07	**wastes from the MFSU of fine chemicals and chemical products not otherwise specified**
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
08	**Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks**
08 01	**wastes from MFSU and removal of paint and varnish**
08 01 12	waste paint and varnish other than those mentioned in 08 01 11
08 01 14	sludges from paint or varnish other than those mentioned in 08 01 13
08 01 16	aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
08 01 20	aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19
08 03	**wastes from MFSU of printing inks**
08 03 07	aqueous sludges containing ink
08 03 08	aqueous liquid waste containing ink
08 03 13	waste ink other than those mentioned in 08 03 12
08 03 15	ink sludges other than those mentioned in 08 03 14
08 04	**wastes from MFSU of adhesives and sealants (including water proofing products)**
08 04 14	aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13
08 04 16	aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15
10	**Wastes from thermal processes**
10 02	**wastes from the iron and steel industry**
10 02 12	wastes from cooling-water treatment other than those mentioned in 10 02 11
11	**Wastes from chemical surface treatment and coating of metals and other materials; non-ferrous hydro-metallurgy**

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
11 01	**Wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)**
11 01 12	aqueous rinsing liquids other than those mentioned in 11 01 11
16	**Wastes not otherwise specified in the list**
16 01	**end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)**
16 01 15	antifreeze fluids other than those mentioned in 16 01 14
16 03	**off-specification batches and unused products**
16 03 06	organic liquid wastes other than those mentioned in 16 03 05
16 10	**aqueous liquid wastes destined for off-site treatment**
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01
16 10 04	aqueous concentrates other than those mentioned in 16 10 03
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 01	**wastes from incineration or pyrolysis of waste**
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 06	sludges/effluents from physico/chemical treatment other than those mentioned in 19 02 05
19 05	**wastes from aerobic treatment of solid wastes**
19 05 03	off-specification liquid compost that arise from treatment of municipal, vegetable waste types.
19 06	**wastes from anaerobic treatment of waste**
19 06 03	liquor from anaerobic treatment of municipal waste
19 06 04	digestate from anaerobic treatment of source segregated biodegradable waste
19 06 05	liquor from anaerobic treatment of animal and vegetable waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
19 07	**landfill leachate**
19 07 03	landfill leachate other than those mentioned in 19 07 02
19 08	**wastes from waste water treatment plants not otherwise specified**
19 08 01	screenings
19 08 02	waste from desanding
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 09	**wastes from the preparation of water intended for human consumption or water for industrial use**
19 09 02	sludges from water clarification
19 09 03	sludges from decarbonation
19 09 06	solutions and sludges from regeneration of ion exchangers
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 12	aqueous liquid wastes and aqueous concentrates (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
19 13	**wastes from soil and groundwater remediation**
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
19 13 06	sludges from groundwater remediation other than those mentioned in 19 13 05
19 13 08	aqueous liquid wastes and aqueous concentrates from groundwater remediation other than those mentioned in 19 13 07
20	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**
20 01	**separately collected fractions (except 15 01)**
20 01 08	biodegradable kitchen and canteen waste

Table S2.3 Permitted waste types and quantities for non-hazardous waste storage and treatment (Head of Works) (AR11)	
Maximum quantity	**Annual throughput shall not exceed 300,000 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**
20 01 25	edible oil and fat
20 01 30	detergents other than those mentioned in 20 01 29
20 02	**garden and park wastes (including cemetery waste)**
20 02 01	biodegradable waste - liquid wastes and mixed concentrates
20 03	**other municipal wastes**
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 04	septic tank sludge
20 03 06	waste from sewage cleaning

Table S2.4 Permitted waste types and quantities for storage and pre-treatment of solid waste (Moos skip operation) (AR12)	
Maximum quantity	**Annual throughput shall not exceed 10,000 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 08	**wastes from waste water treatment plants not otherwise specified**
19 08 01	screenings

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 SJ 51753 13543	CHP engine 1 stack 1.3MWth input [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 SJ 51755 13552	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
Existing combustion plant (less than 1 MW)						
Point A3 on site plan in schedule 7 SJ 51781 13537	Boiler 1 stack 0.4MWth input [burning biogas and gas oil]	--	--	--	--	--
Point A4 on site plan in schedule 7 SJ 51783 13536	Boiler 2 stack 0.4MWth input [burning biogas and gas oil]	--	--	--	--	--
Point A5 on site plan in schedule 7 SJ 51776 13541	Boiler 3 stack 0.5MWth input [burning biogas and gas oil]	--	--	--	--	--
Point A10 on site plan in schedule 7 SJ 51827 13556	OCU 1 - Channelled emissions from the	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling

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**
	dry scrubber and carbon filter [note 6]					NIOSH 6013 for analysis
		Ammonia	20 mg/m^3	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Point A10 on site plan in schedule 7 SJ 51827 13556	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 SJ 51806 13543	OCU 2 - Channelled emissions from the dry scrubbers and a carbon filters [note 6]	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis
		Ammonia	20 mg/m^3	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Point A11 on site plan in schedule 7 SJ 51806 13543	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 SJ 51837 13514	OCU 3 - Channelled emissions from the dry scrubber and carbon filter [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

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**
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Point A12 on site plan in schedule 7 SJ 51837 13514	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 A13 on site plan in schedule 7 SJ 51847 13489	OCU 4 - Channelled emissions from the dry scrubber and carbon filter [note 6]	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis
		Ammonia	20 mg/m^3	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Point A13 on site plan in schedule 7 SJ 51847 13489	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 A14 on site plan in schedule 7 SJ 51894 13454	OCU 5 - Channelled emissions from the catalytic iron filter, dry scrubber and carbon filter [note 6]	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis
		Ammonia	20 mg/m^3	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Point A14 on site plan in schedule 7	Channelled emissions to air from treatment of	Hydrogen chloride (HCl)	5 mg/m^3 [note 5]	Average over	Once every 6 months	EN 1911

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**
SJ 51894 13454	water-based liquid waste			sample period		
		TVOC	20 mg/m^3 [note 5]	Average over sample period	Once every 6 months	EN 12619
Pressure relief valves [Point A6 on site plan in schedule 7] SJ 51766 13560	Biogas holder	Biogas release and operational events	No limit set	Recorded duration and frequency	Daily inspection	--
Pressure relief valves [Points A7, A8 and A9 on site plan in schedule 7] SJ 51779 13532 SJ 51794 13521 SJ 51809 13510	Digesters	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 S6 on site plan in schedule 7 emission to River Severn [via Monkmoor waste water treatment works]	Site surface water/water from bunded areas, Digested filtrate returns,	Oil and grease	No visible oil or grease	--	Weekly	Visual assessment
		Benzene, toluene, ethylbenzene, xylene (BTEX)	--	Spot sample or flow-proportional	Once every month	EN ISO 15680

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**
SJ 51778 13702 SJ 51783 13706 SJ 51787 13704 SJ 51740 13541 SJ 51862 13505	primary and SAS effluent.	Hydrocarbon oil index (HOI)	10 mg/l	composite sample	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
		PFOA and PFOS	--		Once every six months	--
S1 on site plan in schedule 7 emission River Severn [via Monkmoor waste water treatment works] SJ 51692 13643	Discharge of tankered waste waters to the head of works	-- [Note 3]	-- [Note 3]	-- [Note 3]	-- [Note 3]	-- [Note 3]

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**
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 IC6a, IC6b 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 IC9a, IC9b.						

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 digester [& biogas storage holders]	Flow	Continuous	In accordance with EU weights and measures Regulations	Process monitoring to be recorded using a SCADA system where relevant. 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	
	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			
Digester(s) and storage tank(s)	Integrity checks	Weekly	Visual assessment	In accordance with design

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**
				specification and tank integrity checks.
Digester(s)	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; Digester(s) and storage tank(s)	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 stack(s)	VOCs including methane	Annually	BS EN 12619	Total annual VOCs emissions from the CHP engine(s) to be calculated and submitted to the Environment Agency.
	Exhaust gas temperature		Traceable to National Standards	--
	Exhaust gas pressure		Traceable to National Standards	--

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**
	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.
	Re-seating	Weekly inspection	Visual	Operator must ensure that valves are re-seated after release in accordance with the manufacturer's design.

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**
	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
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				
Scrubbers (dry)				
Scrubbers (A10 - A14)	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 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.
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	
	Moisture content or humidity – inlet and outlet (for dry scrubbers only)	Daily	Moisture meter	
	Moisture content or humidity – outlet (for wet scrubbers if used before other abatement systems)	Daily	Moisture meter	
	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	EN ISO 21877	Action levels to be agreed on

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**
		writing by the Environment Agency.		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.
Carbon filters				
Carbon filters (A10 – A14)	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(s) to be replaced in accordance with manufacturer's recommendations. Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	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

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**
				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.
Catalytic iron filters				
Catalytic iron filter (A14)	Catalyst bed temperature	Daily	Temperature probe	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
	Gas temperature – inlet and outlet	Continuous	Temperature sensor or temperature probe	
	Gas moisture or humidity	Daily	Moisture meter or humidity sensor	
	Pressure drop across the catalyst bed	Weekly [Note 1]	Pressure gauges or differential pressure sensors	

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**
	Gas flow rate – inlet	Continuous and weekly checks for calibration accuracy	Gas flow meter	3.3, the odour management plan and manufacturer's recommendations. Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	Oxygen concentration - inlet	Continuous and daily checks	Paramagnetic sensors (BS EN 14789 for oxygen concentration) Manual review of oxygen data daily to verify oxygen levels are within parameters specified in manufacturer's instructions.	
	Sulphur deposition	Monthly	Visual assessment	
	Sulphur deposition analysis	Every 6 months or as agreed in writing by the Environment Agency	Periodic laboratory analysis of catalyst samples	
	Catalyst activity	Every 3 months or as agreed in writing by the Environment Agency	As specified by manufacturer's instructions or periodic laboratory analysis of catalyst samples	
	Efficiency assessment	Annual	Air-flow distribution and emission removal efficiency (BS EN 13725 for odour removal)	
	Hydrogen sulphide – inlet and outlet gas stream	Daily or as agreed in writing by the Environment Agency.	Gas analysers or as agreed in the odour management plan and approved by the	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**
			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.
	Ammonia – inlet	Monthly or as agreed in writing by the Environment Agency.	Gas analysers calibrated for ammonia detection or as agreed in the odour management plan and approved by the Environment Agency	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.
Note 1 – An additional pressure drop monitoring check shall also be completed after maintenance or after operational changes.				

Table S3.5 Emissions to sewer, effluent treatment plant or other transfers off-site – Monitoring points			
Effluent(s) and discharge point(s)	**Monitoring type**	**Monitoring point NGR**	**Monitoring point reference**
T1 on site plan in schedule 7 emission to River Severn [via Monkmoor WwTW]	Effluent monitoring	SJ 51692 13643	Point S1 [Discharge to WwTW] in Schedule 7
S2 on site plan in schedule 7 emission to River Severn [via Monkmoor WwTW]	Effluent monitoring	SJ 51778 13702	Point S2 [Discharge to WwTW] in Schedule 7
S3 on site plan in schedule 7 emission to River Severn [via Monkmoor WwTW]	Effluent monitoring	SJ 51783 13706	Point S3 [Discharge to WwTW] in Schedule 7
S4 on site plan in schedule 7 emission to River Severn [via Monkmoor WwTW]	Effluent monitoring	SJ 51787 13704	Point S4 [Discharge to WwTW] in Schedule 7
S5 on site plan in schedule 7 emission to River Severn [via Monkmoor WwTW]	Effluent monitoring	SJ 51740 13541	Point S5 [Discharge to WwTW] in Schedule 7
S6 on site plan in schedule 7 emission to River Severn [via Monkmoor WwTW]	Effluent monitoring	SJ 51862 13505	Point S6 [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 boilers Parameters as required by condition 3.5.1.	A1	Every 12 months	1 January
Emissions to air from odour abatement plant Parameters as required by condition 3.5.1.	A10, A11, A12, A13 and A14	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.	A10, A11, A12, A13 and A14	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 IC6a, IC6b, IC9a and IC9b	Upon completion of IC6a, IC6b, IC9a and IC9b
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

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	11/03/2025
Process monitoring	Form process 1 or other form as agreed in writing by the Environment Agency	11/03/2025
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	11/03/2025

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	11/03/2025
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	11/03/2025
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	11/03/2025
Waste returns	E-waste Return Form or other form as agreed in writing by the Environment Agency	--

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

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

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

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	

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

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

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

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

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

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

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

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

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

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

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

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

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

“head of works” means the discharge location where imported wastes are discharged into the WwTW. The waste operations associated with the head of works is either via the direct discharge of tankered waste into the WwTW or the temporary storage of waste in a storage tank before discharge of waste into the WwTW. The waste water treatment works are operated under the requirements of the Urban Waste Water Treatment Directive.

“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.

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

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

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

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

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

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

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

“operator” means in relation to a regulated facility:

(a) the person who has control over the operation of the regulated facility,

(b) if the regulated facility has not yet been put into operation, the person who will have control over the regulated facility when it is put into operation, or

(c) if a regulated facility authorised by an environmental permit ceases to be in operation, the person who holds the environmental permit

“pests” means Birds, Vermin and Insects.

“PFOA” means Perfluorooctanoic acid.

“PFOS” means Perfluorooctanesulphonic acid.

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

(a) be harmful to human health or the quality of the environment,

(b) cause offence to a human sense,

(c) result in damage to material property, or

(d) impair or interfere with amenities and other legitimate uses of the environment.

“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.

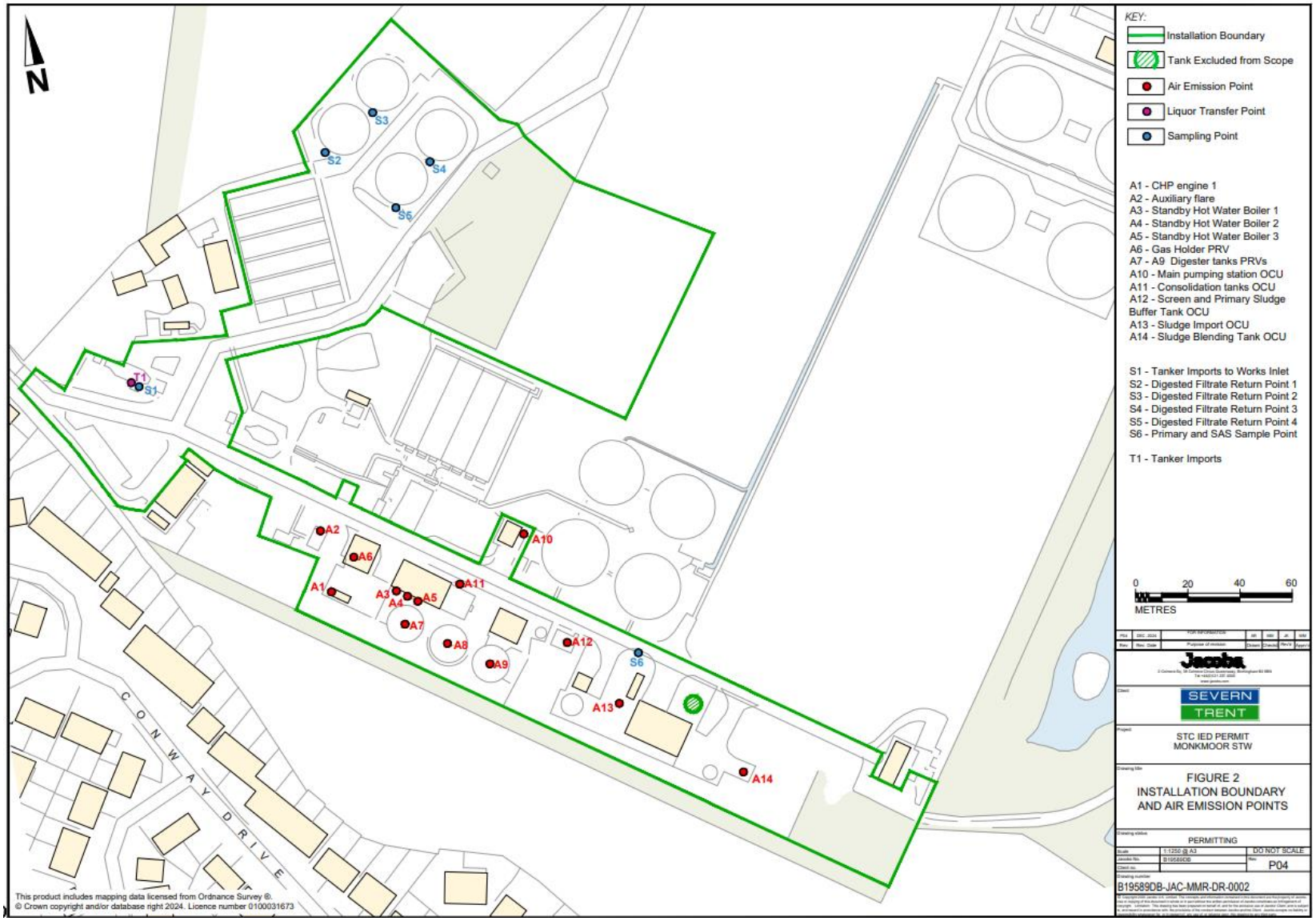
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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



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Annex 1 of MCP

1. Rated thermal input (MW) of the medium combustion plant.	CHP engine 1
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	CHP engine fuelled on biogas
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Gaseous fuels other than natural gas
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	CHP 1 – April 2018
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 1 - 8,760 hours per year
7. Where the option of exemption under Article 6(3) or Article 6(8) is used, a declaration signed by the operator that the medium combustion plant will not be operated more than the number of hours referred to in those paragraphs.	N/A
8. Name and registered office of the operator and, in the case of stationary medium combustion plants, the address where the plant is located.	**Company name and registered office:** Severn Trent Water Limited Severn Trent Centre, 2 St John's Street, Coventry, CV1 2LV **Address where the plant is located:** Monkmoor Sewage Treatment Works, Monkmoor Road Shrewsbury Shropshire SY2 5TL

END OF PERMIT