Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Exeter Waste to Energy Limited

Hill Barton Energy Generation Plant
Hill Barton Business Park
Sidmouth Road
Clyst St Mary
Exeter
Devon
EX5 1DR

Permit number

EPR/EP3105BJ

Hill Barton Energy Generation Plant
Permit number EPR/EP3105BJ

Introductory note

This introductory note does not form a part of the permit

This permit controls the operation of a waste incineration plant. The relevant listed activity in schedule 1 of the Environmental Permitting Regulations is section 5.1 Part A(1)(a).

The main features of the installation are as follows:

The installation is located approximately 3km east of Exeter, Devon, within the Hill Barton Industrial Estate. The site is accessed through the industrial estate off the A3052 Exeter to Sidmouth Road. The surrounding land generally consists of woodland and agricultural fields to the north and west and industrial and commercial uses associated with the business park to the south and east. There are a small number of discrete residential properties located within 500m of the boundary of the site. There are ecological receptors within the relevant screening distances of the site, namely the East Devon Pebblebed Heaths Special Area of Conservation, the Exe Estuary Special Protection Area (SPA) and Ramsar, the East Devon Heaths SPA and the Farringdon School Local Wildlife Site.

The installation will accept up to 87,000 tonnes of pre-treated waste per year comprising refuse derived fuel (RDF) and other combustible wastes from waste treatment sites. These wastes will be burnt in two lines comprising a step grate gasifier, a thermal oxidizer, a boiler, an economizer and a flue gas cleaning system.

Waste is pushed into the gasifier which operates under negative pressure in three zones: drying, gasification and hold/discharge. Drying: Heat generated from the refractory together with turbulence from the recirculated flue gas evaporates moisture from the waste feed. Gasification: The dried waste feed then undergoes pyrolysis to produce a syngas. Hold/discharge: Ash is discharged at this point and the syngas is directed to the thermal oxidation unit where it is oxidised generating flue gas and fly ash.

A selective non-catalytic reduction system using urea as the reagent is employed to reduce the emissions of NOx and the flue gases are then directed to a heat recovery unit. The waste heat recovery boiler generates steam used in a single turbine to produce electricity, providing a gross export of approximately 9.1MWe (8.2MWe net) to the national grid in electricity only mode. The flue gas then passes through a multi-bag filter and a cleaning system before being discharged to atmosphere via a single 28m high stack with two flues. The cleaning system includes the injection of sodium bicarbonate and activated carbon to neutralize acid gases and reduce particulates, heavy metal vapours, dioxins and furans.

Ash discharged from the process is collected in skips prior to export from the site for recovery. Residues from the flue gas cleaning systems will be collected separately in silos and will sent off site for recovery.

The plant will be fitted with a control and monitoring system to ensure adequate control of the process and the flue gas will be monitored using a continuous emissions monitoring system (CEMS).

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

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/EP3105BJ/A001	Duly made 28/07/2020	Application for an incinerator with a capacity of 87,000 tonnes of non-hazardous wastes per year.
Additional information received	09/02/2021	Amended site boundary, revised Fire Prevention Plan, Sankey Diagram, options appraisal for furnace design, revised waste types, diesel generator information, confirmation of fuel for auxiliary burners and confirmation of site drainage and surfacing.

Status log of the permit		
Description	**Date**	**Comments**
Additional information received	20/05/2021	Confirmation of back-up CEMS and updated abnormal emissions modelling results.
Permit determined EPR/EP3105BJ (Billing reference: EP3105BJ)	06/07/2021	Permit issued to Exeter Waste to Energy Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/EP3105BJ

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

Exeter Waste to Energy Limited ("the operator"),

whose registered office is

Hill Barton Business Park
Sidmouth Road
Clyst St Mary
Exeter
Devon
EX5 1DR

company registration number **10695766**

to operate an installation at

Hill Barton Energy Generation Plant
Hill Barton Business Park
Sidmouth Road
Clyst St Mary
Exeter
Devon
EX5 1DR

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

Name	Date
Claire Roberts	**06/07/2021**

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.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and 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.

1.2.2 The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.

1.2.3 The operator shall review the viability of Combined Heat and Power (CHP) implementation at least every 4 years, or in response to any of the following factors, whichever comes sooner:

(a) new plans for significant developments within 15 km of the installation;

(b) changes to the Local Plan;

(c) changes to the UK CHP Development Map or similar; and

(d) new financial or fiscal incentives for CHP.

The results shall be reported to the Agency within 2 months of each review, including where there has been no change to the original assessment in respect of the above factors

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

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

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

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

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1, table S1.1 (the "activities").

2.2 The site

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

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan , and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.3 Any raw materials or fuels listed in schedule 2, table S2.1 shall conform to the specifications set out in that table.

2.3.4 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2, table S2.2; and

(b) it conforms to the description in the documentation supplied by the producer or holder.

2.3.5 Waste paper, metal, plastic or glass that has been separately collected for the purpose of preparing for re-use or recycling shall not be accepted. Waste from the treatment of these separately collected wastes shall only be accepted if incineration delivers the best environmental outcome in accordance with regulation 12 of the Waste (England and Wales) Regulations 2011.

2.3.6 Separately collected fractions other than those listed in condition 2.3.5 shall not be accepted unless they are unsuitable for recovery by recycling.

2.3.7 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.

2.3.8 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.

2.3.9 Waste shall not be charged, or shall cease to be charged, if:

(a) the combustion chamber temperature is below, or falls below, 850°C; or

(b) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded; or

(c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than during abnormal operation or periods of OTNOC; or

(d) Any continuous emission limit value in schedule 3 table S3.1(b) is exceeded other than during abnormal operation; or

(e) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3, table S3.1 are unavailable other than during abnormal operation; or

(f) there is a stoppage, disturbance or failure of the activated carbon abatement system other than during abnormal operation.

2.3.10 The operator shall have at least one auxiliary burner in each line which shall be operated at start up, shut down and as required during operation to ensure that the operating temperature specified in condition 2.3.9 is maintained as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.9 is maintained in the combustion chamber, such burner(s) shall be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.

2.3.11 The operator shall record the beginning and end of each period of “abnormal operation”.

2.3.12 During a period of “abnormal operation” or OTNOC, the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.

2.3.13 Where, during “ abnormal operation”, on an incineration line, any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:

(a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3, table S3.1 due to stoppages, disturbances or failures of the abatement plant, or continuous emission monitor(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;

(b) there is a technically unavoidable stoppage, disturbance or failure of the activated carbon abatement system for a total of 4 hours uninterrupted duration;

(c) the cumulative duration of “abnormal operation” periods over 1 calendar year has reached 60 hours;

(d) continuous measurement shows that an emission exceeds any emission limit value in schedule 3, table S3.1 (a).

(e) continuous emission monitors or alternative techniques to demonstrate compliance with the emission limit value(s) for particulates, TOC and / or CO in schedule 3 table S3.1(a) as agreed in writing with the Environment Agency, are unavailable.

2.3.14 The operator shall interpret the end of the period of “abnormal operation” as the earliest of the following:

(a) when the failed equipment is repaired and brought back into normal operation;

(b) when the operator initiates a shut down of the waste combustion activity, as described in the application or as agreed in writing with the Environment Agency;

(c) when a period of four hours has elapsed from the start of the “abnormal operation”;

(d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached on an incineration line.

2.3.15 Bottom ash and APC residues shall not be mixed.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1, table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.

3.1.2 The limits given in schedule 3, subject to condition 3.2.1, shall not be exceeded.

3.1.3 Wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3, table S3.5. Additional samples shall be taken and tested and appropriate action taken, whenever:

(a) disposal or recovery routes change; or

(b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.

3.2 Emissions limits and monitoring for emission to air for incineration plant

3.2.1 The limits for emissions to air apply as follows:

(a) The limits in schedule 3, table S3.1 shall not be exceeded except during periods of abnormal operation or OTNOC.

(b) The limits in schedule 3, table S3.1 (a) shall not be exceeded.

(c) The limits in schedule 3, table S3.1 (b) shall not be exceeded except during abnormal operation.

3.2.2 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, tables S3.1, S3.1(a) and S3.1(b); the Continuous Emission Monitors shall be used such that:

(a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages of the emission limit values:

- Carbon monoxide 10%
- Sulphur dioxide 20%
- Oxides of nitrogen (NO & NO_2 expressed as NO_2) 20%
- Particulate matter 30%
- Total organic carbon (TOC) 30%
- Hydrogen chloride 40%
- Ammonia 40%

(b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.2.2 (a).

(c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour. The number of half-hourly averages so validated shall not exceed five per day;

(d) daily average values shall be calculated as follows:

(i) for the daily average values in table S3.1, the average of valid half hourly averages over consecutive discrete periods of 24 hours as described in the application excluding half hourly averages during periods of abnormal operation and OTNOC. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;

(ii) for the daily average values in table S3.1(b), the average of valid half hourly averages over consecutive discrete periods of 24 hours as described in the application excluding half hourly averages during periods of abnormal operation. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;

(e) no more than ten daily average values per year shall be determined not to be valid.

3.3 Emissions of substances not controlled by emission limits

3.3.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.3.2 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.

3.3.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3.4 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.

3.4 Odour

3.4.1 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.

3.4.2 The operator shall:

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

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

3.5 Noise and vibration

3.5.1 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.

3.5.2 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.

3.6 Monitoring

3.6.1 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, S3.1(a) and S3.1(b);

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

(c) residue quality in table S3.5.

3.6.2 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.

3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater

than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.

3.6.4 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, S3.1(a) and S3.1(b) unless otherwise agreed in writing by the Environment Agency.

3.7 Pests

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

3.7.2 The operator shall:

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

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

3.8 Fire prevention

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

3.8.2 The operator shall:

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

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

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:

off-site environmental effects; and

matters which affect the condition of the land and groundwater.

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

4.2 Reporting

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

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year using the annual report form specified in schedule 4, table S4.4 or otherwise in a format agreed with the Environment Agency. 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;

(c) the performance parameters set out in schedule 4, table S4.3; and

(d) the functioning and monitoring of the incineration plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

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

(a) in respect of the parameters and emission points specified in schedule 4, table S4.1;

(b) for the reporting periods specified in schedule 4, table S4.1 and using the forms specified in schedule 4, table S4.4; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

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

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

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(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.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

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

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	S5.1 A1 (b)	The incineration of non-hazardous waste in a waste incineration plant with a capacity of 3 tonnes per hour or more.	From receipt of waste to emission of exhaust gas and disposal of waste arising. Waste is incinerated in two step grate gasifiers. Waste types and quantities as specified in Table S2.2 of this permit.
Directly Associated Activities			
AR2	-	Energy generation	Generation of 9.1MW electrical power using a steam turbine from energy recovered from the flue gases.
AR3	-	A medium combustion plant comprising a back-up diesel generator	For providing emergency electrical power to the plant in the event of supply interruption. Operation for no more than 500 hours per year.
AR4	-	Surface water management	From collection of uncontaminated surface water drainage and roof drainage to discharge to off-site drainage system into settlement pond.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/EP3105BJ/A001	Best Available Techniques and Operating Techniques, dated July 2020, excluding section 2.2.1 of Appendix 5.	28/07/2020
Response to Schedule 5 Notice dated 05/01/2021	Response to questions: 1.Site Layout Plan, reference Drawing 001, dated February 2021 2. Proposed Surface Treatment plan, dated 03/02/21 4.Fire Prevention Plan, dated February 2021 8.Fuel for start up/shut down and auxiliary burners 9.Water use 10.Waste types 13.Details of diesel generator MCP	09/02/2021
Response to request for information dated 06/05/2021	Response to question 3 regarding back-up CEMS	20/05/2021

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The operator shall submit a written proposal to the Environment Agency to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission points A1 and A2, identifying the fractions within the PM_{10}, and $PM_{2.5}$ ranges. On receipt of written approval from the Environment Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Environment Agency a report on the results.	Within 6 months of the completion of commissioning.
IC2	The operator shall submit a written report to the Environment Agency on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions and confirm that the Environmental Management System (EMS) has been updated accordingly.	Within 4 months of the completion of commissioning.
IC3	The operator shall notify the Environment Agency of the proposed date(s) that validation testing is planned for.	Notification at least 3 weeks prior to validation testing.
	During commissioning the operator shall carry out validation testing to validate the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load and most unfavourable operating conditions. The validation shall be to the methodology as approved through pre-operational condition PO9.	Validation tests completed before the end of commissioning.
	The operator shall submit a written report to the Environment Agency on the validation of residence time, oxygen and temperature whilst operating under normal load, minimum turn down and overload conditions. The report shall identify the process controls used to ensure residence time and temperature requirements are complied with during operation of the incineration plant.	Report submitted within 2 months of the completion of commissioning.
IC4	The operator shall submit a written report to the Environment Agency describing the performance and optimisation of: • The sodium bicarbonate injection system for minimisation of acid gas emissions. • The carbon injection system for minimisation of dioxin and heavy metal emissions. • The Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NO_x). The report shall include an initial assessment of the level of NO_x, N_2O and NH_3 emissions that can be achieved under optimum operating conditions.	Within 4 months of the completion of commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	The operator shall carry out a further assessment of the performance of the SNCR system and submit a written report to the Environment Agency on the feasibility of complying with an emission limit value (ELV) for NO_x of 100 mg/Nm^3 as a daily average, including a description of any relevant cross-media effects identified. If an ELV for NO_x of 100 mg/Nm^3 as a daily average is determined not to be feasible, the report shall propose an alternative ELV which would provide an equivalent level of NO_x reduction on a long-term basis such as an annual mass emission limit or percentile-based ELV.	Within 12 months of the completion of commissioning.
IC5	The operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values: Cd, As, Cr, Ni. A report on the assessment shall be made to the Environment Agency. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant ES. In the event that the assessment shows that an environmental standard can be exceeded, the report shall include proposals for further investigative work.	15 months from the completion of commissioning.
IC6	The operator shall submit a written summary report to the Environment Agency to confirm that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 and Table S3.1(a) complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3. The report shall include the results of calibration and verification testing.	Initial calibration report to be submitted to the Agency within 3 months of completion of commissioning. Full summary evidence compliance report to be submitted within 18 months of completion of commissioning.
IC7	Where the operator has received confirmation that the owner of the district heating network will accept heat from the process, the operator shall submit to the Environment Agency for approval a plan for implementing the district heating scheme identified in the CHP Readiness Assessment, dated July 2020. The plan shall include as a minimum: • A timescale for implementation; • A description of any dependencies or further approvals required; • A description of any changes that will need to be made to the plant; • Whether there will be any operational changes which could affect the environmental impact of the installation; and • Consideration of whether a permit variation will be required.	Two years from the commencement of operations.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	If required to do so by the Environment Agency the operator shall implement the plan in accordance with the Environment Agency's written approval.	
IC8	During commissioning, the operator shall carry out tests to demonstrate whether the furnace combustion air will ensure that negative pressure is achieved throughout the reception hall. The tests shall demonstrate whether air is pulled through the reception hall and bunker area and into the furnace with dead spots minimised. The operator shall submit a report to the Environment Agency, for approval, summarising the findings along with any proposed improvements if required	Within 3 months of completion of commissioning.
IC9	The operator shall carry out a programme of dioxin and dioxin like PCB monitoring over a period and frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether dioxin emissions can be considered to be stable.	Within 3 months of completion of commissioning or as agreed in writing with the Environment Agency.
IC10	The operator shall carry out a programme of mercury monitoring over a period and frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether the waste feed to the plant can be proven to have a low and stable mercury content.	Within 3 months of completion of commissioning or as agreed in writing with the Environment Agency.
IC11	The operator shall submit a report to the Environment Agency for approval on start-up and shut-down conditions over the first 12 months of operation. The report shall identify any amendments to the start-up and shut-down definitions that were described in the application.	Within 15 months of completion of commissioning or as agreed in writing with the Environment Agency.
IC12	During commissioning, the operator shall carry out tests to assess whether the air monitoring locations meet the requirements of BS EN 15259 and supporting Method Implementation Document (MID). A written report shall be submitted for approval setting out the results and conclusions of the assessment including, where necessary, proposals for improvements to meet the requirements. Where notified in writing by the Environment Agency that the requirements are not met, the operator shall submit proposals or further proposals for rectifying this in accordance with the time scale in the notification. The proposals shall be implemented in accordance with the Environment Agency's written approval.	Within 3 months of completion of commissioning or as agreed in writing with the Environment Agency.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO1	Prior to the commencement of commissioning, the operator shall send: • A summary of the site Environment Management System (EMS); and

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
	• A copy of the full OTNOC management plan which shall be prepared in accordance with BAT 18 of the BAT conclusions to the Environment Agency and obtain the Environment Agency's written approval to the EMS summary and the full OTNOC management plan. The operator shall make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Environment Agency web guide on developing a management system for environmental permits (found on www.gov.uk) and BAT 1 of the incineration BAT conclusions. The EMS shall include the approved OTNOC management plan. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.
PO2	Prior to the commencement of commissioning, the operator shall send a report to the Environment Agency, and obtain the Environment Agency's written approval to it, which contains a comprehensive review of the options available for utilising the heat generated, including operating as CHP or supplying district heating, by the waste incineration process in order to ensure that it is recovered as far as practicable. The review shall also confirm that the supply of heat to the potential district heating as set out in the CHP Readiness Assessment, dated July 2020, submitted with the Application is still a viable option once operation of the pant has demonstrated a stable supply of heat is available. The review shall detail any identified proposals for improving the recovery and utilisation of heat and shall provide a timetable for their implementation.
PO3	Prior to the commencement of commissioning, the operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a protocol for the sampling and testing of incinerator bottom ash for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved.
PO4	Prior to the commencement of commissioning, the operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
PO5	Prior to the commencement of commissioning, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, detailing the waste acceptance procedure to be used at the site. The waste acceptance procedure shall include the process and systems by which wastes unsuitable for incineration at the site will be controlled. The procedure shall be implemented in accordance with the written approval from the Environment Agency.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO6	No later than one month after the final design of the furnace and combustion chamber, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the computational fluid dynamic (CFD) modelling. The report shall explain how the furnace has been designed to comply with the residence time and temperature requirements as defined by Chapter IV and Annex VI of the IED whilst operating under normal load and the most unfavourable operating conditions (including minimum turn down and overload conditions), and that the design includes sufficient monitoring ports to support subsequent validation of these requirements during commissioning.
PO7	Prior to the commencement of commissioning, the operator shall submit a report, and obtain the Environment Agency's written approval to it, on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED.
PO8	At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency), the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, specifying arrangements for continuous and periodic monitoring of emissions to air to comply with Environment Agency guidance notes M1, M2 and M20. The report shall include the following: • Plant and equipment details, including accreditation to MCERTS. • Methods and standards for sampling and analysis. • Details of monitoring locations, access and working platforms, including the design of the ports for PM_{10} and $PM_{2.5}$ sampling.
PO9	At least 3 months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall submit, for approval by the Environment Agency, a methodology (having regard to Technical Report P4-100/TR Part 2 Validation of Combustion Conditions) to verify the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load, minimum turn down and overload conditions.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Diesel fuel	< 0.1% sulphur content

Table S2.2 Permitted waste types and quantities for gasification plant	
Maximum quantity	No more than 87,000 tonnes per year
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 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 10	combustible waste (refuse derived fuel)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1, A2	Particulate matter	Flue gas emissions	30 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Particulate matter	Flue gas emissions	5 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Total Organic Carbon (TOC)	Flue gas emissions	20 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Total Organic Carbon (TOC)	Flue gas emissions	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Hydrogen chloride	Flue gas emissions	60 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Hydrogen chloride	Flue gas emissions	6 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Hydrogen fluoride	Flue gas emissions	1 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year. Then Bi-annual	BS ISO 15713
A1, A2	Carbon monoxide	Flue gas emissions	100 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Carbon monoxide	Flue gas emissions	50 mg/m^3	daily average	Continuous measurement	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1, A2	Sulphur dioxide	Flue gas emissions	200 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Sulphur dioxide	Flue gas emissions	30 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Flue gas emissions	400 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Flue gas emissions	120 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Cadmium & thallium and their compounds (total)	Flue gas emissions	0.02 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year. Then Bi-annual	BS EN 14385
A1, A2	Mercury and its compounds	Flue gas emissions	0.02 mg/m^3 Limit does not apply if continuous monitoring has been specified by the Environment Agency after completion of IC9	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year and accelerated monitoring at frequency agreed through IC 10. Then Bi-annual. Not required if continuous monitoring has been specified by the Environment Agency after completion of IC10	BS EN 13211 or
A1, A2	Mercury and its compounds	Flue gas emissions	0.02 mg/m^3	Daily average	Continuous Not required unless continuous monitoring has been specified by the Environment Agency after completion of IC10.	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1, A2	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Flue gas emissions	0.3 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year. Then Bi-annual	BS EN 14385
A1, A2	Ammonia (NH_3)	Flue gas emissions	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Nitrous oxide (N_2O)	Flue gas emissions	No limit set	Average of three consecutive measurements of at least 30 minutes each	Annually	BS EN ISO 21258
A1, A2	Dioxins / furans (I-TEQ)	Flue gas emissions	0.04 ng/m^3 or 0.06 ng/m^3 if long term limit is specified by the Environment Agency after completion of IC8	periodic over minimum 6 hours, maximum 8 hour period or value over sampling period of 2 to 4 weeks for long term sampling	Monthly for first 6 months and accelerated monitoring as agreed through IC9, quarterly for following 6 months and then bi-annually; or long term monitoring if specified by the Environment Agency after completion of IC9	BS EN 1948 Parts 1, 2 and 3 Or long term sampling method if specified by the Environment Agency after completion of IC9
A1, A2	Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)	Flue gas emissions	No limit set	periodic over minimum 6 hours, maximum 8 hour period or value over sampling period of 2 to 4	Monthly for first 6 months and accelerated monitoring as agreed through IC9, quarterly for following 6 months and then bi-annually; or	BS EN 1948 Parts 1, 2 and 4 Or long term sampling method if specified by the Environment Agency after completion of IC9

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
				weeks for long term sampling	long term monitoring if specified by the Environment Agency after completion of IC9. No monitoring is required if emissions have been shown to be below 0.01 ng/m^3 as agreed with the Environment Agency.	
A1, A2	Dioxins / furans (WHO-TEQ Humans / Mammals, Fish, Birds)	Flue gas emissions	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
A1, A2	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	Flue gas emissions	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year then annually	BS ISO 11338 Parts 1 and 2.
A3	Oxides of nitrogen (NO and NO_2 expressed as NO_2	Exhaust from back up diesel generator	No limit set	periodic	First measurement within 4 months of first operation and then after 3 times the maximum average annual operating hours has elapsed or no less than every 5 years.	BS EN 14792
A3	Carbon monoxide	Exhaust from back-up electrical generator	No limit set	periodic	First measurement within 4 months of first operation and then after 3 times the maximum average annual operating hours has elapsed or no less than every 5 years.	BS EN 15058

Table S3.1(a) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1, A2	Particulate matter	Flue gas emissions	150 mg/m^3	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure or during failure of the continuous emission monitor
A1, A2	Total Organic Carbon (TOC)	Flue gas emissions	20 mg/m^3	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure or during failure of the continuous emission monitor
A1, A2	Carbon monoxide	Flue gas emissions	100 mg/m^3	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure or during failure of the continuous emission monitor

Table S3.1(b) Point source emissions to air during OTNOC – emission limits (IED Annex VI limits) and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1, A2	As specified in the OTNOC management plan as approved after completion of pre-operational condition PO1	Flue gas emissions	As specified in the OTNOC management plan as approved after completion of pre-operational condition PO1			
A1, A2	Particulate matter	Flue gas emissions	30 mg/m^3	½-hr average	Continuous measurement	BS EN 14181

Table S3.1(b) Point source emissions to air during OTNOC – emission limits (IED Annex VI limits) and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1, A2	Particulate matter	Flue gas emissions	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Total Organic Carbon (TOC)	Flue gas emissions	20 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Total Organic Carbon (TOC)	Flue gas emissions	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Hydrogen chloride	Flue gas emissions	60 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Hydrogen chloride	Flue gas emissions	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Hydrogen fluoride	Flue gas emissions	2 mg/m^3	periodic over minimum 1-hour period	Quarterly in first year. Then Bi-annual	BS ISO 15713
A1, A2	Carbon monoxide	Flue gas emissions	100 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Carbon monoxide	Flue gas emissions	50 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Sulphur dioxide	Flue gas emissions	200 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Sulphur dioxide	Flue gas emissions	50 mg/m^3	daily average	Continuous measurement	BS EN 14181
A1, A2	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Flue gas emissions	400 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A1, A2	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Flue gas emissions	200 mg/m^3	daily average	Continuous measurement	BS EN 14181

Table S3.1(b) Point source emissions to air during OTNOC – emission limits (IED Annex VI limits) and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1, A2	Cadmium & thallium and their compounds (total)	Flue gas emissions	0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A1, A2	Mercury and its compounds	Flue gas emissions	0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 13211
A1, A2	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Flue gas emissions	0.5 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A1, A2	Ammonia (NH_3)	Flue gas emissions	No limit set	daily average	Continuous measurement	BS EN 14181
A1, A2	Nitrous oxide (N_2O)	Flue gas emissions	No limit set	periodic over minimum 1-hour period	For periodic measurement, quarterly in the first year of operation, then bi-annual	BS EN ISO 21258
A1, A2	Dioxins / furans (I-TEQ)	Flue gas emissions	0.1 ng/m^3	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
SW1	Uncontaminated surface water and roof drainage	None set	None set	None set	None set	None set

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1	Boiler blow down	None set	None set	None set	None set	None set

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
As identified in the Application	Wind Speed and Direction	Continuous	Anemometer	--
Location close to the Combustion Chamber inner wall or as identified and justified in Application.	Temperature (° C)	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas flow	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas oxygen content	Continuous	BS EN 15267-3 BS EN 14181	--
A1, A2	Exhaust gas water vapour content	Continuous	BS EN 15267-3 BS EN 14181	Unless gas is dried before analysis of emissions.

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Incineration plant	Gross electrical efficiency	Within 6 months of first operation and then within 6 months of any modification that significantly affects energy efficiency	Performance test at full load	Gross electrical efficiency should be in the range 25-35%

Table S3.5 Residue quality					
Emission point reference or source or description of point of measurement	**Parameter**	**Limit**	**Monitoring frequency**	**Monitoring standard or method ***	**Other specifications**
Bottom Ash	TOC	<3%	Monthly in the first year of operation. Then Quarterly	BS EN 14899 and either BS EN 13137 or BS EN	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'
Bottom Ash	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	-	Monthly in the first year of operation. Then Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	-
Bottom Ash	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	-	Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	-
APC Residues	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	-	Monthly in the first year of operation. Then Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	-

Table S3.5 Residue quality					
Emission point reference or source or description of point of measurement	**Parameter**	**Limit**	**Monitoring frequency**	**Monitoring standard or method ***	**Other specifications**
APC Residues	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	-	Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	-

* Or other equivalent standard as agreed in writing with the Environment Agency.

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air Parameters as required by condition 3.6.1. Reporting of the daily average parameters in table S3.1(b) is only required if a period of OTNOC has occurred during that day	A1, A2	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
TOC Parameters as required by condition 3.6.1	Bottom Ash	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.6.1	Bottom Ash	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.6.1	Bottom Ash	Before use of a new disposal or recycling route	-
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.6.1	APC Residues	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.6.1	APC Residues	Before use of a new disposal or recycling route	-
Functioning and monitoring of the incineration plant as required by condition 4.2.2	--	Annually	1 Jan

Table S4.2: Annual production/treatment	
Parameter	**Units**
Total RDF Incinerated	tonnes
Total Commercial/Municipal Waste Incinerated	tonnes
Electrical energy produced	KWh
Electrical energy exported	KWh
Electrical energy used on installation	KWh
Waste heat utilised by the installation	KWh

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Annual Report as required by condition 4.2.2	Annually	-
Electrical energy exported, imported and used at the installation	Annually	kWh / tonne of waste incinerated
Fuel oil consumption	Annually	kg / tonne of waste incinerated
Bottom Ash residue	Annually	Route, tonnes and tonnes / tonne of waste incinerated
APC residue	Annually	Route, tonnes and tonnes / tonne of waste incinerated
Urea	Annually	kg / tonne of waste incinerated
Activated Carbon consumption	Annually	kg / tonne of waste incinerated
Sodium Bicarbonate consumption	Annually	kg / tonne of waste incinerated
Water consumption	Annually	kg / tonne of waste incinerated
Periods of abnormal operation	Annually	No of occasions and cumulative hours for current calendar year for each line.

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Annual report required by condition 4.2.2	Annual performance report template	06/07/2021
Air	Forms air 1-8 or other forms as agreed in writing by the Environment Agency	06/07/2021
Water and raw material usage	Form WU/RM1 1 or other form as agreed in writing by the Environment Agency	06/07/2021
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	06/07/2021

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Waste disposal/recovery	Form R1 or other form as agreed in writing by the Environment Agency	06/07/2021
Residue quality	Forms residues 1 and residues 2 or other form as agreed in writing by the Environment Agency	06/07/2021
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	06/07/2021

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 breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) 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

“abatement equipment” means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

“abnormal operation” means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices, during which the emissions into the air and the discharges of waste water may exceed the prescribed emission limit values for the pollutant(s) affected.

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

“APC residues” means air pollution control residues

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

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

“BAT conclusions” means Best Available Techniques (BAT) Conclusions published by the European Commission.

“bottom ash” means transported by the grate;

“CEM” Continuous emission monitor

“CEN” means Commité Européen de Normalisation

“bi-annual” means twice per year with at least five months between tests;

“commissioning” means testing of the new incineration plant that involves any operation of the furnace.

“dioxin and furans” means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

“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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“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.

“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.

“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.

“incineration line” means all of the incineration equipment related to a common discharge to air location.

“Industrial Emissions Directive” 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

“ISO” means International Standards Organisation.

“list of wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“LOI” means loss on ignition a technique used to determine the combustible material by heating the ash residue to a high temperature

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

“OTNOC” means operation other than normal operating conditions, excluding start-up and shut-down and periods of abnormal operation, as defined in the OTNOC management plan approved through pre-operational condition PO1 or otherwise as agreed in writing with the Environment Agency.

“PAH” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenzo[ah]anthracene, Dibenzo[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

“PCB” means Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.

“pests” means Birds, Vermin and Insects.

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

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“start up” is any period, where the plant has been non-operational until waste has been fed to the plant [in sufficient quantity to cover the grate and] to initiate steady-state conditions as described in the application or agreed in writing with the Environment Agency.

“shut down” is any period where the plant is being returned to a non-operational state and there is no waste being burned as described in the application or agreed in writing with the Environment Agency.

“TOC” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC. [In respect of Bottom Ash, this means the total carbon content of all organic species present in the ash (excluding carbon in elemental form).]

“waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

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

“year” means calendar year ending 31 December.

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

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

(a) 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 and gaseous fuels, 6% dry for solid fuels; and/or

(b) in relation to gases from incineration plants other than those burning waste oil, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry.

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-

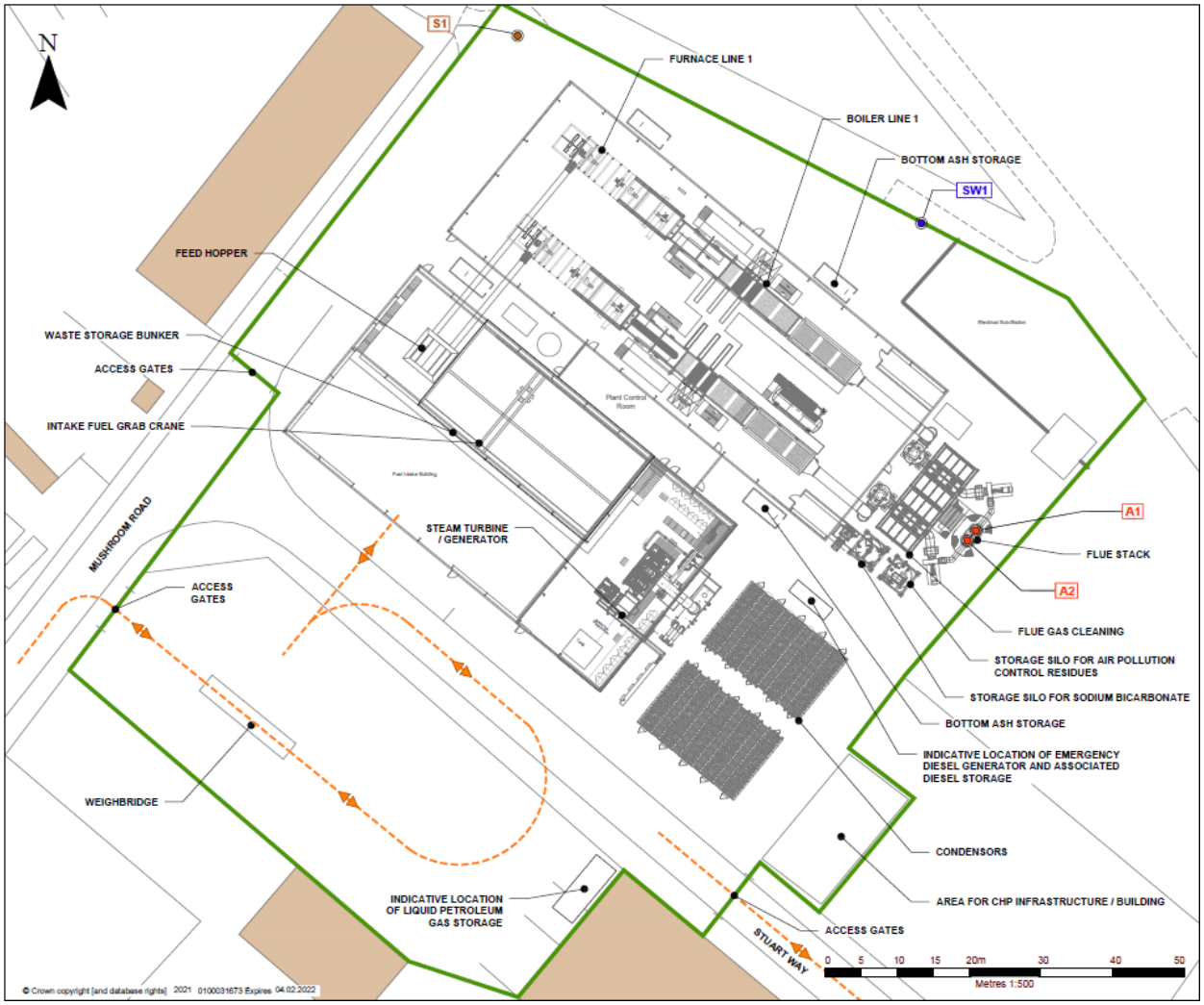
like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1.

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
		Humans / Mammals	**Fish**	**Birds**
Dioxins				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
Furans				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.3	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0003	0.0001	0.0001

TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
Non-ortho PCBs			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0003	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)	0.03	0.00005	0.001

TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	0.00003	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.00003	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.00003	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.00003	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)	0.00003	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)	0.00003	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)	0.00003	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)	0.00003	<0.000005	0.00001

Schedule 7 – Site plan



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