

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Enviropower Ltd

Unit 7
Marlborough Business Centre
24 Marlborough Road
Lancing Business Park
Lancing
West Sussex
BN15 8TP

Variation application number

EPR/XP3030XX/V008

Permit number

EPR/XP3030XX

Permit number **EPR/XP3030XX**

Introductory note

This introductory note does not form a part of the notice

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.

This variation has been issued to update the permit following a statutory review of the permits in the industry sector for incineration. The opportunity has also been taken to consolidate the original permit and subsequent variations. The Industrial Emissions Directive (IED) came into force on 7th January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) conclusions as described in the Commission Implementing Decision. The BAT conclusions for incineration were published on 03 December 2019 in the Official Journal of the European Union (L323) following a European Union wide review of BAT, implementing decision 2017/2117/EU of 21 November 2017.

The schedules specify the changes made to the 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.

Brief description of the process

This permit controls the operation of a waste co-incineration plant. The relevant listed activities are S5.1 A1 (a) and S5.1 A1 (b). The permit implements the requirements of the EU Directives on Industrial Emissions and Waste.

The main features of the permit are as follows:

Furnace technology	Moving Grate
Number of lines	2
Principal waste type	Waste wood
Stack height	16m
Permitted plant capacity	75,000 tonnes per year
Electrical generation capacity	5.3 MWe

The main purpose of the activity at the installation is to burn residual non-hazardous construction and demolition waste as fuel for the production of steam. The steam is used to drive a steam turbine to produce electricity for export to the national grid. The installation covers the entire combustion plant including all combustion lines, waste reception, storage, waste-fuel and air supply systems, boiler, facilities for the treatment of exhaust gases, on-site facilities for handling and storage of residues and waste water, stack, devices and systems for controlling combustion operations, recording and monitoring conditions.

The plant has a design capacity of 9.5te/hr, which equates to approximately 75,000 tonnes per year at 7884 hours operation. There are two identical combustion lines. The heat produced is used to generate electricity for export to the national grid. The process generates approximately 4MW of electricity for export to the national

grid. Facilities are maintained to allow steam or hot water pass-outs such that opportunities for use of heat may be capitalised upon should they become practicable.

Raw Materials

Waste is delivered to the plant via the waste recycling facility adjacent to the installation where it's deposited into the inlet hopper of a Untha mobile-e shredder. The waste is then reduced to a maximum particle size of approximately 100mm. Ferrous and non-ferrous metals are then removed by a magnet and eddy current separator before the shredded waste is transferred to the fuel storage area from where it is fed into one of two reciprocating grate stoker fired combustion units and then incinerated. The furnaces are fitted with secondary chambers where the resulting flue gas is retained for >2seconds at >850 °C to ensure complete combustion.

Urea is injected into the hot flue gas in the secondary chamber to reduce oxides of nitrogen (NO_x) to nitrogen and water. The flue gas then passes through a heat exchanger where steam is raised to drive a steam turbine. The flue gas is then treated with sodium bicarbonate to neutralise acid gases and activated carbon to remove heavy metals, volatile organic compounds (VOCs) and dioxins and furans.

Raw materials used in the process, apart from those referred to above, include small quantities of water treatment chemicals, oils, lubricants and biocides. These are all stored in bunded enclosures in the main process building.

Combustion Process

There are two waste combustion streams in parallel. Each stream is served by a Talbott Bio-10000 moving grate combustor. At the end of the grate the solid residues fall into a water quench chamber and are then conveyed to storage bay. Primary combustion air is extracted from within the building and fed in below the waste through the grate bars and above the waste mass to promote good combustion.

Secondary combustion air is injected into a cylindrical secondary chamber where it is mixed with the hot flue gas and the temperature raised to >850 °C for more than 2 seconds. Urea is injected into the outlet of the combustion chamber to react with the oxides of nitrogen, chemically reducing them to nitrogen and water.

Auxiliary natural gas burners are fitted to assist in maintaining gas temperatures above 850°C for 2 seconds with a minimum of 6% oxygen content in the combustor. The oxygen concentration and temperature are carefully controlled to minimise dioxin emissions.

Energy Recovery

The steam generating boilers are located at the exit of the flue gas from the secondary chamber. Hot gases pass through a series of heat exchangers and superheaters and finally through an economiser. The steam is fed to a steam turbine which generates electricity. Water for steam generation is taken from the town's water main and is treated prior to use in the boilers. Steam is condensed in an air cooled vacuum condenser and then recycled to the boiler. All process waste waters are discharged directly to sewer in accordance with a trade effluent consent.

Gas Cleaning

Flue gases pass from the boiler to the gas cleaning equipment. The design of the boilers is such that the flue gas temperature is quickly reduced through the critical temperature range thus minimising dioxin reformation. The gas enters a reaction chamber where sodium bicarbonate and activated carbon are injected to neutralise acid gases and absorb (primarily) dioxins, volatile organic compounds (VOCs), PAHs and mercury. The sodium bicarbonate injection rate is automatically controlled by upstream management of hydrogen chloride (HCl) and sulphur dioxide (SO₂), the HCl and SO₂ concentrations being continually monitored by CEMS to optimise sodium bicarbonate usage.

Nitrogen oxides (NO_x) abatement is achieved by the use of selective non-catalytic reduction (SNCR) and flue gas recirculation. The SNCR is based on the injection of urea into the furnace chambers before the sodium bicarbonate and carbon injection and before the gas passes to the bag filters.

Bag filters remove the fine ash plus excess and spent sorbent as the gases pass across the bag fabric. The build up of the latter two enhances the performance of the system. Reverse pulses of compressed air are used to remove the accumulated particulate ("APC residues") from the bags. The APC residues fall into a collection

hopper and from there into 1 m³ capacity 'tote' bags which are sealed when full and then stored within the main building prior to transport to a suitably licensed hazardous waste disposal facility.

The cleaned gas then discharges to atmosphere via two 16-metre stacks.

Ancillary Operations

De-mineralised water is required to compensate for boiler blow down losses. This is treated prior to use with chemicals such as sodium sulphate and sodium hydroxide to reduce hardness. These activities all take place within bunded areas within the main process building.

Ash Handling

Bottom ash is sent off-site for aggregate recycling. APC residues are sent for disposal off site by licensed contractors subject to waste licensing legislation. Ferrous metals are sent for recovery off site by licensed contractors subject to waste permitting legislation. All other solid waste residues arising from the operation of the process will be removed from site, in enclosed containers, for disposal by suitable contractors.

Liquid Effluent and Site Drainage

The plant uses approximately 20000 tonnes per year of potable water. This is largely made up of boiler blow down water. All other process waters, such as site wash down water and bottom ash quench are recycled within the process via a waste water tank and only where necessary discharged directly to sewer. There is no discharge of process liquids to controlled waters. Uncontaminated surface water is discharged via an interceptor to local surface water drains.

Emissions Monitoring

Emissions from the stack are continuously monitored. In addition periodic sampling and measurement will be carried out for metals. The appearance of the key release points of the main plant stack are monitored by CCTV. Date coded video records are available to supplement process records should they be required.

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

Status log of the permit		
Description	Date	Comments
Application from Sussex Waste Recycling Ltd. Ref. YP3534SD	Received 16/02/06	
Response to request for information	04/05/06	
Additional information submitted in writing (Schedule 4 notice)	Received 01/06/06	
Additional information submitted in writing (second Schedule 4 notice)	12/07/06	
Permit determined	19/10/06	Issued to Sussex Waste Recycling Ltd.
Transfer of permit YP3534SD from Sussex Waste to Energy Ltd.	31/10/07	(EPR/XP3030XX/A001)
Transfer XP3030XX determined (EPR/XP3030XX/A001)	10/12/07	Issued to Sussex Waste to Energy Ltd.
Application for variation to permit XP3030XX to make changes to plant ref. BP3432XD	Duly made 10/12/07	
Variation BP3432XD determined	19/03/08	(EPR/XP3030XX/V002)

Status log of the permit		
Description	Date	Comments
Agency variation EPR/XP3030XX/V003 determined	21/06/10	
Agency variation EPR/XP3030XX/V004 determined	26/04/12	Varied and consolidated permit issued.
Agency variation determined EPR/XP3030XX/V005	04/03/14	Agency variation to implement the changes introduced by IED.
Application EPR/XP3030XX/V006 (variation and consolidation)	Duly made 21/06/16	Application to vary/update list of wastes and to replace individual tonnage limits for the EWC codes with a single annual throughput for all waste types. Addition of the Fire Prevention Plan condition and updating of the Improvement and Pre-operational conditions/tables.
Variation determined EPR/XP3030XX	19/07/16	Varied permit issued.
Application EPR/XP3030XX/V007 (variation)	Duly made 01/11/16	Application to vary the permit to increase the annual throughput and NO ₂ emission limits.
Variation determined EPR/XP3030XX	14/06/17	Varied permit issued.
Regulation 61 notice issued	05/04/22	Regulation 61 Notice requiring information for Statutory review of permit. BAT Conclusions published 03 December 2019.
Regulation 61 notice response	29/06/22	
Variation issued EPR/XP3030XX/V008	28/11/23	

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 regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

Permit number

EPR/XP3030XX

Issued to

Enviropower Ltd (“the operator”)

whose registered office is

**Amelia House
Crescent Road
Worthing
West Sussex
BN11 1RL**

company registration number 05836498

to operate a regulated facility at

**Unit 7
Marlborough Business Centre
24 Marlborough Road
Lancing Business Park
Lancing
West Sussex
BN15 8TP**

to the extent set out in the schedules.

The notice shall take effect from 28/11/2023

Name	Date
Principal Permitting Team Leader	28/11/2023

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/XP3030XX

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/XP3030XX/V008 authorising,

Enviropower Ltd (“the operator”),

whose registered office is

**Amelia House
Crescent Road
Worthing
West Sussex
BN11 1RL**

company registration number 05836498

to operate an installation at

**Unit 7
Marlborough Business Centre
24 Marlborough Road
Lancing Business Park
Lancing
West Sussex
BN15 8TP**

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

Name	Date
Principal Permitting Team Leader	28/11/2023

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.
 - (c) referenced in schedule 1, table S1.1 (AR1), from 03/12/2023, in accordance with a written other than normal operating conditions (OTNOC) management plan.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 The operator shall review the written management system at least every 3 years or otherwise as requested by the Environment Agency.
- 1.1.4 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”).
- 2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.
- 2.1.3 Hazardous waste shall not be mixed, either with a different category of hazardous waste or with other waste, substances or materials, unless it is authorised by schedule 1 table S1.1 and appropriate measures are taken.

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red 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 The operator shall burn only those hazardous wastes where the throughputs, calorific values and pollutant compositions are within the ranges specified in table S2.2 of schedule 2, unless otherwise agreed in writing with the Environment Agency.
- 2.3.10 The operator shall ensure that prior to accepting waste subject to condition 2.3.9 at the site, it has obtained sufficient information about the hazardous wastes to be burned to demonstrate compliance with the characteristics described in condition 2.3.9.
- 2.3.11 Waste shall not be charged if:
- (a) the combustion chamber temperature is below 850 °C,
 - (b) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded during abnormal operation; or
 - (c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than during abnormal operation; or
 - (d) continuous emission monitors to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than during abnormal operation; or
 - (e) there is a stoppage, disturbance or failure of the activated carbon abatement system, other than during abnormal operation.
 - (f) continuous emission monitors to demonstrate compliance with the emission limit values for particulates, TOC or CO in schedule 3 are unavailable unless alternative techniques, as agreed in writing with the Environment Agency, are used to demonstrate compliance with those emission limit values.
- 2.3.12 The operator shall record the beginning and end of each period of “abnormal operation”.
- 2.3.13 During a period of “abnormal operation”, the operator shall restore normal operation of the failed equipment or replace the failed equipment as soon as possible.
- 2.3.14 The operator shall interpret the start of the period of “abnormal operation” as the earliest of the following:
- (a) a technically unavoidable stoppage, disturbance, or failure of continuous emission monitors.

- (b) a technically unavoidable stoppage, disturbance, or failure of the activated carbon abatement system
- (c) Any other technically unavoidable stoppage, disturbance, or failure of the plant which is causing or could lead to an exceedance of an emission limit value in table S3.1.

2.3.15 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) The failed equipment has not been repaired and brought back into normal operation and a single period of abnormal operation reaches a duration of 4 hours after the start of abnormal operation on an incineration line
- (d) Abnormal operation occurs on an incineration line and the cumulative duration of abnormal operation periods over 1 calendar year has reached 60 hours on that incineration line;

2.3.16 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 2.3.11 is maintained as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.11 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.

2.3.17 Bottom ash and APC residues shall not be mixed.

2.4 Off-site Conditions

2.4.1 The Operator shall carry out such off-site monitoring in respect of soil, vegetation, air quality and noise at locations and to a standard as may be agreed with the Agency.

2.5 Improvement programme

2.5.1 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.

2.5.2 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.

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 table S3.1 shall not be exceeded except during periods of abnormal operation.
- b) The limits in table S3.1 (a) shall not be exceeded during abnormal operation.

3.2.2 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1 and S3.1(a); 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 or 10-minute averages 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 or 10 minute period, the half-hourly average or 10-minute average shall in any case be considered valid if measurements are available for a minimum of 20 minutes or 7 minutes during the half-hour or 10-minute period respectively. The number of half-hourly or 10-minute averages so validated shall not exceed 5 or 15 respectively per day;
- d) daily average values shall be calculated as follows:
 - the average of valid half hourly averages or 10 minute averages over a calendar day excluding half hourly averages or 10 minute averages during periods of abnormal operation. The daily average value shall be considered valid if no more than five half-hourly average or fifteen 10-minute 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.

3.5 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), S3.2 and S3.3;
- (b) process monitoring specified in table S3.4;
- (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 unless otherwise agreed in writing by the Environment Agency 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. Newly installed Data handling and acquisition systems (DAHS), or DAHS replacing existing DAHS, shall have MCERTS certification.

- 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), S3.2, S3.3 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.

4 Information

4.1 Records

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
 - (b) be made as soon as reasonably practicable;
 - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
 - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - i. off-site environmental effects; and
 - ii. matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency)

each year 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
- 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:
- (c) the Environment Agency shall be notified at least 14 days before making the change; and
 - (d) 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.
- 4.3.7. Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:
- (e) a decision by the Secretary of State not to re-certify the agreement;
 - (f) a decision by either the operator or the Secretary of State to terminate the agreement; and
 - (g) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.4 Interpretation

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

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	S5.1 A1 (a)	The incineration of hazardous waste in a waste co-incineration plant with a capacity of 10 tonnes per day or more.	From receipt of waste to emission of exhaust gas and removal from site of waste arising. Waste types and quantities as specified in Table S2.2 of this permit. Mixing of premixed hazardous waste with non-hazardous wastes is permitted for the purposes of fuel storage and blending prior to incineration.
AR2	S5.1 A1 (b)	The incineration of non-hazardous waste in a waste co-incineration plant with a capacity of 3 tonnes per hour or more.	From receipt of waste to emission of exhaust gas and removal from site of waste arising. Waste types and quantities as specified in Table S2.2 of this permit.
Directly Associated Activity			
AR3	Electricity Generation	Generation of 5.3MWe electrical power using a steam turbine from energy recovered from the flue gases.	

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to question B2.1 in the application form and section B2.1 to B2.10 of the application.	16/2/06
Schedule 4 notice (Dated 14/3/06)	The response to questions 1,2,4,6 to 16, 19 to 21, 25, 26, 30, 32, 34 to 37, 40 to 44, 46, 48 to 52, 54 to 56, 58 and 60.	31/5/06
Application for permit variation dated 24/8/07	The response to questions C2.1 to C2.12 (inclusive) of the variation application reference UP3534XR.	2/11/07
Schedule 7 notice (dated 19/12/07)	The response to questions 1 to 7 of the notice.	23/01/08
Application for permit variation EPR/XP3030XX/V006	Documents provided in response to Section 2b and Table 1 of the Part C2; Table 1b and Appendix 6 of the Part C3 of the application form.	21/06/16
Response to regulation 61 notice	Operating techniques as set out in the response to the regulation 61 notice.	29/06/22

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	<p>The operator shall perform a study to determine the extent to which the operation of the current systems in place at the plant to minimise NOx emissions can be further optimised such that emissions are reduced as far as possible below 150 mg/Nm³ as a daily average, without significantly increasing emissions of other pollutants or having a significant negative effect on plant operation, reliability or bottom ash quality. The study shall be based on the results of trials carried out at the installation and shall have regard to the recommendations for test conditions set out in Section 5.4.3 of report titled 'Establishing factors that influence NOx reduction at waste incineration plant to levels below the upper end of the BAT-AELs' (dated 14/01/2022), or other methodology agreed in writing with the Environment Agency. A written report of the study shall be submitted to the Environment Agency for approval which shall include but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> • A brief description of the currently installed measures at the installation to minimise NOx emissions, including details of how the reagent dosing system responds to emissions monitoring data and historic data which illustrates the current achievable level of daily NOx emissions. • The results of trials conducted to further reduce daily average NOx emissions using currently installed measures, including: <ul style="list-style-type: none"> ○ a description of the parameters that were varied during the trial e.g. ammonia or urea feed rates, physical form of urea injected, air flows, and the range over which they were varied ○ the levels of NOx achieved and associated levels of ammonia and nitrous oxide emissions and reagent consumption ○ observed effects and predicted long-term impacts on plant operation, reliability and maintenance regime ○ any changes to the composition of the bottom ash and boiler ash and the implications of those changes for the ability to process and use the ash, as well as for the pollution potential of the ash both during processing and its subsequent use as a secondary aggregate ○ any other relevant cross-media effects <p>The report shall also include a description of the extent to which current systems in place at the plant to minimise NOx emissions can be optimised on a permanent basis, including justification and an implementation plan where relevant.</p>	28/05/24
IC2	<p>The operator shall submit a report to the Environment Agency for approval on whether waste feed to the plant can be proven to have a low and stable mercury content. The report shall have regard to BAT 4 of the BAT conclusions, be based on historic mercury emissions monitoring data and have regard to the Environment Agency Mercury Monitoring Protocol.</p>	31/12/23

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC3	The operator shall submit a report to the Environment Agency for approval on whether dioxin emissions to air are stable. The report shall have regard to BAT 4 of the BAT conclusions, be based on historic dioxin emissions monitoring data and have regard to the Environment Agency Dioxins Monitoring Protocol.	31/12/23
IC4	<p>The operator shall carry out an assessment of the opportunities to increase the energy efficiency of the installation.</p> <p>The assessment shall include but not necessarily be limited to:</p> <ul style="list-style-type: none"> • Improvements that could be made to the furnace (including control systems) in order to increase the amount of thermal energy produced per unit of thermal energy in the waste. • Where relevant, improvements that could be made to the steam system and related components to allow a greater quantity of electricity to be generated per unit of thermal energy in the steam. • Improvements in the heat and electrical efficiency of the plant's ancillary systems that could be made in order to reduce the heat and electrical loads of the plant. • Where relevant, an implementation plan for the improvements identified, including the anticipated increase in the gross and/or net electrical efficiency of the plant which would be achieved. <p>A written copy of the assessment shall be submitted to the Environment Agency for approval.</p>	28/11/24

Schedule 2 – Waste types, raw materials and fuels

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

Table S2.2 Permitted waste types and quantities for Combustion	
Maximum quantity	75,000 tonnes per year.
Waste code	Description
17	Construction and demolition wastes (including excavated soil from contaminated sites)
17 02	wood, glass and plastic
17 02 01	wood
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 04*	<p>Premixed hazardous and non-hazardous waste wood with a maximum content of 10% hazardous waste wood by mass.</p> <p>The following hazardous waste wood types are excluded:</p> <ul style="list-style-type: none"> • railway sleepers • telegraph poles • waste wood from hydraulic engineering, such as wood from docks • waste wood from industrial applications such as cooling tower timbers, wood block flooring or moulds • waste wood from boats, carriages and trailer beds • waste wood treated with creosote
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 07	wood other than that mentioned in 19 12 06
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 (trommel fines only or a mixture of trommel fines and sawdust only)

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(a) & A1(b) – Main Chimney streams 1 and 2 as shown on site plan MSE 161/PPC/003A submitted with document SWtE001/07	Particulate matter	Incineration exhausts gases	30 mg/m ³	½-hr average	Continuous	EN 14181
	Particulate matter		10 mg/m ³ Until 02/12/2023	daily average	Continuous	EN 14181
			5 mg/m ³ from 03/12/2023			
	Total Organic Carbon (TOC)		20 mg/m ³	½-hr average	Continuous	EN 14181
	Total Organic Carbon (TOC)		10 mg/m ³	daily average	Continuous	EN 14181
	Hydrogen chloride		60 mg/m ³	½-hr average	Continuous	EN 14181
	Hydrogen chloride		10 mg/m ³ Until 02/12/2023	daily average	Continuous	EN 14181
			8 mg/m ³ from 03/12/2023			
Hydrogen fluoride	1 mg/m ³	Average of three consecutive measurements of at least 30 minutes each	Bi-annually	CEN TS 17340		

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)
	Carbon monoxide		150 mg/m ³	95% of all 10-minute averages in any 24-hour period	Continuous	EN 14181
	Carbon monoxide		50 mg/m ³	daily average	Continuous	EN 14181
	Sulphur dioxide		200 mg/m ³	½-hr average	Continuous	EN 14181
	Sulphur dioxide		50 mg/m ³ Until 02/12/2023	daily average	Continuous	EN 14181
			40 mg/m ³ from 03/12/2023			
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		300 mg/m ³	½-hr average	Continuous	EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		150 mg/m ³	daily average	Continuous	EN 14181
	Cadmium & thallium and their compounds (total)		0.05 until 02/12/2023	Average of three consecutive measurements of at least 30 minutes each	Bi-annually	BS EN 14385
			0.02 mg/m ³ from 03/12/2023			
	Mercury and its compounds		0.05 mg/m ³ until 02/12/2023	Average of three consecutive measurements of at least 30 minutes each	Bi-annually until 02/12/2023	BS EN 13211

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)
	Mercury and its compounds		0.02 mg/m ³ from 03/12/2023	Average of three consecutive measurements of at least 30 minutes each	Bi-annually from 03/12/2023	BS EN 13211
			Limit does not apply if continuous monitoring has been specified by the Environment Agency		Not required if continuous monitoring has been specified by the Environment Agency	
	Mercury and its compounds		0.02 mg/m ³ from 03/12/2023	Daily average	Continuous from 03/12/2023 Not required unless continuous monitoring has been specified by the Environment Agency in line with sampling protocol	EN 14181
	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)		0.5 mg/m ³ Until 02/12/2023	Average of three consecutive measurements of at least 30 minutes each	Bi-annually	BS EN 14385
			0.3 mg/m ³ from 03/12/2023			
	Exhaust gas temperature		No limit set	-	Continuous	Traceable to national standards
Exhaust gas pressure	No limit set	-	Continuous	Traceable to national standards		

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)
	Exhaust gas flow		No limit set	-	Continuous	BS EN 16911-2
	Exhaust gas oxygen content		No limit set	-	Continuous	EN 14181
	Exhaust gas water vapour content		No limit set	-	Continuous	EN 14181
	Ammonia (NH ₃)		No limit Until 02/12/2023	Daily average	Continuous Until 02/12/2023	Laser diode instrument or other MCERTS accredited technique
			15 mg/m ³ from 03/12/2023	Daily average	Continuous from 03/12/2023	EN 14181
	Nitrous oxide (N ₂ O)		No limit set	½-hr average and daily average	Continuous	EN 14181
	Carbon dioxide		No limit set	Continuous	Continuous	EN 14181
	Dioxins / furans (I-TEQ)		0.1 ng/m ³ Until 02/12/2023	periodic over minimum 6 hours, maximum 8 hour period	Bi-annually until 02/12/2023	BS EN 1948 Parts 1, 2 and 3

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)
	Dioxins / furans (I-TEQ)		0.06 ng/m ³ from 03/12/2023 and 0.08 ng/m ³ if long term limit is specified by the Environment Agency in line with sampling protocol from 03/12/2023	periodic over minimum 6 hours, maximum 8 hour period and value over sampling period of 2 to 4 weeks for long term sampling	Bi-annually from 03/12/2023 and long term sampling if specified by the Environment Agency in line with sampling protocol from 03/12/2023	EN 1948 Parts 1, 2 and 3 and CEN TS 1948-5 if specified by the Environment Agency in line with sampling protocol
	Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)		No limit set	periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	EN 1948 Parts 1, 2 and 4
	Dioxins / furans (WHO-TEQ Humans / Mammals, Fish, Birds)		No limit set	periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	BS EN 1948 Parts 1, 2 and 3

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)
	Polybrominated dibenzodioxins and furans		No limit set	periodic over minimum 6 hours, maximum 8 hour period	Bi-annually Not required unless wastes containing brominated flame retardants are burned	Method based on procedural requirements of EN 1948
	Specific individual polycyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.		No limit set	periodic over minimum 6 hours, maximum 8 hour period	Annually	BS ISO 11338 Parts 1 and 2.

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(a) & A1(b) – Main Chimney streams 1 and 2 as shown on site plan MSE 161/PPC/003A submitted with document SWtE001/07	Particulate matter	Incineration exhausts gases	150 mg/m ³	½-hr average	Continuous	EN 14181 or alternative surrogate as specified in the application or as agreed in writing with the environment agency during failure of the continuous emission monitor
	Total Organic Carbon (TOC)		20 mg/m ³	½-hr average	Continuous	EN 14181 or alternative surrogate as specified in the application or as agreed in writing with the environment agency during failure of the continuous emission monitor
	Carbon monoxide		150 mg/m ³	95% of all 10-minute averages in any 24-hour period.	Continuous	EN 14181 or alternative surrogate as specified in the application or as agreed in writing with the environment agency during failure of the continuous emission monitor

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
W2 as shown on MSE161/PPC/004a as submitted with document SWtE001/07	Uncontaminated surface water run-off	No parameters set	No visible oil or grease	-	-	-

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- Foul water discharge as shown on drainage plan MSE161/PPC/04a submitted with document SWtE001/07	Bottom ash quench water	Total suspended solids as defined by Directive 91/271/EEC	500mg/l	Batch sample	To be taken whenever bottom ash quench water is discharged to sewer	BS EN 872:1996
		Chemical oxygen demand	To be agreed	Batch sample		BS 6068-2.34:1988
		pH	5 to 11	Instantaneous		BS 6068-2.50:1995
		Oils and hydrocarbons	100mg/l	Batch sample		SCA blue book 77
		Total Metals Note 1	5mg/l	Batch sample		BS EN ISO 11885:1998
		Dioxins/furans (I-TEQ)	0.3ng/l ^{Note 2}	Batch sample		USEPA Method 1613
		Total suspended solids as defined by Directive 91/271/EEC	500mg /l	Batch sample		BS EN 872:1996

Note 1: Total metals means the sum of chromium, copper, lead, nickel, zinc, mercury and cadmium.

Note 2: The TEQ sum of the equivalence factors to 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.

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.
Incineration plant	Gross electrical efficiency	within 6 months of any modification that significantly affects energy efficiency	Performance test at full load or other method as agreed in writing with the Environment Agency	

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 or otherwise as agreed in writing with the Environment Agency	3% or otherwise as agreed in writing with the Environment Agency	Quarterly	EN 14899 and either EN 13137 or EN 15936 or otherwise as agreed in writing with the Environment Agency	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.		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.		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.	A1(a) & A1(b)	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
Emissions to sewer Parameters as required by condition 3.6.1	S1	Annually	1 Jan
TOC or otherwise as agreed in writing with the Environment Agency Parameters as required by condition 3.6.1	Bottom Ash	Quarterly	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	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	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	

Table S4.2: Annual production/treatment	
Parameter	Units
Total Waste Incinerated	tonnes
Electrical energy produced	kWh
Thermal energy produced e.g. steam for export	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 consumption	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	-
Emissions to air until 02/12/2023	Air: Specified Periodic monitored emissions biannually - Agency Form / XP3030XX/ A1	-
	Air: Specified Periodic monitored emissions biannually - Agency Form / XP3030XX/ A2	-

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
	Air: Continuously monitored emissions of particulates - Agency Form / XP3030XX/ A3	-
	Air: Continuously monitored emissions of TOC - Agency Form / XP3030XX/ A4	--
	Air: Continuously monitored emissions of hydrogen chloride - Agency Form / XP3030XX/ A5	-
	Air: Continuously monitored emissions of Carbon monoxide - Agency Form / XP3030XX/ A6	-
	Air: Continuously monitored emissions of Sulphur dioxide - Agency Form / XP3030XX/ A7	-
	Air: Continuously monitored emissions of Oxides of nitrogen - Agency Form / XP3030XX/ A8	-
	Air: Continuously monitored emissions of Ammonia - Agency Form / XP3030XX/ A9	-
Emissions to air from 03/12/2023	Forms air 1-9 or other forms as agreed in writing by the Environment Agency	28/11/2023
Sewer	Agency Form / XP3030XX/ S1	-
Residue quality	Form residue 1 and 2 or other form as agreed in writing by the Environment Agency	28/11/2023
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	28/11/2023

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 plant or the measurement devices. Abnormal operation starts as defined in condition 2.3.14 and ends as defined in condition 2.3.15. Abnormal operation is limited to 4 hours for a single occurrence and a total of 60 hours per year per line.

“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 Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for Waste Incineration

“bottom ash” means ash falling through the grate or transported by the grate;

“CEM” Continuous emission monitor

“CEN” means Comité Européen de Normalisation

“bi-annually” 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 or as agreed with the Environment Agency.

Daily average emissions value means ‘the average of at least 43 valid half hourly averages or for CO the average of at least 43 valid half hourly averages or 129 valid 10 min averages’

“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.

“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.

“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.

“Hazardous property” has the meaning in Annex III of the Waste Framework Directive

‘Hazardous waste’ has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended)

“co-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

“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

“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.

“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.

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

“shut down” is any period where the plant is being returned to a non-operational state as described in the application or as 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

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 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
- (c) in relation to gases from co-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

TEF schemes for dioxin-like PCBs			
Congener	WHO-TEF		
	2005	1997/8	
	Humans / mammals	Fish	Birds
3,3',4,4',5,5'-HxCB(169)	0.03	0.00005	0.001
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

“year” means calendar year ending 31 December.

When the following terms appear in the waste code list in Schedule 2, table 2.2, for that table, they have the meaning given below:

‘hazardous substance’ means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008

‘heavy metal’ means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, as well as these materials in metallic form, as far as these are classified as hazardous substances

‘PCBs’ means

- polychlorinated biphenyls
- polychlorinated terphenyls
- monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyldibromo-diphenyl methane
- any mixture containing any of the above mentioned substances in a total of more than 0,005 %by weight

‘transition metals’ means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified as hazardous substances

‘stabilisation’ means processes which change the hazardousness of the constituents in the waste and transform hazardous waste into non-hazardous waste

‘solidification’ means processes which only change the physical state of the waste by using additives without changing the chemical properties of the waste

‘partly stabilised wastes’ means wastes containing, after the stabilisation process, hazardous constituents which have not been changed completely into non-hazardous constituents and could be released into the environment in the short, middle or long term.

Schedule 7 – Site plan



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