Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Sesona Hill House Ltd

Thornton Energy Recovery Centre
Hillhouse Business Park
Thornton - Cleveleys,
Lancashire
FY5 4QD

Permit number

EPR/ZP3329SS

Thornton Energy Recovery Centre
Permit number EPR/ZP3329SS

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 is Section 5.1 A(1) (b) – the incineration of non-hazardous waste in a waste incineration plant with a capacity exceeding 3 tonnes per hour. 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
Waste	Refuse Derived Fuel
Stack heights	45 m
Permitted plant capacity	120,000 tonnes per year
Electrical generation capacity	9.284 MWe (gross) 7.784 MWe (net)
Gross electrical efficiency	26.1%

The installation is located at the Hillhouse Business Park, Thornton-Cleveleys, Lancashire, FY5 4QD. The centre of the site is at National Grid Reference SD 34399 44026.

The installation consists of two incineration lines, each with a maximum operating capacity of 60,000 tonnes per year. Generation of electricity is dependent on the use of an Organic Rankine Cycle (ORC). The ORC is a closed thermodynamic cycle which converts heat energy to mechanical energy, to electrical energy. The installation is built as CHP-Ready, with the potential to export up to 20MWth heat if economically viable opportunities are identified.

Refuse derived fuel (RDF) is delivered to the facility in enclosed vehicles and deposited into the RDF reception area. Loading shovels are used to move RDF onto one of two walking floors. Walking floors operate continuously, transferring the RDF to feed conveyors and into hoppers to the combustion chamber. RDF feed rates are controlled by an automated control system.

The combustion chamber is designed to achieve good burnout, ensuring that combustion gases are maintained at a minimum temperature of 850 °C for a minimum residence time of 2 seconds. Low NOX auxiliary burners can be used to maintain the temperature in the combustion chamber if required. Primary combustion air is drawn into the chamber using an induced draft (ID) fan, maintaining negative pressure in the RDF reception area.

The thermal oil boiler is integral to the furnace; combustion gases heat the oil within the closed loop, with oil vapours expanding in the turbine to generate electricity. ACCs are used to condense the vapour back into a liquid before it is pumped back into the boiler.

Flue gases from the combustion process are discharged via an induced draft (ID) fan and CEMs, to two 45m stacks. Several bypasses are installed, allowing flue gases to bypass a section of the economiser, so that maintenance of the economiser can take place during incineration operations. No abatement is bypassed at

any time, and flue gases are always rapidly cooled to below 250 °C during these maintenance operations. To ensure emissions meet BAT-AELs and are minimised, several techniques are used:

(i) Selective Non-Catalytic Reduction for abatement of NO_X
(ii) Flue gas recirculation for reduction of NO_X
(iii) Sodium bicarbonate and activated carbon injection for abatement of acid gases, heavy metals, and dioxins and furans
(iv) Impregnated ceramic filters, for particulate and NO_X abatement.

There will be no process effluent emissions to water from the installation. The installation is designed as zero-discharge, with all process effluent to be reused for IBA quenching. Uncontaminated surface water is discharged to the Hillhouse Business Park's surface water drainage system.

The incineration process results in solid residues of incinerator bottom ash (IBA) and air pollution control residues (APCr). Treatment for recovery or disposal of solid residues take place away from the installation with only temporary storage on site.

The closest residential receptors are located approximately 360m to the southwest off Butts Road. The following ecological receptors are located within the relevant distances to the site:

- Special Areas of Conservation (SAC) – Morecambe Bay SAC (approximately 4.67km) and Shell Flat and Lune Deep SAC (approximately 7.90km)
- Special Protection Areas (SPA) – Morecambe Bay and Duddon Estuary SPA (approximately 0.15km) and Liverpool Bay SPA (approximately 4.07km)
- Ramsar sites – Morecambe Bay Ramsar (approximately 0.15km)
- Sites of Special Scientific Interest (SSSI) – Wyre Estuary SSSI (approximately 0.15km)
- Marine Conservation Zone – Wyre-Lune MCZ (approximately 0.15km)
- Local Wildlife Sites – ICI Hillhouse Estuary Banks (approximately 0.13km); Fleetwood Railway Branch Line, Trunnah to Burn Naze (approximately 0.31km); Burglars Alley Field (approximately 1.05km); Fleetwood Farm Fields (approximately 1.27km); Jameson Road Saltmarsh (approximately 1.41km); Rossall Lane Wood and Pasture (approximately 1.66km); and ICI Hillhouse International Pool (approximately 2.00km)

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 received	Duly made 06/02/2023	Application for incineration permit.
Additional information received in response to Schedule 5 Notice dated 20/11/2023	21/12/2023; 02/01/2024	Revised site layout including emission points Process flow diagram
Additional information	21/01/2024	Response to questions 2,3,4
Additional information	05/02/2024	Updated EWC codes and Revised Fire Prevention Plan
Additional information received in response to Schedule 5 Notice dated 02/02/2024	12/02/2024; 13/02/2024; 14/02/2024; 15/02/2024; 16/02/2024	BAT assessment for ORC system, firing diagram, CHP, flue gas cooling and economiser bypass clarifications.
Additional information	16/02/2024	Revised Noise Management Plan
Permit determined EPR/ZP3329SS	04/03/2024	Permit issued to Sesona Hill House Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/ZP3329SS

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

Sesona Hill House Ltd ("the operator"),

whose registered office is

2nd Floor
32 Grosvenor Gardens
London
SW1 0DH

company registration number [13999163]

to operate an installation at

Thornton Energy Recovery Centre
Hillhouse Business Park
Thornton - Cleveleys,
Lancashire
FY5 4QD

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

Name	Date
Peter Maksymiw	**04/03/2024**

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), 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.

2.2 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 if:

(a) the combustion chamber temperature is below 850 ^{o}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.

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

2.3.11 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.

2.3.12 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.

2.3.13 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;

2.3.14 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.

2.3.15 Bottom ash and APC residues shall not be mixed.

2.1 Improvement programme

2.1.1 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.

2.1.2 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.

2.2 Pre-operational conditions

2.2.1 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 and S3.2.

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 S3.4. 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%
- Mercury 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:

(i) the average of valid half hourly averages or 10 minute averages over 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.

3.4.2 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.

3.6 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 S3.2;

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

(c) residue quality in table S3.4

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) and S3.2 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 (a), (b) or (c), 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. (Incineration lines 1 and 2)	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 Activities		
AR2	Electricity Generation	Generation of 9.284 MWe electrical power using an Organic Rankine Cycle turbine from energy recovered from the flue gases.	Generation of electricity to use on site (parasitic load) and export to the national grid.
AR3	Back up electrical generator	6MWth Medium Combustion Plant (MCP) for providing emergency electrical power to the plant in the event of supply interruption.	Emergency use to a maximum of 500 hours operation per year. Maximum of 50 hours testing per year.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/ZP3329SS/A001	Response to question 3 in application form B3 BAT Assessment V2 (S3694-0410-0006KLH); dated 01/2023 Environmental Risk Assessment V2 (S3694-0410-0008KLH); dated 01/2023	Duly Made 06/02/2023
Response to Schedule 5 Notice dated 20/11/2023	Revised site layout including emission points V3 (NES565 – OA2); dated 12/2023	21/12/2023
Response to request for information on 12/01/2024	Response to questions 2, 3 and 4	21/01/2024
Additional information	Revised EP Application Supporting Information Report V3 (S3694-0410-0002KLH); dated 05/02/2024. Sections: • 1.4; • 2.2; • 2.5; • 2.6;	05/02/2024

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
	• 2.7 Revised Fire Prevention Plan V3 (S3694-0410-0001KLH); dated 02/2024	
Response to Schedule 5 Notice dated 02/02/2024	Email responses to Schedule 5 question regarding ORC system, rapid flue gas cooling and economiser bypass	12/02/2024; 13/02/2024; 14/02/2024; 15/02/2024; 16/02/2024
Additional information	Revised Noise Management Plan V3 (HSE-PLN-001); dated 02/2024	16/02/2024

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The Operator shall submit a written report to the Environment Agency on the implementation of its Environmental Management System (EMS). The report shall also include details of a review of the OTNOC management plan and any updates to the plan following the review.	Within 12 months of the completion of commissioning.
IC2	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.
IC3	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.
IC4	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 PO8.	Validation tests completed before the end of commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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.
IC5	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) systems and combustion settings to minimise oxides of nitrogen (NOx). The report shall include an initial assessment of the level of NOx, N_2O and NH_3 emissions that can be achieved under optimum operating conditions.	Within 4 months of the completion of commissioning.
IC6	The Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values: • Chromium (VI) 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.
IC7	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 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.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
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 6 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; this must include periods when the economiser bypasses are in operation and when the economiser bypasses are not in operation. The Operator shall submit a report to the Environment Agency with an analysis of whether dioxin emissions can be considered to be stable.	Within 6 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 6 months of completion of commissioning or as agreed in writing with the Environment Agency.
IC11	During commissioning, the Operator shall carry out tests to assess whether the air monitoring location(s) 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. The report shall specify the design of the ports for PM10 and PM2.5 sampling. 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.	Report to be submitted to the Agency within 3 months of completion of commissioning.

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) to the Environment Agency and obtain the Environment Agency's written approval to the EMS summary.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
	The summary shall include a copy of the full other than normal operating conditions (OTNOC) management plan which shall be prepared in accordance with BAT 18 of the BAT conclusions and include: • a list of potential OTNOC situations that are considered to be abnormal operation under the definition in Schedule 6 of this permit. • a definition of start-up and shut-down conditions having regard to any Environment Agency guidance on start-up and shut-down. • any updates on the design of critical equipment to minimise OTNOC since the permit application 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 will contain 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 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 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 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	At least three months before (or other date agreed in writing with the Environment Agency) 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, specifying arrangements for continuous and periodic monitoring of emissions to air to comply with Environment Agency guidance notes monitoring stack emissions measuring locations, techniques and standards for periodic monitoring 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
PO8	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.
PO9	At least 3 months before the commencement of commissioning, the Operator shall submit an updated written Fire Prevention Plan to the Environment Agency for assessment and written approval. The plan must follow Environment Agency Fire Prevention Plan guidance. The Operator must implement the proposals in the plan as agreed with the Environment Agency.
PO10	At least 3 months before the commencement of commissioning, the Operator shall submit an updated written Noise Management Plan to the Environment Agency for assessment and written approval. The plan must follow Environment Agency Noise Management Plan guidance. The Operator must implement the proposals in the plan as agreed with the Environment Agency.

Schedule 2 – Waste types, raw materials and fuels

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

Table S2.2 Permitted waste types and quantities for incineration plant	
Maximum quantity	**120,000 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)

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 (as shown on the site plan in Schedule 7, Figure 2)	Particulate matter	Flue gases from incineration lines 1 and 2	30 mg/m^3	½-hr average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Particulate matter	Flue gases from incineration lines 1 and 2	5 mg/m^3	daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Total Organic Carbon (TOC)	Flue gases from incineration lines 1 and 2	20 mg/m^3	½-hr average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Total Organic Carbon (TOC)	Flue gases from incineration lines 1 and 2	10 mg/m^3	daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Hydrogen chloride	Flue gases from incineration lines 1 and 2	60 mg/m^3	½-hr average	Continuous	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 (as shown on the site plan in Schedule 7, Figure 2)	Hydrogen chloride	Flue gases from incineration lines 1 and 2	6 mg/m^3	daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Hydrogen fluoride	Flue gases from incineration lines 1 and 2	1 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year of operation. Then Bi-annually	CEN TS 17340
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Carbon monoxide	Flue gases from incineration lines 1 and 2	150 mg/m^3	95% of all 10-minute averages in any 24-hour period	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Carbon monoxide	Flue gases from incineration lines 1 and 2	50 mg/m^3	daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Sulphur dioxide	Flue gases from incineration lines 1 and 2	200 mg/m^3	½-hr average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Sulphur dioxide	Flue gases from incineration lines 1 and 2	30 mg/m^3	daily average	Continuous	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 (as shown on the site plan in Schedule 7, Figure 2)	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Flue gases from incineration lines 1 and 2	400 mg/m^3	½-hr average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Flue gases from incineration lines 1 and 2	100 mg/m^3	daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Cadmium & thallium and their compounds (total)	Flue gases from incineration lines 1 and 2	0.02 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year. Then Bi-annually	EN 14385
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Mercury and its compounds	Flue gases from incineration lines 1 and 2	0.02 mg/m^3 Limit does not apply if continuous monitoring has been specified by the Environment Agency	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year and accelerated monitoring at frequency agreed through IC 11. Then Bi-annually. Not required if continuous monitoring has been specified by the Environment Agency	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)**
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Mercury and its compounds	Flue gases from incineration lines 1 and 2	0.02 mg/m^3	Daily average	Continuous Not required unless continuous monitoring has been specified by the Environment Agency after completion of IC10 or if specified by the Environment Agency in line with sampling protocol	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Flue gases from incineration lines 1 and 2	0.3 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year. Then Bi-annually	EN 14385
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Exhaust gas temperature	Flue gases from incineration lines 1 and 2	No limit set	-	Continuous	Traceable to national standards
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Exhaust gas pressure	Flue gases from incineration lines 1 and 2	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)**
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Exhaust gas flow	Flue gases from incineration lines 1 and 2	No limit set	-	Continuous	BS EN 16911-2
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Exhaust gas oxygen content	Flue gases from incineration lines 1 and 2	No limit set	-	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Exhaust gas water vapour content	Flue gases from incineration lines 1 and 2	No limit set	-	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Ammonia (NH_3)	Flue gases from incineration lines 1 and 2	10 mg/m^3	daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Nitrous oxide (N_2O)	Flue gases from incineration lines 1 and 2	No limit set	½-hr average and / or daily average	Continuous	EN 14181
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Carbon dioxide	Flue gases from incineration lines 1 and 2	No limit set	Continuous	Continuous	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 (as shown on the site plan in Schedule 7, Figure 2)	Dioxins / furans (I-TEQ)	Flue gases from incineration lines 1 and 2	0.04 ng/m^3 and 0.06 ng/m^3 if long term limit is specified by the Environment Agency after completion of IC9 or specified by the Environment Agency in line with sampling protocol	periodic over minimum 6 hours, maximum 8 hour period and 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 and long term monitoring if specified by the Environment Agency after completion of IC9 or specified by the Environment Agency in line with sampling protocol	EN 1948 Parts 1, 2 and 3 and CEN TS 1948-5 if specified by the Environment Agency after completion of IC9 or specified by the Environment Agency in line with sampling protocol
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)	Flue gases from incineration lines 1 and 2	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly for first year then bi-annually	EN 1948 Parts 1, 2 and 4
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Dioxins / furans (WHO-TEQ Humans / Mammals, Fish, Birds)	Flue gases from incineration lines 1 and 2	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annually	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)**
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Polybrominated dibenzo-dioxins and furans	Flue gases from incineration lines 1 and 2	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annually	Method based on procedural requirements of EN 1948
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	Flue gases from incineration lines 1 and 2	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 (as shown on the site plan in Schedule 7, Figure 2)	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Back-up electrical generator	No limit set	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Updated 12 July 2022 (formerly known as TGN M5)	Every 1500 hours of operation or once every five years (whichever comes first).	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Updated 12 July 2022 (formerly known as TGN M5)
A3 (as shown on the site plan in Schedule 7, Figure 2)	Carbon monoxide	Back-up electrical generator	No limit set	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Updated 12 July 2022 (formerly known as TGN M5)	Every 1500 hours of operation or once every five years (whichever comes first).	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Updated 12 July 2022 (formerly known as TGN M5)

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 (as shown on the site plan in Schedule 7, Figure 2)	Particulate matter	Flue gases from incineration lines 1 and 2	150 mg/m^3	½-hr average	Continuous	EN 14181 or alternative surrogate as agreed in writing with the environment agency during failure of the continuous emission monitor
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Total Organic Carbon (TOC)	Flue gases from incineration lines 1 and 2	20 mg/m^3	½-hr average	Continuous	EN 14181 or alternative surrogate as agreed in writing with the environment agency during failure of the continuous emission monitor
A1, A2 (as shown on the site plan in Schedule 7, Figure 2)	Carbon monoxide	Flue gases from incineration lines 1 and 2	150 mg/m^3	95% of all 10-minute averages in any 24-hour period	Continuous	EN 14181 or alternative surrogate 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**
W1 (as shown on the site plan in Schedule 7, Figure 2)	Surface water run-off	No parameters set	No limit set	-	-	-

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
As agreed in writing with the Environment Agency	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 first operation and then 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 S3.4 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	EN 14899 and either EN 13137 or EN 15936	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 S3.4 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, A2	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
	A3	After 1500 hours of operation or every five years, whichever comes first.	1 Jan
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 3.5.1	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	

Table S4.2: Annual production/treatment	
Parameter	**Units**
Total Refuse Derived Fuel Incinerated	tonnes
Electrical energy produced	kWh
Thermal energy produced e.g. 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	Number 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	Version 1, 08/03/2021
Air	Forms air 1-9 or other forms as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Residue quality	Form residue 1 and 2 or other form as agreed in writing by the Environment Agency	23/03/2022
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021

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 plant or the measurement devices. Abnormal operation starts as defined in condition [2.3.12] and ends as defined in condition [2.3.13]. 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 and transported by the grate.

“CEM” means Continuous emission monitor.

“CEN” means Commité 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.

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.

“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.

“gas oil” means: (a) any petroleum-derived liquid fuel falling within CN codes 2710 19 25, 2710 19 29, 2710 19 47, 2710 19 48, 2710 20 17 or 2710 20 19; or (b) any petroleum-derived liquid fuel of which less than 65% by volume (including losses) distils at 250 °C and of which at least 85% by volume (including losses) distils at 350 °C by the ASTM D86 method.

“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 or background concentration 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 lll of the Waste Framework Directive.

“Hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

“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.

“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.

“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 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 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
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

When the following terms appear in the waste code list in Schedule 2, table S2.2, 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

Figure 1: Site location and permit boundary

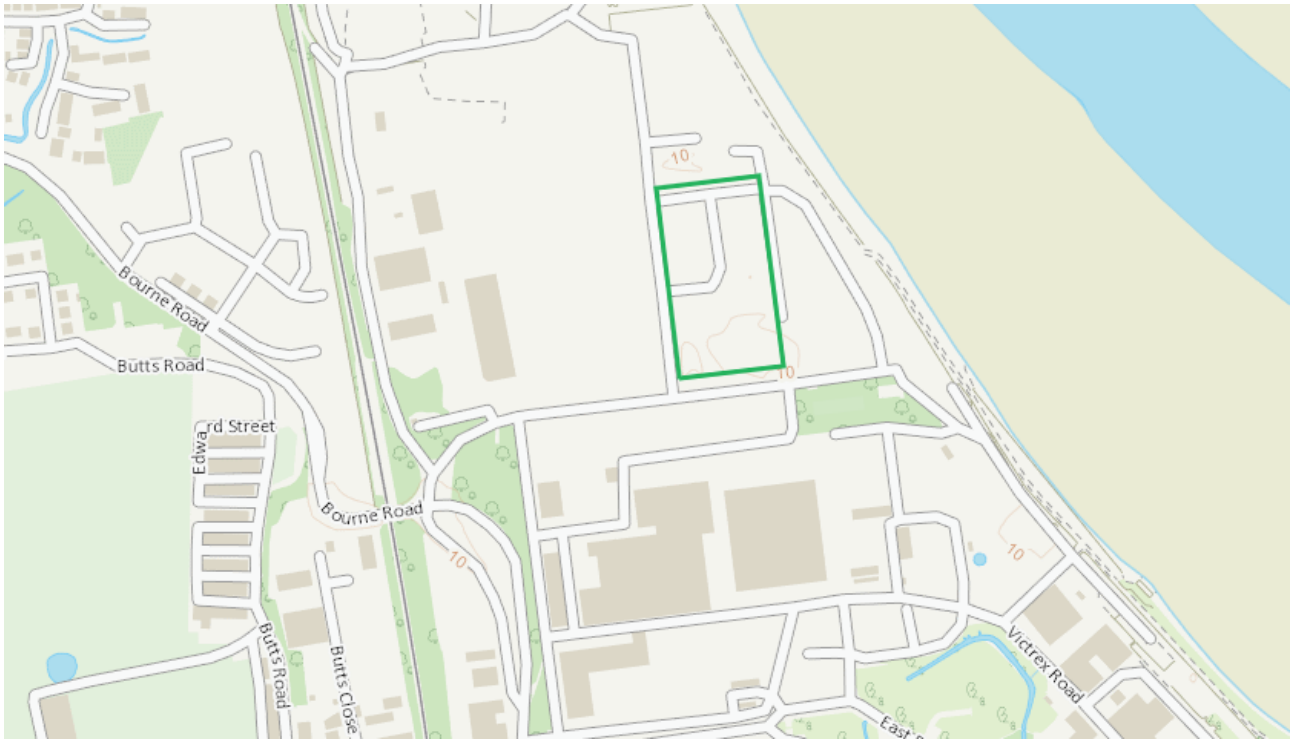
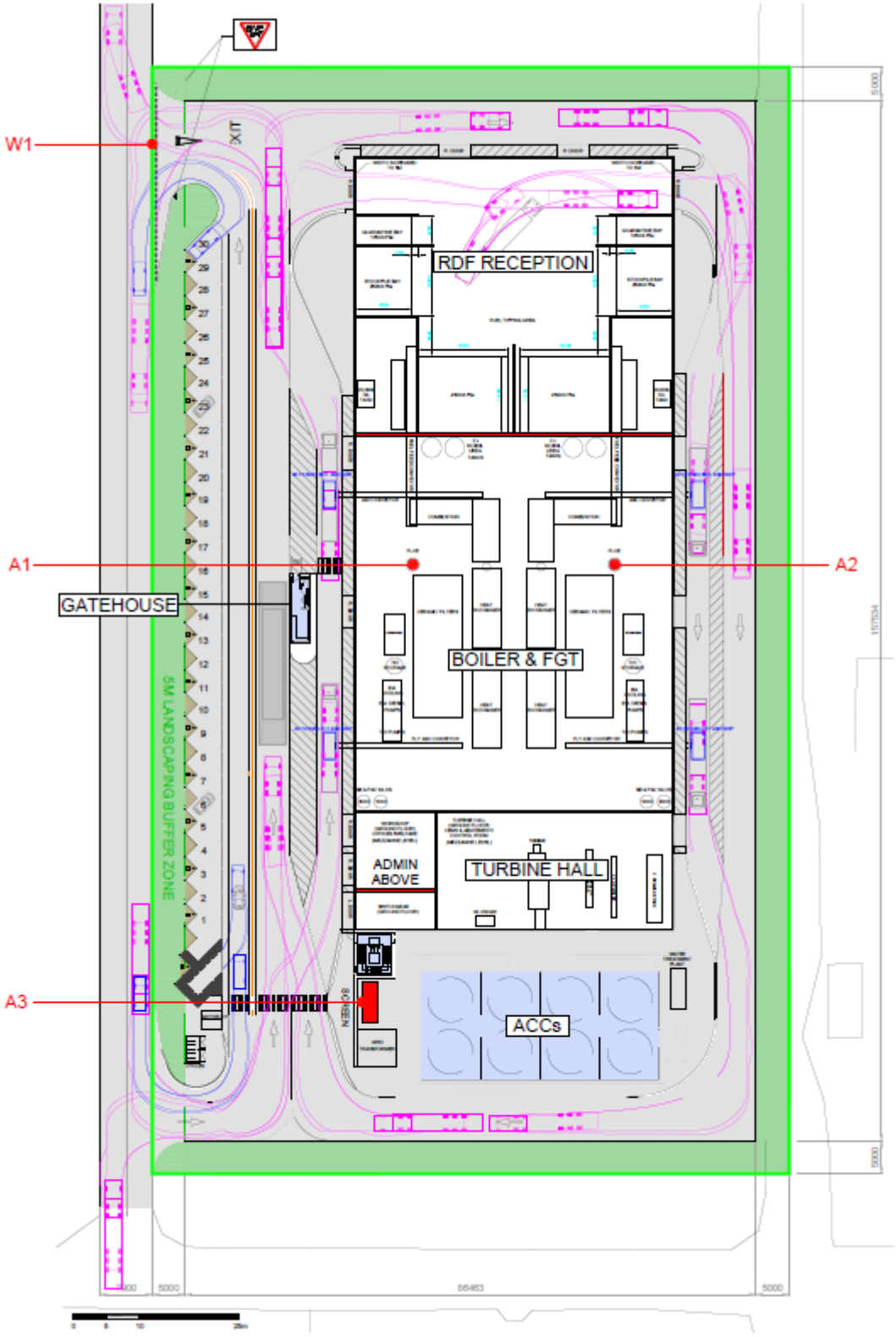


Figure 2: Site layout and emission points



END OF PERMIT