

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Biffa Waste Services Limited

Newhurst Energy Recovery Facility
Newhurst Quarry
Shepshed
Leicestershire
LE12 9BU

Permit number
EPR/TP3036KB

*Draft For
Public
Consultation*

Newhurst Energy Recovery Facility

Permit Number EPR/TP3036KB

Introductory note

This introductory note does not form a part of the permit

This permit controls the operation of an installation, whose purpose is the disposal of waste with energy recovery in an incineration plant. The relevant listed activity is Section 5.1, part A(1)(c) of schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010. The permit implements the requirements of the EU Directives on Integrated Pollution Prevention and Control and Waste Incineration.

The main features of the installation are as follows.

Up to 300,000 tonnes per annum of municipal waste, commercial and industrial waste, and refuse derived fuel will be brought onto the installation. This will be incinerated to dispose of the waste and to generate approximately 25.8MW of electrical energy for export to the National Grid.

The Newhurst Quarry installation is located approximately five kilometres west of the centre of Loughborough. Site access is from the A512 Ashby Road East located approximately 60m north of the site, some 300 metres west of Junction 23 on the M1

Waste will be delivered to the facility by road and unloaded into the waste bunker. The reception area will be enclosed, with rapid access doors to manage traffic and appropriately sized louvered panels to control air movement. The waste bunker will be housed within the main structure of the building to minimise escape of odours and combustion air drawn from the bunker area.

Two identical waste grab cranes will be designed for semi-automatic and manual operation. The grab cranes will be designed to mix, stack and cast shredded waste in the bunker, to provide a consistent feedstock entering the incinerator. Waste will be transferred from the storage bunker to the two parallel process lines using the grab cranes and into each combustion chamber, via dedicated feed chutes and airlocks.

There will be two identical air-cooled moving grate furnaces. The moving grate will comprise inclined fixed and moving bars that move waste from the feed inlet to the residue discharge. The grate movement will turn and mix the waste along the surface of the grate, ensuring all waste will be exposed to the combustion process.

The combustion gas, from the primary stage of the furnace, will be further heated by auto ignition of volatile gases in the first pass of the boiler to reach the specified minimum temperature of 850 degrees centigrade for a minimum of two seconds. The burnt waste from primary combustion on the moving grate will be removed as an ash (Incinerator Bottom Ash (IBA)).

The heat from combustion will be recovered within a waste heat boiler to form high pressure steam, which is used to drive turbines to generate electricity. A proportion of this site generated energy will be used within the facility itself, but the majority will be exported to the National Grid.

Dust collected from the boilers will be discharged as fly ash and collected with the flue gas treatment residues.

The power generation and auxiliary equipment provided include turbine/generator sets, air condensers and a facility with the potential to extract further value from the partially cooled steam or hot water after it has been through the turbines. This may be used to provide Combined Heat and Power (CHP) for homes and businesses within a reasonable proximity to the site.

The combustion gases will be cleaned in a flue gas treatment plant. This will include the injections of ammonia, to control oxides of nitrogen emissions; injection of carbon, primarily to control dioxin emissions; the injection of sodium bicarbonate, to control acid gas emissions, and the use of a fabric filter to remove dust. The treated flue gases will then be emitted via two 96.5m high stacks.

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

Status Log of the permit		
Detail	Date	Comments
Application EPR/TP3036KB/A001	Duly made 19/02/10	
Additional Information Received	23/8/10 & 22/9/10	Email submissions regarding noise assessment
Additional Information Received	25/11/10	Response to Schedule 5 notice requiring further information dated 19 October 2010
Additional Information Received	13/12/10	Response to Schedule 5 notice requiring further information dated 12 November 2010
Post conviction plan for offences at Elvaston Landfill on 21/4/07	15/12/10	Response to letter sent requiring a PCP dated 11 November 2010
Additional Information Received	17/12/10	Response to Schedule 5 notice requiring further information dated 1 December 2010
Additional Information Received	07/02/11	Response to emails requiring further information dated 19 and 21 January 2011
Permit EPR/TP3036KB determined	<i>DD/MM/YY</i>	

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End of Introductory Note

Permit

Permit number

EPR/TP3036KB

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

Biffa Waste Services Limited (“the operator”),

whose registered office is

**Accuray House
Coronation road
Cressex
High Wycombe
Buckinghamshire
HP12 3TZ**

company registration number 00946107

to operate an installation at:

**Newhurst Quarry
Shepshed
Leicestershire
LE12 9BU**

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

*Draft For
Public
Consultation*

Name

Date

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Andrew Nixon

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is recovered and used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy recovery and 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 practicability of Combined Heat and Power (CHP) implementation at least every 2 years. The results shall be reported to the Agency within 2 months of each review.

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:

- (a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;
- (b) review and record at least every four years whether changes to those measures should be made; and
- (c) 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 in condition 2.3.3 shall be clearly distinguished from any other waste produced 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 (a) 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.
- (b) 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, 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.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 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 and holder.
 - (c) having been separately collected for recycling, it is contaminated and otherwise destined for landfill.
- 2.3.4 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.
- 2.3.5 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.
- 2.3.6 Waste shall not be charged, or shall cease to be charged, if:
- (a) the combustion chamber temperature is below, or falls below, 850°; or
 - (b) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded; or
 - (c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than under WID abnormal operating conditions ; or
 - (d) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than under WID abnormal operating conditions.
- 2.3.7 The operator shall have at least one auxiliary burner in each line at start up or shut down or whenever the operating temperature falls below that specified in condition 2.3.6, as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.6 is maintained in the combustion chamber, such burner(s) may 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.
- 2.3.8 The operator shall record the beginning and end of each period of "WID abnormal operation".
- 2.3.9 During a period of "WID abnormal operation", the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.
- 2.3.10 Where, during "WID abnormal operation", any of the following situations arise, the operator shall, as soon as is practicable, cease the burning of waste until normal operation can be restored:
- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to disturbances or failures of the abatement systems, or continuous emission monitors are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
 - (b) the cumulative duration of "WID abnormal operation" periods over 1 calendar year exceeds 60 hours on an incineration line;
 - (c) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 (a) due to disturbances or failures of the abatement systems;
- 2.3.11 The operator shall interpret the end of the period of "WID abnormal operation" as the earliest of the following:
- (a) when the failed equipment is repaired and brought back into normal operation;
 - (b) when the operator initiates a shut down of the waste combustion activity, as described in the application or as agreed in writing with the Environment Agency;
 - (c) when a period of four hours has elapsed from the start of the "WID abnormal operation";
 - (d) when, in any calendar year, an aggregated period of 60 hours "WID abnormal operation" has been reached for a given incineration line.
- 2.3.12 Bottom ash and APC residues shall not be mixed.
- 2.3.13 The by-pass duct shall only operate at start up until the temperature in the boiler outlet duct reaches 120°c, and at shut down when the temperature in the boiler outlet duct goes below 120°c. At all other times the by-pass duct shall remain closed.

2.4 Improvement programme

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2 except in "WID abnormal operation", when 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(a) and S3.2.
- 3.1.2 The limits given in schedule 3 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 of substances not controlled by emission limits

- 3.2.1 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.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 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 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 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;
 - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan;
 - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1, and S3.1(a);
 - (b) process monitoring specified in table S3.3;
 - (c) residue quality in table S3.4
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.

- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3; unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; 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:
- | | |
|---|-----|
| • 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% |
- (b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.5.5(a);
- (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;
- (d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;
- (e) no more than ten daily average values per year shall be determined not to be valid.

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. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
 - (b) the annual production / treatment data set out in schedule 4 table S4.2; and
 - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
 - (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 Article 12(2) of the Waste Incineration Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the WID.
- 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 The Environment Agency shall be notified without delay following the detection of:
- (a) 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;
 - (b) the breach of a limit specified in the permit; or
 - (c) any significant adverse environmental effects.
- 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.

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.

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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 "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity and waste types
S5.1 A1 (c)	The incineration of non-hazardous waste in an incineration plant with a capacity of 1 tonne per hour or more.	From receipt of waste to emission of exhaust gas and disposal of waste arising. Waste types as specified in Table S2.2 of this permit.
Directly Associated Activity		
Electricity Generation	Generation of electrical power, using a steam turbine, from energy recovered from the flue gases.	

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	Operating Techniques detailed in part B of application form, "Best Available Techniques and Operating Techniques (BATOT) statement, and Residue Management Plan	19/2/10
Response to Schedule 5 Notice dated 19/10/10	Answers to questions 1 to 6, 8, 12 & 13 and Appendix 1 "proposed list of wastes for acceptance"	25/11/10
Response to Schedule 5 Notice dated 12/11/10	Answers to questions 1 to 11	13/12/10
Response to emails request for further information dated 19 and 21 January	Answers to all 3 questions	07/2/11

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 and the progress made in the accreditation of the system by an external body or if appropriate submit a schedule by which the EMS will be subject to accreditation.	Within 12 months of the date on which waste is first burnt.
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 PM10, PM2.5 and PM1.0 ranges. The proposal shall include a timetable for approval by the Environment Agency to carry out such tests and produce a report on the results. On receipt of written agreement by 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 carry out an assessment of the impact of emissions to air of Chromium (VI) having regard to the 2009 report of the Expert Panel on Air Quality Standards – Guidelines for Metal and Metalloids in Ambient Air for the Protection of Human Health. The assessment shall predict the impact of Chromium (VI) against the guidelines through the use of emissions monitoring data during the first year of operation and air dispersion modelling. A report on the assessment shall be made to the Environment Agency.	Within 12 months of completion of commissioning
IC4	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.	Within 4 months of the completion of commissioning.
IC5	The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of: <ul style="list-style-type: none"> - the Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NOx) emissions within the emission limit values described in this permit with the minimisation of nitrous oxide emissions. The report shall include an assessment of the level of NOx and N2O emissions that can be achieved under optimum operating conditions. - Details of acid gas and dioxin emission abatement systems including dosing rates 	Within 4 months of the completion of commissioning.
IC6	The Operator shall carry out checks to verify the residence time, minimum temperature and oxygen content of the exhaust gases in the furnace whilst operating under the anticipated most unfavourable operating conditions. The results shall be submitted in writing to the Environment Agency.	Within 4 months of the 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 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 Section 1 of How to comply with your environmental permit – Getting the basics right. 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 which will contain a comprehensive review of the options available for utilising the heat generated 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 waste heat and shall provide a timetable for their implementation.
PO3	Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency for approval a protocol for the sampling and testing of incinerator bottom ash and APC residues for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved.
PO4	On completion of the final design of the installation the Operator shall, revise the Noise Assessment submitted in BATOT9 section of the Environmental Permit Application, and re-submit the assessment to the Environment Agency. The revised assessment shall include the design details for the room dimensions, what the walls and roofs will be made out of and what the sound power levels and quantity of machinery will be in each room. The assessment shall also include the impact of noise on potential Perigrin Falcon nesting sites within Newhurst Quarry.
PO5	Prior to the commencement of commissioning, the Operator shall provide 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.
PO6	After completion of the detailed furnace design and at least 3 months before furnace operation, the Operator shall submit a written report to the Environment Agency, on the details of the computational fluid dynamic (CFD) modelling used in the design. The report shall demonstrate whether the indicative BAT design stage requirements, given in the Incineration of Waste Sector Guidance note EPR 5.01, have been completed. In particular the report will demonstrate whether the residence time and temperature requirements will be met.
PO7	After completion of the detailed furnace design and at least 3 months before furnace operation, the Operator shall submit a written report to the Environment Agency, on the proposed techniques to validate combustion conditions during the commissioning of the furnace. The report shall specify how the indicative BAT “operational stage”, “qualifying zone” and “test conditions” requirements, given in the Incineration of Waste Sector Guidance note EPR 5.01, will be applied.
PO8	On completion of the final design of the Installation, the Operator shall provide a written report to the Environment Agency. The report shall confirm which acid abatement reagent will be used. If Lime is to be used, the report shall contain a review of the impact to the Environment and a review of the BAT assessment.

Schedule 2 - Waste types, raw materials and fuels

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

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
02	Wastes from Agriculture, Horticulture, Aquaculture, Forestry, Hunting and Fishing, Food Preparation and Processing
02 01	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 02	animal tissue waste (Catering Wastes & Former Foodstuffs Only)
02 01 03	plant tissue waste
02 01 04	waste plastics (except packaging)
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site (Spoiled Straw Only)
02 01 07	wastes from forestry
02 01 09	agrochemical wastes other than those mentioned in 02 01.08
02 02	Wastes from the preparation and processing of meat, fish and other foods of animal origin
02 02 02	animal-tissue waste (Catering Wastes & Former Foodstuffs Only)
02 02 03	materials unsuitable for consumption or processing (Catering Wastes & Former Foodstuffs Only)
02 02 04	sludges from on-site effluent treatment
02 03	Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation
02 03 02	waste preserving agents
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 04	Wastes from sugar processing
02 04 03	sludges from on-site effluent treatment
02 05	Wastes from the dairy products industry
02 05 01	materials unsuitable for consumption or processing
02 05 02	sludges from on-site effluent treatment
02 06	Wastes from the baking and confectionary industry
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on-site effluent treatment (Dried sludges only)

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
02 07	Wastes from the production of alcoholic and non alcoholic beverages (except coffee tea and cocoa)
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
03	Wastes from Wood Processing and the Production of Panels and Furniture, Pulp, Paper and Cardboard
03 01	Wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	Wastes from pulp, paper and cardboard production and processing
03 03 01	waste bark and wood
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 10	fibre rejects, fibre, filler and coating-sludges from mechanical separation
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04	Wastes from the Leather, Fur and Textile Industries
04 02	Wastes from the textile industry
04 02 09	wastes from composite materials (impregnated textile, elastomer, plastomer)
04 02 10	organic matter from natural products (e.g. grease, wax)
04 02 20	sludges from on-site effluent treatment other than those mentioned in 04 02 19
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres
07	Wastes from Organic Chemical Processes
07 02	Wastes from the MFSU of plastics, synthetic rubber and man-made fibres
07 02 12	sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 13	waste plastic
07 02 15	wastes from additives other than those mentioned in 07 02 14
07 02 17	wastes containing silicones other than those mentioned on 07 02 16*
07 03	Wastes from the MFSU of organic dyes and pigments (except 06 11)
07 03 12	sludges from on-site effluent treatment other than those mentioned in 07 03 11
07 04	Wastes from the MFSU of organic pesticides (except 02 01 05)
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 05	Wastes from the MFSU of pharmaceuticals
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 05 14	solid wastes other than those mentioned in 07 05 13
07 06	Wastes from the MFSU of fats, grease, soaps, detergents disinfectants and cosmetics

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11
07 07	Wastes from the MFSU of fine chemicals and chemical products not otherwise specified
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
08	Wastes from MFSU of coatings, adhesives, sealants & printing inks
08 01	Wastes from MFSU and removal of paint and varnish
08 01 12	waste paint and varnish other than those mentioned in 08 01 11 (Solidified or Dried only)
08 01 14	sludges from paint or varnish other than those mentioned in 08 01 13
08 01 16	aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
08 03	Wastes from MFSU of printing inks
08 03 07	aqueous sludges containing ink
08 03 13	waste ink other than those mentioned in 08 03 12 (Solidified or Dried)
08 03 15	Ink sludges other than those mentioned in 08 03 14
08 04	Wastes from MFSU of adhesives and sealants (including waterproofing products)
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09 (Solidified or Dried only)
08 04 12	adhesive and sealant sludges other than those mentioned in 08 04 11
08 04 14	aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13
09	Wastes from the Photographic Industry
09 01	Wastes from the photographic industry
09 01 07	photographic film and paper containing silver or silver compounds
09 01 08	photographic film and paper free of silver or silver compounds
09 01 10	single-use cameras without batteries
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01	Wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01 05	plastics shavings and turnings
12 01 15	machining sludges other than those mentioned in 12 01 14
12 01 17	waste blasting material other than those mentioned in 12 01 16
12 01 21	spent grinding bodies and grinding materials other than those mentioned in 12 01 20
15	Waste Packaging, Absorbents, Wiping Cloths, Filter Materials and Protective Clothing Not Otherwise Specified
15 01	Packaging

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging
15 01 03	wooden packaging
15 01 04	metallic packaging
15 01 05	composite packaging
15 01 06	mixed packaging
15 01 07	Glass Packaging
15 01 09	textile packaging
15 02	Absorbents, filter materials, wiping cloths and protective clothing
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	Wastes not otherwise specified in the list
16 01	End of life vehicles, and their components
16 01 19	plastic
16 03	Off-specification batches
16 03 04	inorganic wastes other than those mentioned in 16 03 03
16 03 06	organic wastes other than those mentioned in 16 03 05
17	Construction and Demolition Wastes (including road construction)
17 02	wood, glass and plastic
17 02 01	wood
17 02 03	plastic
17 03	Asphalt, tar and tarred products
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 06	Insulation materials
17 06 04	insulating materials other than those mentioned in 17 06 01 and 17 06 03 (Insulation materials suitable for combustion only)
17 09	Other construction and demolition wastes
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 (Pre-sorted, non-hazardous combustible waste only)
18	Wastes From Human or Animal Health Care and/or Related Research (except kitchen wastes not arising from immediate health care)
18 01	Wastes from natal care, diagnosis, treatment or prevention of disease in humans
18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection
18 01 07	chemicals other than those mentioned in 18 01 06 (Contaminated Packaging Only)

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
18 01 09	medicines other than those mentioned in 18 01 08 (Contaminated Packaging Only)
18 02	Wastes from research, diagnosis, treatment or prevention of disease involving animals
18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection
18 02 06	chemicals other than those mentioned in 18 02 05 (Contaminated Packaging Only)
18 02 08	medicines other than those mentioned in 18 02 07 (Contaminated Packaging Only)
19	Wastes from Waste Management Facilities, Off-Site Waste Water Treatment Plants and the water industry
19 02	Wastes from physico / chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	premixed wastes composed only of non-hazardous wastes
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 03	Stabilised / Solidified wastes
19 03 05	stabilised wastes other than those mentioned in 19 03 04
19 03 07	solidified wastes other than those mentioned in 19 03 06
19 05	Wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable wastes
19 05 03	off-specification compost
19 06	Wastes from anaerobic treatment of waste
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 08	Wastes from waste water treatment plants not otherwise specified
19 08 01	screenings
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil/water separation containing edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 09	Wastes from the preparation of water intended for human consumption or water for industrial use
19 09 01	solid waste from primary filtration and screenings
19 09 04	spent activated carbon
19 10	Wastes from shredding of metal containing wastes
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
19 11	Wastes from oil regeneration
19 11 06	sludges from on-site effluent treatment other than those mentioned in 19 11 05
19 12	Wastes from the mechanical treatment of waste (e.g. sorting, crushing, compacting, pelletising) not otherwise specified
19 12 01	paper and cardboard
19 12 02	ferrous metal
19 12 03	non-ferrous metal
19 12 04	plastic and rubber
19 12 05	glass
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	textiles
19 12 09	minerals
19 12 10	combustible waste (refuse derived fuel)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of waste other than those mentioned in 19 12 11
19 13	Wastes from soil and groundwater remediation
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
20	Municipal Wastes (Household Waste and Similar Commercial, Industrial and Institutional Wastes) Including Separately Collected Fractions
20 01	Separately collected fraction (except 15 01)
20 01 01	paper and cardboard
20 01 02	glass
20 01 08	biodegradable kitchen and canteen waste
20 01 10	clothes
20 01 11	textiles
20 01 25	edible oil and fat
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 30	detergents other than those mentioned in 20 01 29
20 01 32	medicines other than those mentioned in 20 01 31
20 01 38	wood other than that mentioned on 20 01 37
20 01 39	plastics
20 01 40	metals
20 02	Garden and park wastes (including cemetery waste)
20 02 01	biodegradable waste
20 02 03	other non-biodegradable wastes
20 03	Other municipal wastes
20 03 01	mixed municipal waste

Table S2.2 Permitted waste types and quantities for Incineration Plant	
Maximum quantity	300,000 tonnes per annum
Waste code	Description
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 06	waste from sewage cleaning
20 03 07	bulky waste
20 03 99	municipal wastes not otherwise specified

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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 or method
A1 & A2 Location marked on site plan in schedule 7	Particulate matter	Furnace Stack	30 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Particulate matter	Furnace Stack	10 mg/m ³	daily average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Total Organic Carbon (TOC)	Furnace Stack	20 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Total Organic Carbon (TOC)	Furnace Stack	10 mg/m ³	daily average	Continuous measurement	BS EN 15267-3 ¹
A1 & A2 Location marked on site plan in schedule 7	Hydrogen chloride	Furnace Stack	60 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Hydrogen chloride	Furnace Stack	10 mg/m ³	daily average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Hydrogen fluoride	Furnace Stack	2 mg/m ³	periodic over minimum 1-hour period	Quarterly in the first year of operation, then bi-annual periodic measurement	BS ISO 15713

Table S3.1 Point source emissions to air – emission limits and monitoring requirements (continued)

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 & A2 Location marked on site plan in schedule 7	Carbon monoxide	Furnace Stack	100 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Carbon monoxide	Furnace Stack	50 mg/m ³	daily average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Sulphur dioxide	Furnace Stack	200 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Sulphur dioxide	Furnace Stack	50 mg/m ³	daily average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Furnace Stack	400 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Furnace Stack	200 mg/m ³	daily average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Cadmium & thallium and their compounds (total)	Furnace Stack	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN 14385

Table S3.1 Point source emissions to air – emission limits and monitoring requirements (continued)

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 & A2 Location marked on site plan in schedule 7	Mercury and its compounds	Furnace Stack	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN 13211
A1 & A2 Location marked on site plan in schedule 7	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Furnace Stack	0.5 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN 14385
A1 & A2 Location marked on site plan in schedule 7	Dioxins / furans (I-TEQ)	Furnace Stack	0.1 ng/m ³	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN 1948 Parts 1, 2 and 3
A1 & A2 Location marked on site plan in schedule 7	Ammonia	Furnace Stack	-	½-hr average and / or daily average	Continuous measurement	BS EN 15267-3
A1 & A2 Location marked on site plan in schedule 7	Nitrous oxide (N ₂ O)	Furnace Stack	-	periodic over minimum 1-hour period	Quarterly in the first year of operation, then bi-annual periodic measurement	VDI 2469-1 or VDI 2469-2
A1 & A2 Location marked on site plan in schedule 7	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN/TS 1948-4

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Table S3.1 Point source emissions to air – emission limits and monitoring requirements (continued)

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 & A2 Location marked on site plan in schedule 7	Dioxin-like PCBs (WHO-TEQ Fish)	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN/TS 1948-4
A1 & A2 Location marked on site plan in schedule 7	Dioxin-like PCBs (WHO-TEQ Birds)	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN/TS 1948-4
A1 & A2 Location marked on site plan in schedule 7	Specific individual polycyclic aromatic hydrocarbons (PAHs), as specified in Schedule 7.	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	Procedure shall use BS ISO 11338-1 and BS-ISO 11338-2.
A1 & A2 Location marked on site plan in schedule 7	Dioxins / furans (WHO-TEQ Humans / Mammals)	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN/TS 1948-4
A1 & A2 Location marked on site plan in schedule 7	Dioxins / furans (WHO-TEQ Fish)	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN/TS 1948-4
A1 & A2 Location marked on site plan in schedule 7	Dioxins / furans (WHO-TEQ Birds)	Furnace Stack	-	Average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation, then bi-annual periodic measurement	BS EN/TS 1948-4
Vents on storage tanks and silos	No Parameter Set	Storage tanks and silos	-	-		Permanent sampling access not required

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 Location marked on site plan in schedule 7	Particulate matter	Furnace Stack	150 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3 during abatement plant failure
A1 & A2 Location marked on site plan in schedule 7	Total Organic Carbon (TOC)	Furnace Stack	20 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3 during abatement plant failure
A1 & A2 Location marked on site plan in schedule 7	Carbon monoxide	Furnace Stack	100 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3 during abatement plant failure

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Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
SWM1 Surface water monitoring point on outlet of attenuation pond, leading to discharge into Shortcliff Brook at point SW1. Locations marked on site plan in schedule 7	No parameters set	Surface water	No limit set			

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Table S3.3 Process monitoring requirements				
Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
To be agreed 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.
A1 & A2 Location marked on site plan in schedule 7	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1 & A2 Location marked on site plan in schedule 7	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1 & A2 Location marked on site plan in schedule 7	Exhaust gas oxygen content	Continuous	BS EN 15267-3	
A1 & A2 Location marked on site plan in schedule 7	Exhaust gas water vapour content	Continuous	BS EN 15267-3	Unless gas is dried before analysis of emissions.

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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	LOI	<5%	Monthly in first year of operation then quarterly thereafter	Sampling and analysis as per Environment Agency ash sampling protocol.	
Bottom Ash	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds		Monthly in first year of operation then quarterly thereafter	Sampling and analysis as per Environment Agency ash sampling protocol.	
	Dioxins/furans				
	Dioxin-like PCBs				
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	Sampling and analysis as per Environment Agency ash sampling protocol.	

Table S3.4 Residue quality (continued)

Emission point reference or source or description of point of measurement	Parameter	Limit	Monitoring frequency	Monitoring standard or method	Other specifications
APC Residues	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds		Monthly in first year of operation then quarterly thereafter	Sampling and analysis as per Environment Agency ash sampling protocol.	
	Dioxins/furans				
	Dioxin-like PCBs				
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	Sampling and analysis as per Environment Agency ash sampling protocol.	

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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 3.5.1	A1, A2,	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
Process monitoring requirements Parameters as required by condition 3.5.1	As described in table S3.3	As requested by an authorised officer of the Environment Agency.	Start of commissioning
Residue quality Parameters as required by condition 3.5.1	Bottom Ash APC Residues	Monthly in 1 st year of operation, quarterly thereafter	Start of commissioning
		Before use of a new disposal or recycling route	
Functioning and monitoring of the incineration plant as required by condition 4.2.2		Every 12 months	1 Jan

Table S4.2: Annual production/treatment	
Parameter	Units
Total Municipal Waste Incinerated	tonnes
Total Commercial Waste Incinerated	tonnes
Electrical energy produced	KWhrs
Electrical energy exported	KWhrs
Electrical energy used on installation	KWhrs
Other energy produced by installation	KWhrs

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Electrical energy Imported to site	Quarterly	KWhrs / tonne of waste incinerated (dry basis)
Fuel oil / gas consumption	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Mass of Bottom Ash produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Mass of APC residues produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Mass of Other solid residues produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Ammonia consumption	Quarterly	Kgs / tonne of waste incinerated (dry basis)

Activated Carbon consumption	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Sodium Bicarbonate consumption	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Water consumption	Quarterly	Kgs / tonne of waste incinerated (dry basis)

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	<i>DD/MM/YY</i>
Water usage	Form water usage1 or other form as agreed in writing by the Environment Agency	<i>DD/MM/YY</i>
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	<i>DD/MM/YY</i>
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	<i>DD/MM/YY</i>
Residue Quality	Form residue quality 1 or other form as agreed in writing by the Environment Agency	<i>DD/MM/YY</i>

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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	
Measures taken, or intended to be taken, to stop the emission	

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

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

Part B - to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the Operator

Schedule 6 - Interpretation

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

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

“annually” means once every year.

“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.

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

“*bottom ash*” means transported by the grate

“CEM” Continuous emission monitor

“CEN” means Comité Européen de Normalisation

“*daily average*” for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation.

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

“*disposal*” means any of the operations provided for in Annex IIA to Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on Waste.

“*emissions to land*” includes emissions to groundwater.

“*EP Regulations*” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 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 given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

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

“*infectious clinical waste*” means clinical waste incorporating substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms

“ISO” means International Standards Organisation.

“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.

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

“quarterly” for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

“recovery” means any of the operations provided for in Annex IIB to Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on Waste.

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

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

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

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“Waste Incineration Directive” means Directive 2000/76/EC on the incineration of waste (O.J. L 332, 28.12.2000)

“WFD” means Waste Framework Directive (Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on Waste).

“WID abnormal operation” means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices, during which the concentrations in the discharges into air and the purified waste water of the regulated substances may exceed the normal emission limit values.

“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:

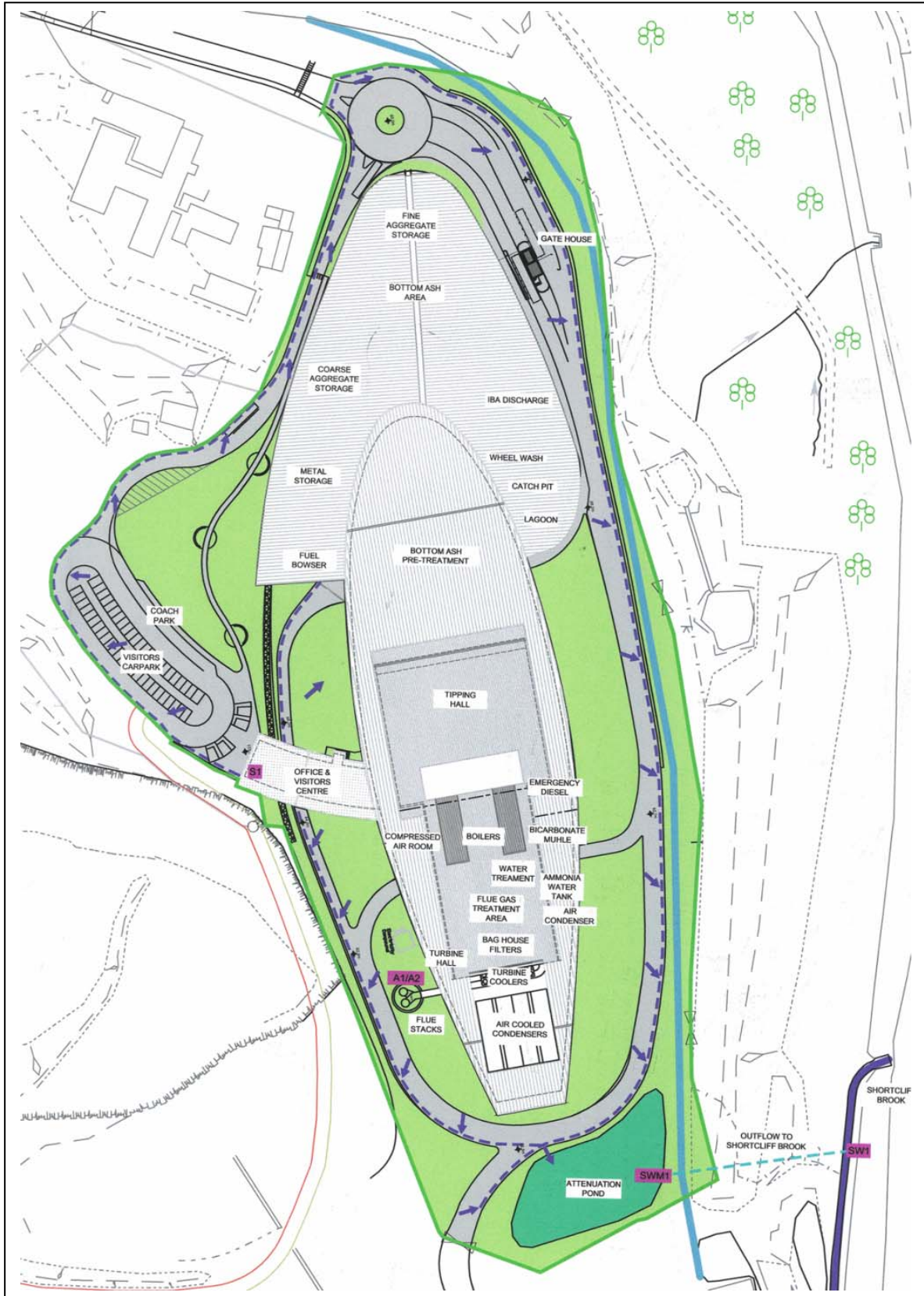
- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- (b) in relation to emissions from non-combustion sources, the 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.

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

Schedule 7 - Site plan



END OF PERMIT