Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Navitas Environmental Limited

Navitas Renewable Energy Park
Appspond Lane
Potters Crouch
St Albans
Hertfordshire
AL2 3NL

Permit number

EPR/NP3338CY

Navitas Renewable Energy Park
Permit number EPR/NP3338CY

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

This permit allows the operation of a waste co-incineration plant; comprising a waste wood processing facility and biomass combustion process at Navitas Renewable Energy Park (NREP).

This activity is classed as a co-incinerator subject to listed activity reference 5.1 A(1)(b) 'the incineration of non-hazardous waste in a waste incineration plant or waste co-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 site is located between the M1 motorway and the A414; 2km to the west of St Albans, Hertfordshire (national grid reference TL109 059).

The facility comprises a wood storage area, a wood processing area and storage of the chippings along with the biomass boiler and a steam turbine to recover energy.

The biomass boiler has a spreader stoker fuel injection process that loads the chipped wood into the furnace. A moving grate ensures the fuel is distributed and combusts evenly. The biomass unit is designed to treat a range of waste wood streams which, when chipped amd mixed will form a homogenous feedstock.

The hot exhaust gases from the combustion stage pass to the multi-pass steam boiler that recovers the heat energy from the gas. The boiler will deliver super heated steam to an energy utilisation system to generate electricity.

The energy utilisation system comprises a turbine with a generator and an air cooled condenser (ACC) with condensate pumps.
Condensate from the ACC will be directed to the feed water tank for the boiler system, minimising instances of blow down.

The steam turbine/ boiler will be a multistage condensing turbine, discharging steam, the generator will produced about 12.2 MW_e of electricity, for use on site and surplus exported to the local distribution network.

The flue gas generated in the combustion process will pass through the boiler sections; entering a dry gas cleaning system before being emitted to air. The gas cleaning system comprises a lime Injection system activated carbon, urea injection (SNCR) and bag filter (absorbing particles and flyash). Supporting these systems is the bag-house filter and storage silos for lime and a filter dust
Fly ash is collected and will be removed from site for disposal. Only treated gases will be emitted via the 31m stack.

Emissions of particulate matter, nitrogen oxides, carbon monoxide, volatile organic compounds and sulphur dioxide are to be continuously monitored in the main stack.

Periodic monitoring is undertaken for other substances which include hydrogen fluoride, hydrogen chloride, cadmium, thallium, mercury, metals, ammonia nitrous oxide and dioxins/furans.

Bottom ash is collected at the end of the grate where it drops into a water sealed quench pit. The bottom ash is collected in skips for removal from site for onward recovery as preference, or disposal.

Fly ash will be collected and stored separately.

Both waste streams will be disposed of by a waste contractor approved to handle that type of waste.

The operator will implement an Environment Management System (EMS) that complies with the requirements of 'How to comply with your Environmental Permit' and would be to ISO 14001 standard.

There are no point source emissions to surface or ground water.

There are no Sites of Special Scientific Interest (SSSI) within 2km or designated European (Natura 2000) sites within 10km of the Installation. There are several Local Wildlife Sites and Ancient Woodlands which have been assessed.

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

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/NP3338CY/A001	Duly made 17/09/12	Application for energy from waste biomass boiler with associated wood processing.
Additional information received	09/04/13; 26/04/13; 16/07/13; 12/02/14; 05/03/14.	Responses to requests for additional information and Schedule 5 notices
Permit determined	03/04/14	Permit granted to Navitas Environmental Limited

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/NP3338CY

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

Navitas Environmental Limited ("the operator"),

whose registered office is

c/o Grant Thornton
202 Silbury Boulevard
Milton Keynes
Buckinghamshire
MK9 1LW

company registration number 06383214

to operate an installation at

Navitas Renewable Energy Park
Appspond Lane
Potters Crouch
St Albans
Hertfordshire
AL2 3NL

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

Name	Date
Anne Nightingale	**03 April 2014**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and energy is used efficiently in the activities.

(b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

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

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

1.2.3 The operator shall review the 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 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 (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 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.

2.3.2 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.

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 ^{o}C; or

(b) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than under abnormal operating conditions; or

(c) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than under ‘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 “abnormal operation”.

2.3.9 During a period of “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 “abnormal operation”, on a co-incineration line any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:

(a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to 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 “ abnormal operation” periods over 1 calendar year has reached 60 hours;

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

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

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

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

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

2.3.12 Bottom ash and APC residues shall not be mixed.

2.4 Improvement programme

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

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

2.5 Pre-operational conditions

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

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

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Where a substance is specified in schedule 3 table S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.

3.1.4 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.

3.1.5 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

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

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

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

3.2.3 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 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.

3.4 Noise and vibration

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

3.4.2 The operator shall:

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

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

3.5 Monitoring

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

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

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

(c) residue quality specified 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 3.3.1 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 and S3.2 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 & NO2 expressed as NO2) 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 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 (a) In the event 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) in the event 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) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 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 “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**
Section 5.1 A(1)(b)	The incineration of non-hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 3 tonnes per hour.	From receipt of waste wood storage, and pre-treatment to combustion and emission of exhaust gas and disposal of waste arising.
Directly Associated Activity		
Electricity Generation	Generation of 12MWe electrical power using a steam turbine, from energy recovered from the flue gases.	Generation of electricity on site for use on site and export to the national grid.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to Part B3 section 3a in the Application; document Final Report 12150i1 section 5 Operations (all parts).	17/09/13
Response to Schedule 5 Notice dated 22/03/13	Response to question A1 detailing operator competence	09/04/13
Response to Schedule 5 Notice dated 22/03/13	Response to question B1 detailing waste types Response to question B2 detailing Air Quality Modelling data Response to question B4 detailing Site Condition Report Response to question B5 detailing Fire Risk Assessment	26/04/13
Response to Schedule 5 Notice dated 22/03/13	Response to question B3 detailing Noise Impact Assessment	30/04/13
Response to Schedule 5 follow up request dated 28/06/13	Additional information provided in response to questions B2, B4 and B5	16/07/13
EA Guidance	TGN 7.01 Reducing fire risk at sites storing combustible materials.	31/10/13

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC 1	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 certification of the system by an external body or if appropriate submit a schedule by which the EMS will be certified.	Within 12 months of the date on which waste is first burnt.
IC 2	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 point A1, identifying the fractions within the PM_{10}, and $PM_{2.5}$ 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.
IC 3	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. This report shall include but is not limited to: an Energy report detailing the energy flows and volumes and overall energy, balance; a Water report detailing the water flows and volumes and overall water balance; a validation of combustion conditions; an assessment of dioxins from boiler operation.	Within 4 months of the completion of commissioning.
IC 4	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 S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC 5	The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of the Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NO_x) 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 NO_x and N_2O emissions that can be achieved under optimum operating conditions. The report shall also provide details of the optimisation (including dosing rates) for the control of acid gases and dioxins.	Within 4 months of the completion of commissioning.
IC 6	The Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values; Cd, Hg, As, and Cr (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 EQS/EAL. In the event that the assessment shows that an EQS/EAL can be exceeded, the report shall include proposals for further investigative work.	15 months from commencement of operations
IC7	The Operator shall submit a written summary report to the Agency to confirm by the results of calibration and verification testing that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	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 commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC8	A post-commissioning report shall be submitted by the Operator to the Environment Agency for approval on the moisture content of chipped wood The report should provide details of how the moisture content of the waste wood will affect combustion performance, including :- • storage arrangements to ensure appropriate moisture content prior to combustion • appropriate transportation arrangements in order to ensure appropriate moisture content prior to combustion • details of any monitoring that will be carried out in order to ensure appropriate moisture content prior to combustion.	Within 4 months of the completion of commissioning.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO 01	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 accordance with the requirements set out in How to comply with your environmental permit. The EMS will include an Accident Management Plan developed in accordance with the requirements set out in How to comply with your environmental permit, TGN7.01 Reducing fire risk on sites storing combustible materials and H1. Commissioning shall not commence until this EMS is approved; 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.
PO 02	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.
PO 03	Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency for approval; a written 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, and with reference to the requirements in Table S3.4 of the permit.
PO 04	Prior to the commencement of commissioning; the Operator shall submit to the Environment Agency for approval; a written Commissioning plan, and proposed timelines for completion of commissioning. The Commissioning plan shall include, but is not limited to; the objectives of the commissioning process; the expected durations of commissioning activities; expected emissions to the environment during the different stages of commissioning; reporting schedule for emissions the different stages of commissioning; the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions; As built plant layout drawings; Computational Fluid Dynamic (CFD) modelling to demonstrate that the design combustion conditions comply with the residence times and temperature requirements of IED; Detailed methodologies and definitions for the start-up and commission of the plant and equipment. Commissioning shall not commence until this Commissioning plan is approved; and shall then be carried out in accordance with the approved Commissioning plan.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO 05	Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency for approval a written Waste report 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 report as approved. Commissioning shall not commence until this Waste report is approved; and the waste procedure shall then be carried out in accordance with the approved Waste report.
PO 06	Prior to the commencement of commissioning, the Operator shall submit a written report to the Environment Agency on the baseline conditions of soil and groundwater at the installation. The report will constitute the baseline survey of the site with results of intrusive monitoring carried out prior to construction of the facility. The baseline survey will assess dioxins/ furans, dioxin-like PCBs, PAHs and heavy metal contents in the vicinity of the Installation. The survey and reporting format shall be to a specification agreed in writing with the Environment Agency. Commissioning shall not commence until the written report is approved.
PO 07	At least 8 weeks prior to the commencement of commissioning of the wood chipping operation, the Operator shall submit a written report to the Environment Agency for approval on the wood pre-treatment process. This report should demonstrate that the necessary procedures are in place for the commissioning and subsequent operation of wood pre-treatment processes. The report should include, but is not limited to: a copy of roles and responsibilities for the pre-treatment process; a copy of the operations & maintenance contract relating to the pre-treatment process; confirmation of how the wood chipping process can achieve appropriate size for most efficient combustion; a detailed plan showing the locations of the storage facilities and maximum storage capacities; and identifying fire breaks and vehicle access routes; details of a planned maintenance schedule for the pre-treatment plant; Commissioning shall not commence until this pre-treatment report is approved; and the procedures shall then be carried out in accordance with the approved report.
PO 08	At least 8 weeks prior to the commencement of commissioning of the biomass boiler operation, the Operator shall submit a written report to the Environment Agency for approval on the biomass boiler operation. This report should demonstrate that the necessary procedures are in place for the commissioning and subsequent operation of the biomass boiler. The report should include, but is not limited to: a copy of roles and responsibilities for the biomass boiler operation; a copy of the operations & maintenance contract relating to the biomass boiler; details of a planned maintenance schedule for the biomass boiler.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
	Commissioning shall not commence until this report is approved; and the procedures shall then be carried out in accordance with the approved report.
PO 09	At least 8 weeks before operations commence the operator shall submit to the Environment Agency for approval a Fire Prevention and Fire Response report. This report should demonstrate that the necessary measures are in place for fire risk management; and should be written with reference to How to comply with your environmental permit: Reducing fire risk on sites storing combustible materials. The report shall include, but is not limited to: detailed site plans showing the wood storage area and the extent of buffer zones (6m) between storage areas and around the pylon; Details of water availability and water pressures locally, with confirmation of water storage capacity details of fire prevention measures (e.g automatic fire detection system, thermal imaging) and justification for measures chosen; details of fire response measures (e,g, automatic fire suppression system, collection of fire water run-off) and justification for measures chosen. Operations shall not commence until this report is approved. The procedures shall be implemented in accordance with the written report as approved.

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Gas Oil <200 m^3 a year; 50,000 litre bunded storage tank	< 0.1% sulphur content
Flue gas treatment chemicals	-
Lime	-
Urea	-
Activated carbon	-
Moisture content of chipped wood	As approved in writing by the Environment Agency under IC 8.

Table S2.2 Permitted waste types and quantities of wood for combustion.	
Maximum quantity	Maximum annual throughput is no more than 86,000 tonnes. Total storage limit for wood (unprocessed and chipped) is 2,500 tonnes at any one time; unless otherwise agreed in writing with the Environment Agency.
Exclusions	No hazardous waste.
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 03	Plant-tissue waste
02 01 07	Wastes from forestry
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
15	**Waste Packaging; Absorbants, Wiping Cloths, Filter Materials and Protective Clothing not otherwise specified**
15 01	**Packaging (including separately collected municipal packaging waste)**
15 01 01	Paper and cardboard packaging
15 01 03	Wooden packaging
17	**Construction and Demolition Wastes (including excavated soil from contaminated sites)**
17 02	**Wood, glass and plastic**
17 02 01	Wood
19	**Wastes from Waste Management Facilities, Off-site Waste Water Treatment Plants and the Preparation of Water Intended for human consumption and Water for Industrial Use**

Table S2.2 Permitted waste types and quantities of wood for combustion.	
Maximum quantity	Maximum annual throughput is no more than 86,000 tonnes. Total storage limit for wood (unprocessed and chipped) is 2,500 tonnes at any one time; unless otherwise agreed in writing with the Environment Agency.
Exclusions	No hazardous waste.
Waste code	**Description**
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified.**
19 12 01	Paper and cardboard
19 12 07	Wood other than that mentioned in 19 12 06
20	**Municipal Wastes (Household waste and similar commercial, industrial and institutional wastes) Including separately collected fractions**
20 01	**Separately collected fractions (except 15 01)**
20 01 01	Paper and cardboard
20 01 38	Wood other than that mentioned in 20 01 37

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 Final exhaust gases from biomass boiler	Particulate matter	Biomass boiler	30 mg/m^3	½-hr average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Particulate matter		10 mg/m^3	daily average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	VOCs as Total Organic Carbon (TOC)		20 mg/m^3	½-hr average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Total Organic Carbon (TOC) (volatile)		10 mg/m^3	daily average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Hydrogen fluoride		2 mg/m^3	periodic over minimum 1-hour period	Quarterly in first year; then bi-annually	BS ISO 15713
A1	Hydrogen chloride		60 mg/m^3	½-hr average	Quarterly in first year; then bi-annually	BS EN 15267-3
A1	Carbon monoxide		100 mg/m	½-hr average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Carbon monoxide		50 mg/m^3	daily average	Continuous measurement	BS EN 15267-3 and BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Sulphur dioxide		200 mg/m^3	½-hr average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Sulphur dioxide		50 mg/m^3	daily average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Oxides of nitrogen (NO and NO_2 expressed as NO_2)		400 mg/m^3	½-hr average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Oxides of nitrogen (NO and NO_2 expressed as NO_2)		200 mg/m^3	daily average	Continuous measurement	BS EN 15267-3 and BS EN 14181
A1	Cadmium & thallium and their compounds (total)		0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year; then bi-annual	BS EN 14385
A1	Mercury and its compounds		0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year; then bi-annual	BS EN 13211
A1	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)		0.5 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year; then bi-annual	BS EN 14385
A1	Ammonia (NH_3)		-	½-hr average and daily average	Quarterly in the first year; then bi-annual	BS EN 15267-3
A1	Nitrous oxide (N_2O)		-	Periodic over minimum 1 hour period	Quarterly in the first year of operation. Then bi-annual.	VDI 2469-1 or VDI 2469-2
A1	Dioxins / furans (I-TEQ)		0.1 ng/m^3	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in first year; then Bi-annual	BS EN 1948 Parts 1, 2 and 3

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	BS EN/TS 1948-4
A1	Dioxin-like PCBs (WHO-TEQ Fish)		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	BS EN/TS 1948-4
A1	Dioxin-like PCBs (WHO-TEQ Birds)		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	BS EN/TS 1948-4
A1	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	Procedure shall use BS ISO 11338-1 and BS-ISO 11338-2.
A1	Dioxins / furans (WHO-TEQ Humans / Mammals)		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	BS EN/TS 1948-4
A1	Dioxins / furans (WHO-TEQ Fish)		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	BS EN/TS 1948-4

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	Dioxins / furans (WHO-TEQ Birds)		-	Periodic measurement average value over sample period of between 6 and 8 hours.	Quarterly in the first year of operation. Then bi-annual.	BS EN/TS 1948-4

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1	No parameters set	Boiler blowdown	-	-	-	-

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**
A1	temperature	continuous	-	As described in the Application
A1	pressure	continuous	-	As described in the Application
A1	oxygen content	continuous	-	BS EN 15267-3

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

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	Sampling and analysis as per Environment Agency ash sampling protocol.	

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	Quarterly	1 January, 1 April, 1 July, 1 October
Process Monitoring requirements Parameters as required by condition 3.5.1	As described in table S3.4	As requested by authorised officer	Completion of commissioning
Residue quality Parameteres as required by condition3.5.1	Bottom Ash APC residues	Every 3 months but monthly for the first year of operation; And before use of a new disposal or recycling route	Completion of commissioning
Functioning and monitoring of the co-incineration plant as required by condition 4.2.2		Every 12 months	1 January, 1 April, 1 July, 1 October
Periods of abnormal operation	Quarterly	No. of occasions and cumulative hours for current calendar year for each line.	1 January, 1 April, 1 July, 1 October

Table S4.2: Annual production/treatment

Parameter	Units
Total Waste wood combusted	tonnes
Electrical energy generated	MWhrs
Electrical energy exported	MWhrs
Electrical energy efficiency	% and MWh/tonne

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 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)
Urea consumption	Quarterly	Kgrs / tonne of waste incinerated (dry basis)
Activated Carbon consumption	Quarterly	Kgs / tonne of waste incinerated (dry basis)

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Lime 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 1	Form Air 1 or other form as agreed in writing by the Environment Agency - Periodic monitoring	03/04/14
Air 2	Form Air 2 or other form as agreed in writing by the Environment Agency - Continuous monitoring	03/04/14
Residue	Form Residue1 or other form as agreed in writing by the Environment Agency	03/04/14
Energy usage	Form Energy 1 or other form as agreed in writing by the Environment Agency	03/04/14
Water usage	Form Water usage 1 or other form as agreed in writing by the Environment Agency	03/04/14
Other performance indicators	Form Performance 1 or other form as agreed in writing by the Environment Agency	03/04/14

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 activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
To be notified Immediately	
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 permit condition	
To be notified Immediately	
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**

In the event 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:	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B - to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 - Interpretation

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

"abnormal operation" means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices [other than continuous emission monitors for releases to air of particulates, TOC and/or CO], 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.

"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 ash falling through the grate*;*

"CEM" Continuous emission monitor

"CEN" means Commité Européen de Normalisation

"daily average" for releases of substances to air means the average of valid half-hourly averages over [a calendar day] [consecutive discrete periods of 24 hours as described in the application / agreed with the Environment Agency] during normal operation.

"dioxin and furans" means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

"disposal" means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

"emissions 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**.**.

"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.

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

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

"*Industrial Emissions Directive" (IED)* means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

"ISO" means International Standards Organisation.

"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 II to Directive 2008/98/EC of the European Parliament and of the Council 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.

"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 in sufficient quantity to cover the grate and to initiate steady-state conditions.

"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.

"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

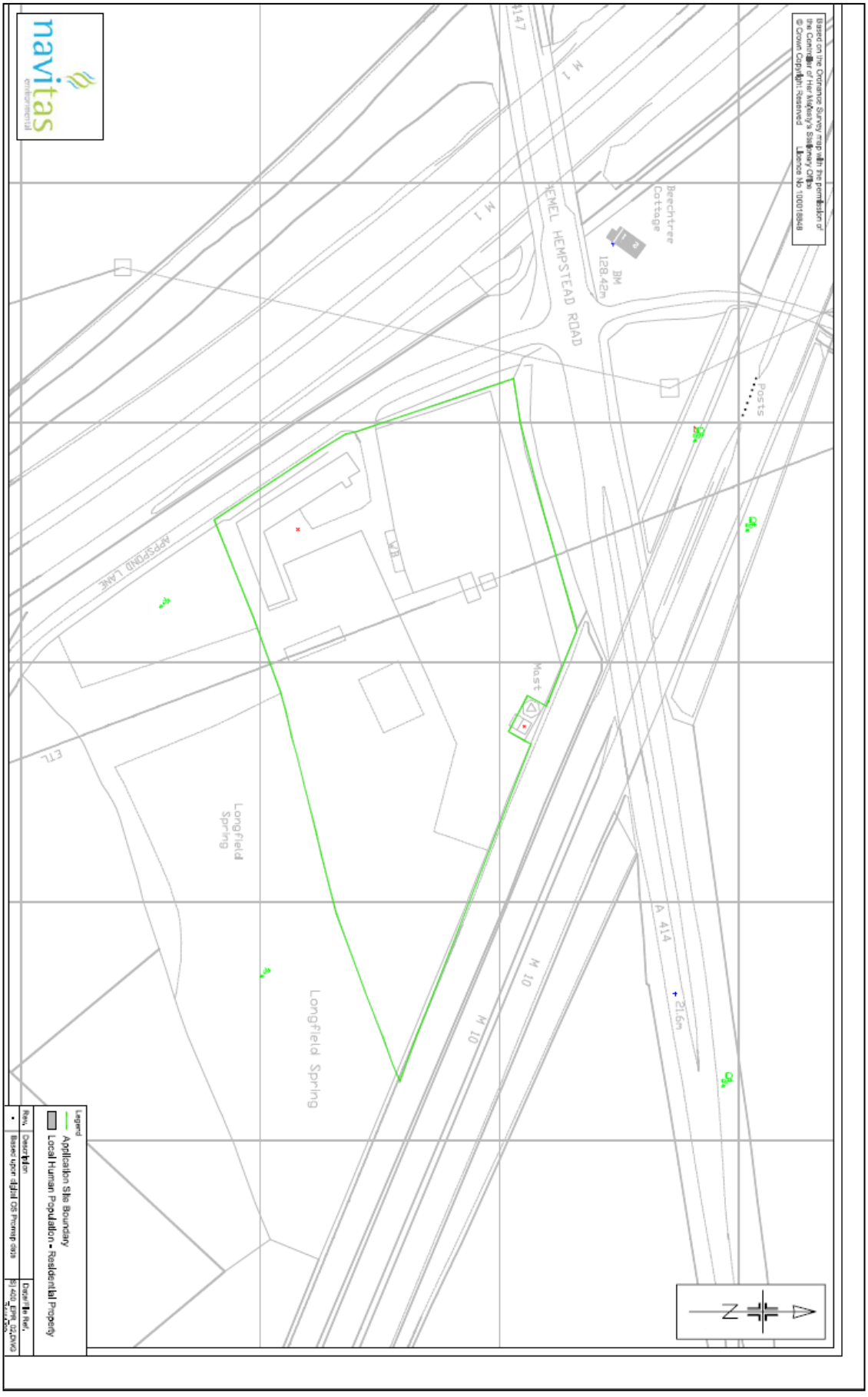
(c) in relation to gases from co-incineration plants the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 6% dry

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(1990)***	***WHO-TEF (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*	*0.0001*	*-*	*-*
Furans				
2,3,7,8-TCDF	*0.1*	*0.1*	*0.05*	*1*
1,2,3,7,8-PeCDF	*0.05*	*0.05*	*0.05*	*0.1*
2,3,4,7,8-PeCDF	*0.5*	*0.5*	*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*	*0.0001*	*0.0001*	*0.0001*

TEF schemes for dioxin-like PCBs			
Congener	***WHO-TEF (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)	*0.0001*	*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)	*0.01*	*0.00005*	*0.001*
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	*0.0001*	*<0.000005*	*0.0001*
2,3,4,4',5-PeCB (114)	*0.0005*	*<0.000005*	*0.0001*
2,3',4,4',5-PeCB (118)	*0.0001*	*<0.000005*	*0.00001*
2',3,4,4',5-PeCB (123)	*0.0001*	*<0.000005*	*0.00001*
2,3,3',4,4',5-HxCB (156)	*0.0005*	*<0.000005*	*0.0001*
2,3,3',4,4',5'-HxCB (157)	*0.0005*	*<0.000005*	*0.0001*
2,3',4,4',5,5'-HxCB (167)	*0.00001*	*<0.000005*	*0.00001*
2,3,3',4,4',5,5'-HpCB (189)	*0.0001*	*<0.000005*	*0.00001*

Schedule 7 - Site plan



Site Location:

END OF PERMIT