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## **Permit with introductory note**

The Environmental Permitting (England & Wales) Regulations 2016

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**Tradebe Healthcare National Limited**

**Wrexham Clinical Waste Treatment  
Facility (Incinerator)  
Marlborough Road  
Wrexham Industrial Estate  
Wrexham  
LL13 9RJ**

Permit number

**EPR/WP3836ZF**

# Wrexham Clinical Waste Treatment Facility (Incinerator)

Permit number **EPR/WP3836ZF**

## Introductory note

### **This introductory note does not form a part of the permit**

This permit controls the operation of a waste incineration plant. The permit implements the requirements of the EU Directives on Industrial Emissions and Waste.

The main features of the permit are as follows:

This installation incinerates clinical waste and has a design capacity to incinerate 800 Kg of clinical waste per hour and is permitted to incinerate up to 6,000 tonnes per year. Clinical waste, including hazardous waste is brought to the site and placed in the storage area. The majority of the waste comes from local hospitals, doctors surgeries and dentists. The waste arrives at the site and is stored in appropriate containers before being charged directly into the incinerator.

The rotary kiln incinerator is followed by a secondary combustion chamber and the combustion process is assisted by use of natural gas as a supplementary fuel.

The combustion gases are cooled in a waste heat recovery boiler before passing through process where carbon lime is injected into the combustion gases to reduce emissions of acid gases and metals. An independent urea injection system in order to reduce the facility's emissions of Oxides of nitrogen (NOx) to air through Selective Non-Catalytic Reduction (SNCR) is also in place.

Bag filters remove particulates before the combustion gases are discharged through a 28 metre high stack.

Bottom ashes produced are discharged to the quench pit and transferred to a skip for onward transport for recycling, recovery or disposal. Air pollution control residues are stored for off site disposal.

After the secondary combustion chamber there is an emergency pressure relief vent, which may operate to prevent dangerous conditions within the plant. The relief vent has it's own flue within the main discharge stack.

Effluent from the process consisting of boiler blowdown from the waste heat boiler and ash quench pit water is discharged to foul sewer. Uncontaminated surface water discharges to a surface water drain and subsequently discharged into the River Clywedog via the Red Wither Brook.

Furnace Technology	Rotary Kiln
Number of lines	1
Waste	clinical / hazardous clinical
Stack height	28 m
Permitted plant throughput	0.8 tonnes per hour / 6000 tonnes per year

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

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application AP3538SM (EPR/AP3538SM/A001)	Duly made 21/03/05	
Additional information received	06/09/05	
Additional information received	08/12/05	
Permit determined (EPR/AP3538SM)	14/12/05	
Variation application GP3335MA (EPR/AP3538SM/V002)	Duly Made 17/10/06	
Variation Notice issued (EPR/AP3538SM)	15/12/06	
Variation Notice VP3739XC issued (EPR/AP3538SM)	22/01/08	
Application EPR/MP3239FQ/T001 (full transfer of permit AP3538SM)	Duly Made 13/04/11	Application to transfer the permit in full to SITA UK Limited.
Transfer determined EPR/MP3239FQ	12/05/11	Full transfer of permit complete.
Variation application EPR/MP3239FQ/V002	Duly made 12/05/11	Application to vary the permit
Application EPR/WP3836ZF/T001 (full transfer of permit EPR/MP3239FQ)	Duly made 04/02/13	Application to transfer the permit in full to Polkacrest Limited.
Transfer determined EPR/WP3836ZF/T001	04/03/13	Full transfer of permit complete.
Notified of change of company name	17/12/14	Name changed to Tradebe Healthcare National Limited
Variation issued EPR/WP3836ZF	14/01/14	Varied permit issued to Tradebe Healthcare National Limited
Notified of amendment to terms of the existing permit EPR/WP3836ZF/V003	09/03/17	The addition to the existing permit of European Waste Code input types 16 03 03, 16 03 04, 16 03 05, 16 03 06, 18 02 01, 19 02 09 & 19 02 10 to Permitted Waste Types table.
Variation issued EPR/WP3836ZF/V003	26/06/2017	Varied permit issued to Tradebe Healthcare National Limited

**Status log of the permit**

<b>Description</b>	<b>Date</b>	<b>Comments</b>
Regulation 61(1) Notice sent to the Operator	15/06/2021	Issue of a Notice under Regulation 61(1) of the EPR. Natural Resources Wales initiated review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for waste incineration
Regulation 61(1) Notice response	14/12/2021	Response received from the operator.
Request review of previous submission and if necessary additional information.	08/03/2022	
Additional information received	05/04/2022	
NRW initiated Variation determined EPR/WP3836ZF/V004	01/11/2022	Variation confirming combustion temperature compliance limits and monitoring
NRW initiated Variation determined EPR/WP3836ZF/V005	22/12/2022	Varied permit issued to Operator. Natural Resources Wales initiated review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for Waste Incineration
Variation application received PAN-023647 (EPR/WP3836ZF/V006)	23/10/2023	Application to install a SNCR system
Additional Information received in response to a Schedule 5 Notice sent on 06/11/24	20/11/2024	Drainage plan and containment provisions for the AdBlue solution.
Variation Determined EPR/ WP3836ZF/V006	27/01/2025	Varied permit issued to Tradebe Healthcare National Limited

End of introductory note

# Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number  
**EPR/WP3836ZF**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/WP3836ZF/V006 authorising

**Tradebe Healthcare National Limited** (“the operator”),

whose registered office is

**Atlas House  
Third Avenue  
Globe Park  
Marlow  
Buckinghamshire  
SL7 1EY**

company registration number 03882534

to operate an installation at:

**Wrexham Clinical Waste Treatment Facility (Incinerator)  
Marlborough Road  
Wrexham Industrial Estate  
Wrexham  
LL13 9RJ**

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

Signed	Date
<b>Holly Noble</b>	<b>27/01/2025</b>

Authorised on behalf of Natural Resources Wales

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

- (a) new plans for significant developments within 15 km of the installation;
- (b) changes to the Local Plan;
- (c) changes to the UK CHP Development Map or similar; and
- (d) new financial or fiscal incentives for CHP; and
- (e) Any work on the installation steam system which could facilitate or enable cost effective installation of steam and/or hot water pass-out connections such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.

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

1.2.3 The operator shall provide and maintain steam and/or hot water pass-outs if a review of CHP implementation or readiness identifies viable CHP opportunities, as required in writing by Natural Resources Wales and according to a timescale set by Natural Resources Wales.

### 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 red 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 Natural Resources Wales.
- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation ("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 Natural Resources Wales.

2.3.2 Waste shall only be accepted if:

- (a) it is of a type and quantity listed in schedule 2 table S2.1; and
- (b) it conforms to the description in the documentation supplied by the producer and holder.

- 2.3.3 Waste paper, metal, plastic or glass that has been separately collected for the purpose of preparing for re-use or recycling shall not be accepted. Waste from the treatment of these separately collected wastes shall only be accepted if incineration delivers the best environmental outcome in accordance with regulation 12 of the Waste (England and Wales) Regulations 2011.
- 2.3.4 Separately collected fractions other than those listed in condition 2.3.3 shall not be accepted unless they are unsuitable for recovery by recycling.
- 2.3.5 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.
- 2.3.6 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.
- 2.3.7 Hazardous waste shall not be mixed, either with a different category of hazardous waste or with other waste, substances or materials, unless it is authorised by schedule 1 table S1.1 and appropriate measures are taken.
- 2.3.8 The operator shall burn only those hazardous wastes where the throughputs, calorific values and pollutant compositions are within the ranges specified in the Application, unless otherwise agreed in writing with Natural Resources Wales.
- 2.3.9 The operator shall ensure that prior to accepting waste subject to condition 2.3.8 at the site, it has obtained sufficient information about the hazardous wastes to be burned to demonstrate compliance with the characteristics described in condition 2.3.8.
- 2.3.10 Waste shall not be charged if:
- (a) the secondary combustion chamber temperature is below 850 °C,
  - (b) it is hazardous waste with a hazardous halogenated organic content of more than 1% (expressed as chlorine) and the secondary combustion chamber temperature is below 1,100 °C.
  - (c) it is cytotoxic or cytostatic waste and the secondary combustion chamber temperature is below 1,000 °C
  - (d) any continuous emission limit value in Table S3.1(a) is exceeded during abnormal operation; or
  - (e) any continuous emission limit value in Table S3.1 is exceeded, other than during abnormal operation; or
  - (f) continuous emission monitors to demonstrate compliance with any continuous emission limit value in Table S3.1 are unavailable other than during abnormal operation; or
  - (g) there is a stoppage, disturbance or failure of the activated carbon abatement system, other than during abnormal operation; or

- (h) continuous emission monitors to demonstrate compliance with the emission limit values for particulates, TOC or CO in Schedule 3 are unavailable unless alternative techniques, as agreed in writing with Natural Resources Wales, are used to demonstrate compliance with those emission limit values; or
  - (i) the oxygen level is below, or falls below 6% (wet) by volume; or
  - (j) The emergency relief vent is open.
- 2.3.11 The operator shall record the beginning and end of each period of “abnormal operation”.
- 2.3.12 During a period of “abnormal operation”, the operator shall restore normal operation of the failed equipment or replace the failed equipment as soon as possible.
- 2.3.13 The operator shall interpret the start of the period of “abnormal operation” as the earliest of the following:
- (a) a technically unavoidable stoppage, disturbance, or failure of continuous emission monitors.
  - (b) a technically unavoidable stoppage, disturbance, or failure of the activated carbon abatement system.
  - (c) Any other technically unavoidable stoppage, disturbance, or failure of the plant which is causing or could lead to an exceedance of an emission limit value in table S3.1.
- 2.3.14 The operator shall interpret the end of the period of “abnormal operation” as the earliest of the following:
- (a) when the failed equipment is repaired and brought back into normal operation;
  - (b) when the operator initiates a shut down of the waste combustion activity, as described in the application or as agreed in writing with Natural Resources Wales;
  - (c) The failed equipment has not been repaired and brought back into normal operation and a single period of abnormal operation reaches a duration of 4 hours after the start of abnormal operation on an incineration line;
  - (d) Abnormal operation occurs on an incineration line and the cumulative duration of abnormal operation periods over 1 calendar year has reached 60 hours on that incineration line;
- 2.3.15 The operator shall have at least one auxiliary burner in each line which shall be operated at start up, shut down and as required during operation to ensure that the operating temperature specified in condition 2.3.10 is maintained as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.10 is maintained in the combustion chamber, such burner(s) shall be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.
- 2.3.16 If Infectious clinical waste is burned, it must be placed in the furnace without first being mixed with other categories of waste, using techniques which are no less effective than those described in the application.
- 2.3.17 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 Natural Resources Wales.

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

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3, subject to condition 3.2.1 shall not be exceeded.
- 3.1.3 Wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3 table S3.5. Additional samples shall be taken and tested and appropriate action taken, whenever:
- (a) disposal or recovery routes change; or
  - (b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.
- 3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

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

- 3.2.1 The limits for emissions to air apply as follows:
- (a) The limits in table S3.1 shall not be exceeded except during periods of abnormal operation; and
  - (b) The limits in table S3.1(a) shall not be exceeded.
- 3.2.2 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1 and S3.1(a); the Continuous Emission Monitors shall be used such that;
- (a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages of the emission limit values:

• Carbon monoxide	10%
• Sulphur dioxide	20%
• Oxides of nitrogen (NO & NO <sub>2</sub> expressed as NO <sub>2</sub> )	20%
• Particulate matter	30%
• Total organic carbon (TOC)	30%
• Hydrogen chloride	40%
• Hydrogen fluoride	40%
• Ammonia	40%
• Mercury	40%

- (b) valid half-hourly average values or 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.2.2 (a).
- (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour or 10 minute period, the half-hourly average or 10-minute average shall in any case be considered valid if measurements are available for a minimum of 20 minutes or 7 minutes during the half-hour or 10-minute period respectively. The number of half-hourly or 10-minute averages so validated shall not exceed 5 or 15 respectively per day.
- (d) daily average values shall be calculated as follows: the average of valid half hourly averages or 10 minute averages over a calendar day excluding half hourly averages or 10 minute averages during periods of abnormal operation. The daily average value shall be considered valid if no more than five half-hourly average or fifteen 10-minute average values in any day have been determined not to be valid;
- (e) no more than ten daily average values per year shall be determined not to be valid:

### **3.3 Emissions of substances not controlled by emission limits**

- 3.3.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.3.2 The operator shall:
  - (a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.
- 3.3.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.4 Odour**

- 3.4.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.4.2 The operator shall:
  - (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

## **3.5 Noise and vibration**

- 3.5.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.5.2 The operator shall:
- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

## **3.6 Monitoring**

- 3.6.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1, S3.1(a), S3.2 and S3.3;
  - (b) process monitoring specified in table S3.4;
  - (c) residue quality in table S3.5.
- 3.6.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by Natural Resources Wales. 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. Newly installed Data handling and acquisition systems (DAHS), or DAHS replacing existing DAHS, shall have MCERTS certification.
- 3.6.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.1(a), S3.2 and S3.3 unless otherwise agreed in writing by Natural Resources Wales.

## **3.7 Pests**

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

- (a) if notified by Natural Resources Wales, submit to Natural Resources Wales for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;
- (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by Natural resources Wales.

## 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 Natural Resources Wales, 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 Natural Resources Wales.

### 4.2 Reporting

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

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) 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 Natural Resources Wales. 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 Natural Resources Wales, 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 Natural Resources Wales, 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 Natural Resources Wales 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 Natural Resources Wales,
  - (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 Natural Resources Wales, 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.
- (d) In the event of activation of the emergency release valve the operator must inform Natural Resources Wales immediately.
- 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 Any information provided under condition 4.3.1 (d) shall be confirmed by sending the information listed in part (a) of schedule 5 to this permit within the time period specified in that schedule.
- 4.3.4 Where Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.5 Natural Resources Wales 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.

4.3.6 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) Natural Resources Wales 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.

4.3.7 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.

## **4.4 Interpretation**

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

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

# Schedule 1 - Operations

**Table S1.1 activities**

Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity and waste types
S5.1 A1 (a)	The incineration of hazardous waste in a waste incineration plant with a capacity exceeding 10 tonnes per day.	<p>The incineration of Clinical waste in a facility with a throughput of 6000 tonnes per year</p> <p>From receipt of waste to emission of exhaust gas and disposal of waste arising.</p> <p>Waste types and quantities as specified in Table S2.1 of this permit.</p>

**Table S1.2 Operating techniques**

Description	Parts	Date Received
Application	Information found in sections 2.1 and 2.2 of the main application	21/03/05
Additional Information received	Information relating to compliance with WID with regard to emissions and monitoring	06/09/05
Application for variation GP3335MA	All	15/09/06
Variation Application	Section C2 of the application. And associated appendices	10/12/07
Application for variation EPR/MP3239FQ/V002	All	12/05/11
Response to regulation 61(1) Notice – request for information dated 14/12/2021 detailing how the Operator will comply with the BAT conclusions for Waste Incineration, under Directive 2010/75/EU of the European Parliament and of the Council	All	05/04/22
Other than normal operating conditions (OTNOC) management plan	As stated in written approval to the response to Improvement Condition IC14	Post variation V005 issue

**Table S1.2 Operating techniques**

Description	Parts	Date Received
	Environmental Risk Assessment	26/10/2023 and 12/08/2024
Application for variation EPR/WP3836ZF/V006	HAZOP	26/10/2023
	Site Delivery Offloading Procedure	26/10/2023
	Odour Management Plan	24/07/2024
	Periodic Inspection and Maintenance	26/10/2023

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IC1	The Operator shall carry out an assessment of options for the replacement of the moving floor infeed, feeding waste into the rotary kiln, having regard to sector guidance note S5.01. Where options are found that are regarded as BAT for the future, provide an implementation plan and timescale agreed with Agency.	Superseded
IC2	The Operator shall review containment measures for the prevention or minimisation of liquid and solid releases to surface water drains. The Operator shall submit a summary report of the survey and compare findings against indicative BAT requirements provided in sector guidance note S5.01. Where improvements can be made, and the option is considered BAT for future use, provide an implementation plan with a timescales to be agreed with the Agency.	Superseded
IC3	The Operator shall submit a proposal to the 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 PM10, PM2.5 and PM1.0 ranges. The proposal shall include a timetable to carry out such tests and produce a report on the results. On receipt of written agreement by the Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Agency a report on the results.	Superseded
IC4	The Operator shall calibrate and verify the performance of Continuous Emission Monitors for release points and parameters as specified in Table 2.2.2 to BS EN 14181 and submit a summary report to the Environment Agency as evidence of compliance with the requirements of BS EN 14181.	Superseded
IC5	The Operator shall develop a written site closure plan with regard to the requirements set out in section 2.11 of the Agency Guidance Note S6.10. Upon completion of the plan a summary of the document shall be submitted to the Agency in writing.	Superseded
IC6	The Operator shall produce an Energy Efficiency Plan having regard to the Sector Guidance (S5.01). Upon completion of the plan a summary of the document shall be submitted to the Agency in writing.	Superseded

**Table S1.3 Improvement programme requirements**

IC7	The Operator shall develop a written Accident Management Plan having regard to the requirements set out in Sector Guidance note S5.01. When complete, the plan shall be submitted to the Agency in writing.	Superseded
IC8	The operator shall review and update the waste pre-acceptance procedures to conform with the requirements set out in section 2.2 of the Agency Guidance Document "Clinical Waste (EPR 5.07 version 1.1)". Upon completion of the review a summary of the revised procedures shall be submitted to the Agency.	Superseded
IC9	The operator shall review and update the on-site acceptance procedures to conform with the requirements set out in section 2.2 of the Agency Guidance Document "Clinical Waste (EPR 5.07 version 1.1)". Upon completion of the review a summary of the revised procedures shall be submitted to the Agency.	Superseded
IC10	The operator shall review and update the operating procedures relating to storage, handling and dispatch of waste to conform with the requirements set out in section 3.2 of the Agency Guidance Document "Clinical Waste (EPR 5.07 version 1.1)". Upon completion of the review a summary of the revised procedures shall be submitted to the Agency.	Superseded
IC11	The operator shall submit to Natural Resources Wales an assessment of the impacts to air quality and habitats on the worst case use of the plant's emergency release valve (ERV) considering both duration and frequency of events based on operation of the ERV at the installation over the last 5 years. Where the assessment uses data from sources other than measured data at this incineration plant, the operator shall provide a justification.	Completed
IC12	<p>The operator shall carry out a study to determine if additional measures will be needed at the installation to meet the standards specified within BAT Conclusion of the Waste Incineration BREF Document (EU 2019): BAT 29.</p> <p>The study shall also contain a description of how the measures will be operated on an ongoing basis to minimise NO<sub>x</sub> emissions, including target emission limit values for NO<sub>x</sub> and for any reagent used (including process optimisation and monitoring).</p> <p>A written report of the study shall be submitted to Natural Resources Wales.</p>	Completed
IC13	<p>The operator shall calculate the boiler efficiency using the method set out in the general considerations section of the BAT conclusions and submit details of the calculation to Natural Resources Wales. The calculation shall use the boiler efficiency determination guidance (or other methodology as agreed in writing with Natural Resources Wales) to calculate boiler efficiency which can then be used to calculate Q<sub>th</sub>.</p> <p>Where the calculated boiler efficiency is below the range specified in BAT 20 of the BAT conclusions. The operator shall carry out an assessment of the opportunities to increase the energy efficiency of the installation.</p> <p>The assessment shall include but not necessarily be limited to:</p> <ul style="list-style-type: none"><li>• Improvements that could be made to the furnace (including control systems) in order to increase the amount of thermal energy produced per unit of thermal energy in the waste.</li><li>• Improvements that could be made to the steam system and related components to allow a greater quantity of electricity to be generated per unit of thermal energy in the steam.</li><li>• Improvements in the heat and electrical efficiency of the plant's ancillary systems that could be made in order to reduce the parasitic heat and electrical loads of the plant.</li></ul>	Completed

**Table S1.3 Improvement programme requirements**

	<ul style="list-style-type: none"> <li>Where relevant, an implementation plan for the improvements identified, including the anticipated increase in the gross and/or net electrical efficiency of the plant which would be achieved.</li> <li>A review of the viability of Combined Heat and Power (CHP) implementation</li> </ul> <p>A written copy of the assessment shall be submitted to Natural Resources Wales</p>	
IC14	<p>The operator shall submit an Other than normal operating conditions (OTNOC) management plan to Natural Resources Wales for approval.</p> <p>The OTNOC management plan shall be produced in line with all relevant current guidance provided by Natural Resources Wales to the operator and shall consider the requirements of the following BAT conclusions of the Waste Incineration BREF Document (EU 2019):</p> <ul style="list-style-type: none"> <li>BAT 1 (xxiv) – BAT is also to incorporate the following features in the EMS: <ul style="list-style-type: none"> <li>(xxiv) for incineration plants, an OTNOC management plan (see BAT 18)</li> </ul> </li> <li>BAT 5 – BAT is to appropriately monitor channelled emissions to air from the incineration plant during OTNOC</li> <li>BAT 18 – In order to reduce the frequency of the occurrence of OTNOC and to reduce emissions to air and, where relevant, to water from the incineration plant during OTNOC, BAT is to set up and implement a risk based OTNOC management plan as part of the environmental management system (BAT 1) that includes all of the following elements: <ul style="list-style-type: none"> <li>Identification of potential OTNOC (e.g. failure of equipment critical to the protection of the environment ('critical equipment')), of their root causes and of their potential consequences, and regular review and update of the list of identified OTNOC following the periodic assessment below;</li> <li>Appropriate design of critical equipment (e.g. compartmentalisation of the bag filter, techniques to heat up the flue-gas and obviate the need to bypass the bag filter during start-up and shutdown, etc.);</li> <li>Set-up and implementation of preventative maintenance plan for critical equipment (see BAT 1(xii))</li> <li>Monitoring and recording of emissions during OTNOC and associated circumstances (see BAT 5)</li> <li>Periodic assessment of the emissions during OTNOC (e.g. frequency of events, duration, amount of pollutants emitted) and implementation of corrective actions if necessary.</li> </ul> </li> </ul> <p>The OTNOC management plan shall be submitted to Natural Resources Wales for approval by the date specified.</p>	03 June 2023 or otherwise agreed in writing with Natural Resources Wales
IC15	<p>The Operator shall submit a written report to Natural Resources Wales for written approval on all discharges to surface waters and/or sewer from the site, you must provide information for priority hazardous substances and any other relevant substances.</p> <p>The emissions monitoring for these substances should be carried out using the methods and standards described in the M18 guidance on "Monitoring of discharges to water and sewer".</p> <p>With reference to the risk assessment guidance on the gov.uk website entitled "Surface water pollution risk assessment for your environmental permit" (accessible via this link: <a href="https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit">https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit</a>) carry out the following assessments:</p> <ul style="list-style-type: none"> <li>Screening tests for priority hazardous pollutants and any other relevant priority hazardous substances.</li> </ul>	Completed

**Table S1.3 Improvement programme requirements**

- For any substance which is not screened out by the screening tests you will need to carry out modelling, as described in the risk assessment guidance “Surface water pollution risk assessment for your environmental permit”.

You must provide us with the results from the emissions monitoring, the results from the screening tests and the results from any modelling.

You can use the H1 electronic screening tool to present the emissions data and to carry out the screening tests. We will provide a copy of the tool to your local representative at the site address.

With regard to the screening a full list of relevant substances is provided on the “Surface water pollution risk assessment for your environmental permit” pages of the gov.uk website. You should review the list and carry out the screening for any hazardous pollutants.

With regard to screening for priority hazardous pollutants, a full list of relevant priority hazardous substances and their associated annual significant loads is given on the “Surface water pollution risk assessment for your environmental permit” pages of the gov.uk website.

IC16	The Operator shall submit a written report to Natural Resources Wales for written approval on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED and provided in accordance with the European Commission Guidance concerning the baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions. The report shall contain information, supplementary to that already provided in the application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED	03 June 2023 or otherwise agreed in writing with Natural Resources Wales
IC17	The operator shall submit a residues management plan to Natural Resources Wales for written approval. This plan shall include measures aimed to: <ul style="list-style-type: none"> <li>(a) Minimise the generation of residues</li> <li>(b) Optimise the reuse, regeneration, recycling of and/or energy recovery from the residues</li> <li>(c) Ensure the proper disposal of residues</li> </ul>	03 June 2023 or otherwise agreed in writing with Natural Resources Wales

## Schedule 2 - Waste types, raw materials and fuels

<b>Table S2.1 Permitted Waste Types and quantities for incineration</b>		
<b>Maximum quantity: 6000 tonnes per year</b>		
<b>Waste type</b>	<b>European Waste Catalogue Number (where available) or other specification</b>	<b>Description</b>
Waste from human and animal health care and/or research	18 01 01 <i>sharps (except 18 01 03)</i>  18 01 03* - wastes whose collection and disposal is subject to special requirements in order to prevent infections  18 02 01 sharps (except 18 02 02)  18 02 02* - wastes whose collection and disposal is subject to special requirements in order to prevent infections	Clinical waste category -- infectious waste, suitable for alternative treatment.
	18 01 03* and 18 01 06*/07,  18 02 02* and 18 02 05*/06	Clinical waste category -- infectious waste containing or contaminated with chemicals
Waste from human and animal health care and/or research	18 01 06* and 18 01 02/03*,  18 02 05* and 18 02 02*/03	Clinical waste category - Chemically preserved anatomical waste.
	18 01 03* or 18 02 02*	Clinical waste category – non- chemically preserved anatomical waste.
	18 01 02*, 18 01 04 or 18 02 03	Anatomical waste (non-clinical waste only)
Sharps	18 01 03*, 18 02 02*	Non-medicinally contaminated sharps
	20 01 99	Sharps from non-healthcare related activities only
Sharps and waste medicines and chemicals	18 01 03* and 18 01 09, 18 02 02* and 18 02 08,  18 01 03* and 18 01 08*, 18 02 02* and 18 02 07*	Medicinally contaminated sharps (not cytotoxic and cytostatic)  Cytotoxic and cytostatic contaminated sharps
	18 01 08* – cytotoxic and cytostatic medicines 18 01 09 – medicines other than those mentioned in 18 01 08* 18 02 07* – cytotoxic and cytostatic medicines 18 02 08 – medicines other than those mentioned in 18 02 07* 19 02 09* solid combustible wastes containing hazardous substances 19 02 10 combustible wastes other than those mentioned in 19 02 08* and 19 02 09*	Waste medicines (including out of date or out of specification medicines)

	20 01 31* – cytotoxic and cytostatic medicines 20 01 32 – medicines other than those mentioned in 20 01 31*	Waste medicines (separate fractions collected from or returned from households)
	18 01 06* - chemicals consisting of or containing dangerous substances 18 02 05* - chemicals consisting of or containing dangerous substances 18 01 07 - chemicals other than those mentioned in 18 01 06* 18 02 06 - chemicals other than those mentioned in 18 02 05*	Waste chemicals (excluding photochemicals)
	07 05 13* - solid wastes containing dangerous substances 07 05 14 - solid wastes other than those mentioned in 07 05 13* 16 03 03* - inorganic wastes containing hazardous substances 16 03 04 inorganic wastes other than those mentioned in 16 03 03* 16 03 05* organic wastes containing hazardous substances 16 03 06 organic wastes other than those mentioned in 16 03 05*	Wastes (other than medicines) from pharmaceutical manufacture
Waste from agriculture, horticulture and food preparation and processing	02 01 02 -animal tissue waste 02 01 03 -plant tissue	Waste from agriculture, food preparation and processing
Impounded/condemned foodstuffs	02 02 02 – animal tissue waste 02 02 03 – material unsuitable for consumption or processing 02 03 04 – materials unsuitable for consumption or processing 02 05 01 - materials unsuitable for consumption or processing 02 06 01 – materials unsuitable for consumption or processing	Waste from agriculture, food preparation and processing
Discarded packaging, absorbents and filter materials associated with permitted wastes	15 01 01 - paper and cardboard packaging 15 01 02 - plastic packaging 15 01 05 - composite packaging 15 01 06 - mixed packaging 15 01 09 - textile packaging 15 01 10* - packaging containing residues of or contaminated by dangerous substances 15 02 02* absorbents, filter materials etc. contaminated by dangerous substances 15 02 03 absorbents, filter materials etc.	Waste packaging and absorbents
Scene of crime/accident materials	16 01 21* - hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14	Confiscated/confidential material

Confidential material	16 02 14 - discarded equipment other than those mentioned in 16 02 09 to 16 02 13 20 01 01 paper and cardboard 20 01 10 clothes	Confiscated/confidential material
Wastes from alternative treatment processes treating healthcare wastes	19 02 03 – premixed wastes composed only of non-hazardous wastes (if landfilling not possible) 19 02 04* – premixed wastes composed of at least one hazardous waste (process failure waste)	Waste from physico/chemical treatments of waste
Prohibited plants and invasive and injurious weeds	20 02 01 biodegradable waste	Waste from agriculture, food preparation and processing
Substances and goods seized/confiscated by police/customs	20 01 99 other fractions not specified	Confiscated/confidential material
Animal faeces collected from parks/gardens	20 02 01 biodegradable waste	Waste from agriculture, food preparation and processing
Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	20 01 99 other fractions not otherwise specified	Separately collected fractions of municipal clinical waste (not arising from healthcare and/or related research i.e. not including waste from natal care, diagnosis, treatment or prevention of disease) which is subject to special requirements in order to prevent infection). Fractions comprising only of non-clinical human and animal offensive/hygiene waste (not arising from healthcare and/or related research i.e. not including waste from natal care, diagnosis, treatment or prevention of disease) which is not subject to special requirements in order to prevent infection) <sup>1</sup>

<sup>1</sup> These entries are limited to those wastes that are not described, packaged, labelled or transported as infectious or clinical wastes.

## Schedule 3 – Emissions and monitoring

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point labelled X on site plan in Schedule 7]	Waste incineration abatement plant	Particulate matter	30 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255 and EN 13284
			5 mg/Nm <sup>3</sup>	daily average	Continuous	
		Hydrogen chloride	60 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255
			8 mg/Nm <sup>3</sup>	daily average	Continuous	
		Hydrogen fluoride	1 mg/Nm <sup>3</sup>	Average of three consecutive measurements of at least 30 minutes each	Bi-annually unless otherwise agreed in writing with Natural Resources Wales	CEN TS 17340
		Hydrogen fluoride	4 mg/Nm <sup>3</sup>	½-hr average	Continuous unless otherwise agreed in writing with Natural Resources Wales <sup>3</sup>	EN 14181 and EN 17255
			1 mg/Nm <sup>3</sup>	daily average	Continuous unless otherwise agreed in writing with Natural Resources Wales <sup>3</sup>	
		Sulphur dioxide	200 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255
40 mg/Nm <sup>3</sup>	daily average		Continuous			
Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	400 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255		
	180 mg/Nm <sup>3</sup>	daily average	Continuous			
Carbon monoxide	150 mg/Nm <sup>3</sup>	95% of all 10-minute averages in any 24-hour period	Continuous	EN 14181 and EN 17255		
	50 mg/Nm <sup>3</sup>	daily average	Continuous			

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
		Total Organic Carbon (TOC)	20 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255
			10 mg/Nm <sup>3</sup>	daily average	Continuous	
		Ammonia (NH <sub>3</sub> )	15mg/m <sup>3</sup>	Daily average	Continuous	EN 14181 EN 17255
		Cadmium & thallium and their compounds (total)	0.02 mg/Nm <sup>3</sup>	Average of three consecutive measurements of at least 30 minutes each	Bi-annually	EN 14385
		Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.3 mg/Nm <sup>3</sup>	Average of three consecutive measurements of at least 30 minutes each	Bi-annually	EN 14385
		Mercury and its compounds	0.02 mg/Nm <sup>3</sup>	Average of three consecutive measurements of at least 30 minutes each	Bi-annually unless otherwise agreed in writing with Natural Resources Wales	EN 13211
			0.02 mg/Nm <sup>3</sup>	Daily average	Continuous unless otherwise agreed in writing with Natural Resources Wales <sup>1</sup>	EN 14181 and EN 17255 and EN 14884
		Dioxins / furans (I-TEQ)	0.06 ng/Nm <sup>3</sup>	Periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	Relevant parts of EN 1948
			0.08 ng/Nm <sup>3</sup>	Value over sampling period of 2 to 4 weeks for long term sampling	Monthly unless otherwise agreed in writing by Natural Resources Wales. <sup>2</sup>	CEN TS 1948-5
		Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)	No limit set	Periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	Relevant parts of EN 1948
		Dioxins / furans (WHO-TEQ Humans / Mammals, Fish, Birds)	No limit set	Periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	Relevant parts of EN 1948

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
		Polybrominated dibenzo-dioxins and furans	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	Method based on procedural requirements of EN 1948
		Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Bi-annually	BS ISO 11338 Parts 1 and 2.
		Exhaust gas temperature	No limit set	½-hr average and daily average	Continuous	Traceable to national standards
		Exhaust gas pressure	No limit set	½-hr average and daily average	Continuous	Traceable to national standards
		Exhaust gas flow	No limit set	½-hr average and daily average	Continuous	EN 16911-2
		Exhaust gas oxygen content	No limit set	½-hr average and daily average	Continuous	EN 14181 and EN 17255
		Exhaust gas water vapour content	No limit set	½-hr average and daily average	Continuous	EN 14181 and EN 17255
A2 [Point labelled X on site plan in Schedule 7]	Waste incinerator emergency release valve	No parameters set	No limit set	none	none	none

Note 1: Continuous monitoring does not apply for plants incinerating wastes with a proven low and stable mercury content

Note 2: Long term sampling does not apply if the emission levels are proven to be sufficiently stable

Note 3: The continuous measurement of HF may be replaced by periodic measurements with a minimum frequency of once every six months if the HCl emission levels are proven to be sufficiently stable.

**Table S3.1(a) Point source emissions to air during abnormal operation of incineration plant– emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point labelled X on site plan in Schedule 7]	Waste incineration abatement plant	Particulate matter	150 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255 and EN13284 during abatement plant failure  Or Alternative surrogate as agreed in writing with Natural Resources Wales during failure of the continuous emission monitor
		Carbon monoxide	100 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255 during abatement plant failure  Or Alternative surrogate as agreed in writing with Natural Resources Wales during failure of the continuous emission monitor
		Total Organic Carbon (TOC)	20 mg/Nm <sup>3</sup>	½-hr average	Continuous	EN 14181 and EN 17255  Or Alternative surrogate as agreed in writing with Natural Resources Wales during failure of the continuous emission monitor

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

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 [Point A10 on site drainage plan] emission to River Clywedog via Red Whither Brook	Uncontaminated rainwater	No parameters set	No limit set	none	none	none

**Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
S1 [section B2.2.25 of the main application] emission to Welsh Water Bretton STW	Boiler blowdown, effluent from ash quench pit and discharge from bin wash.	No parameters set	No limit set	none	none	none

**Table S3.4 Process monitoring requirements**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Location close to the secondary combustion chamber inner wall	Temperature (°C)	Continuous	Traceable to national standards	As agreed in writing with Natural Resources Wales.

**Table S3.5 Residue quality**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method*</b>	<b>Other specification</b>
Bottom Ash	TOC	3%	Quarterly	BS EN 14899 and either BS EN 13137 or BS EN 15936	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'.
Bottom Ash	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No limit set	Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
Bottom Ash	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No limit set	Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
APC Residues	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No limit set	Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
APC Residues	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No limit set	Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	

\*Or other equivalent standard as agreed in writing with Natural Resources Wales

## Schedule 4 - Reporting

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

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air Parameters as required by condition 3.6.1.	A1	Quarterly	1 January, 1 April, 1 July & 1 October
TOC Parameter as required by condition 3.6.1	Bottom Ash	Quarterly	1 January, 1 April, 1 July & 1 October
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.6.1	Bottom Ash	Quarterly	1 January, 1 April, 1 July & 1 October
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.6.1	Bottom Ash	Before use of a new disposal or recycling route	-
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.6.1	APC residues	Quarterly	1 January, 1 April, 1 July & 1 October
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.6.1	APC residues	Before use of a new disposal or recycling route	-
Functioning and monitoring of the incineration plant as required by condition 4.2.2	-	Annually	1 January

<b>Table S4.2: Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Total waste incinerated	tonnes
Total clinical waste incinerated	tonnes
Electrical energy used on installation	KWh / MWh

**Table S4.2: Annual production/treatment**

Parameter	Units
Waste heat utilised by the installation	KWh / MWh

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
Operation of emergency relief valve	Quarterly	Date,time and duration
Annual report as required by condition 4.2.2	Annually	-
Electrical energy imported and used at the installation	Annually	KWh/tonne of waste incinerated
Gas consumption	Annually	Kg/tonne of waste incinerated
Bottom Ash residue	Annually	Route, tonnes and tonnes/tonne of waste incinerated
APC residue	Annually	Route, tonnes and tonnes/tonne of waste incinerated
Activated carbon consumption	Annually	Kg / tonne of waste incinerated
Lime consumption	Annually	Kg / tonne of waste incinerated
Water Consumption	Annually	m <sup>3</sup> / tonne of waste incinerated
Periods of abnormal operation.	Annually	No. of occasions and cumulative hours for calendar year for each line
Urea consumption	Annually	Kg/tonne of waste incinerated

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Annual report required by condition 4.2.2	No specific format specified	03/12/2023
Air	For CEMS monitoring data - In the format indicated in forms air 1-16 as a direct output from Data Acquisition and Handling system. For other monitoring results – Form air 17 Or other forms as agreed in writing by Natural Resources Wales	27/01/2025
Residue Quality	Form residue 1 and 2 or other form as agreed in writing by Natural Resources Wales	03/12/2023
Water usage	Form water usage 1 or other form as agreed in writing by Natural Resources Wales	03/12/2023
Energy usage	Form energy 1 or other form as agreed in writing by Natural Resources Wales	03/12/2023
Other performance indicators	Form performance 1 or other form as agreed in writing by Natural Resources Wales	27/01/2025

**Table S4.4 Reporting forms**

<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Waste Subject to Conditions 4.2.5	Waste tonnage return form from Natural Resources Wales or other form as agreed in writing by Natural Resources Wales	N/A

# 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	

<b>(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment</b>	
<b>To be notified within 24 hours of detection</b>	
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>(b) Notification requirements for the breach of a permit condition</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
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	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>


<b>(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:</b>	
<b>To be notified within 24 hours of detection</b>	
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.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator

## Schedule 6 - Interpretation

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

*“abnormal operation”* means any technically unavoidable stoppages, disturbances, or failures of the plant or the measurement devices other than continuous emission monitors for release 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. Abnormal operation starts as defined in condition 2.3.13 and ends as defined in condition 2.3.14. Abnormal operation is limited to 4 hours for a single occurrence and a total of 60 hours per year per line.

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

*“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 Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

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

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

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

*“CEM”* means Continuous emission monitor.

*“CEN”* means *Comité Européen de Normalisation*.

*“Commissioning”* will commence at the point at which waste is received at the site and will be considered as complete at the point at which the plant is formally handed over from the Technology Contractor to the operator.

*“DAHS”* means data handling and acquisition system and includes software and hardware.

*“daily average emissions limit value”* means ‘the average of at least 43 valid half hourly averages or for CO the average of at least 43 valid half hourly averages or 129 valid 10 minute averages’.

*“dioxin and [furan(s)]”* means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

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

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

*“EP Regulations”* means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

*“emissions of substances not controlled by emission limits”* means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

*“Gas oil”* means low sulphur content hydrocarbon fuel oil, not arising as waste from some other process, used for furnace support and during start up procedures.

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

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

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

“*hazardous waste*” has the meaning given in the Hazardous Waste (Wales) Regulations 2005 (as amended)

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

“*Industrial Emissions Directive*” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“*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.

“*I-TEF*” means international toxic equivalent factors.

“*I-TEQ*” means international toxic equivalent concentration.

‘*List of Wastes*’ means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

“low and stable mercury content” can be demonstrated using the latest version of the UK WI BREF Mercury monitoring protocol (V0.28 or as updated) or an appropriate alternative method as agreed in writing with Natural Resources Wales.

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

“*normal operation*” consists of any operation of the plant other than that as defined as “OTNOC” unless otherwise agreed in writing with Natural Resources Wales.

“*OTNOC*” means other than normal operating conditions. OTNOC consists of start up, shut down and abnormal operation only, unless additional definitions are agreed in writing with Natural Resources Wales.

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

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

“*Pests*” means Birds, Vermin and Insects.

“*PM10, PM2.5, PM1.0*” mean respectively the mass of particulate matter contained in particles of less than 10, 2.5 and 1.0 micrometres aerodynamic diameter.

“*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 as described in the application or agreed in writing with Natural Resources Wales.

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

“sufficiently stable” in respect of dioxins/furans emissions can be demonstrated using the latest version of the UK WI BREF PCDD/F monitoring protocol (V0.28 or as updated) or an appropriate alternative method as agreed in writing with Natural Resources Wales.

“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 established by Commission Decision 2000/532/EC as amended from time to time (the ‘List of Wastes Decision’) 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).

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste.

“year” means calendar year ending 31 December.

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

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

- (a) in relation to emissions from combustion processes (excluding incineration and co-incineration), 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,
- (d) where hazardous wastes are burned in plant covered by Schedule 13 of Environmental Permitting Regulations and the emissions of pollutants are reduced by gas treatment, standardisation of the gas with respect to oxygen content shall be carried out only if the oxygen concentration measured over the same period exceeds the relevant oxygen content defined in conditions (a) – (c) above. In other cases, the measured emissions shall be standardised only for moisture, pressure and temperature.

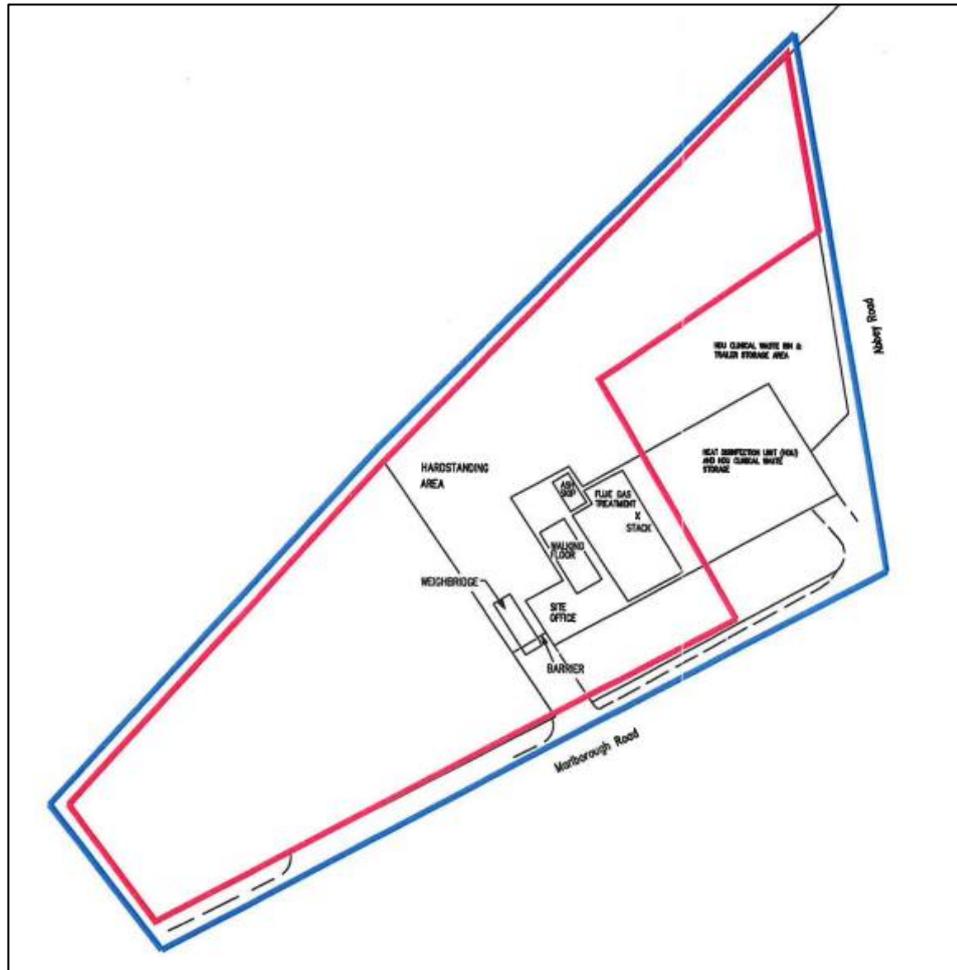
For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1.

TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
		Humans / Mammals	Fish	Birds

TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
<b>Dioxins</b>				
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	-	-
<b>Furans</b>				
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
<b>Non-ortho PCBs</b>			
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
<b>Mono-ortho PCBs</b>			
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



**KEY:**  
— DENOTES SITE BOUNDARY  
— DENOTES INSTALLATION BOUNDARY

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**END OF PERMIT**