

Notice of variation and consolidation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Materials Recovery and Energy
Centre

Neath Port Talbot (Recycling) Limited
Materials Recovery and Energy
Centre
Baldwin's Crescent
Crymlyn Burrows
Swansea
SA1 8PZ

Variation notice number
EPR/BJ5775IF/V016

Permit number
EPR/BJ5775IF

Materials Recovery and Energy Centre

Permit number EPR/BJ5775IF

Introductory note

This introductory note does not form a part of the permit

The following notice, which is issued pursuant to regulations 18 and 20 and Part 1 of Schedule 5 of the Environmental Permitting (England and Wales) Regulations 2010, S.I.2010 No. 675 (the Regulations), gives notice of the variation of an environmental permit to operate a regulated facility and the replacement of that permit with a consolidated environmental permit.

This variation notice authorises various changes to some of the existing operations carried out at the facility, as applied for by the operator.

The most significant changes are the addition of bio-drying (for the manufacture of solid recovered fuel, or SRF) and mechanical biological treatment (MBT) plant. As there will be additional incoming waste streams for these waste recovery activities, there will be a corresponding increase in the range of wastes to be accepted on-site.

The on-site composting tunnels will now primarily be used for bio-drying and so there is provision in the permit for storage of separately collected food waste prior to transfer for off-site composting.

The other changes are revisions to the waste storage locations and quantities associated with both the above waste recovery operations and also for ash arising from on-site incineration. The waste incineration activities themselves remain unchanged.

The composition, limits and monitoring requirements for the discharge to sewer have also been varied.

A mechanism has also been included in Table S3.1 to allow a monitoring frequency of less than quarterly to be agreed in writing for hydrogen fluoride and heavy metals.

The output from the bio-drying activity is a solid recovered fuel, manufactured to a specification for off-site energy use, (e.g. cement kilns). The MBT activities will result in a treated feedstock suitable for bio-drying and subsequent SRF manufacture in addition to sorted and separated recyclable fractions for off-site recycling.

This variation also includes the addition of two improvement conditions by the Environment Agency as a regulator-initiated variation.

The first of these improvement conditions (ref: 9.55, Table S1.3) requires comparative air dispersion modelling of measured emissions against emission limit values.

The second of these improvement conditions (ref: 9.56, Table S1.3) requires an assessment relating to predicted dioxin uptake into the human body and has been imposed as part of a response to recent dioxin monitoring results.

The existing conditions have been updated into a modern condition format and have been consolidated with all the varied conditions described above to produce a single set of conditions.

Schedule 1 of this notice lists any amended conditions, Schedule 2 contains a copy of the varied and consolidated environmental permit, including any site plan.

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

Detail	Date	Comment / Response Date
Application BJ5775 received	26/01/01	-
1st Schedule 4 Notice issued (1-19)	09/04/01	-
Response to 1st Schedule 4 Notice received	18/06/01 28/09/01	-
2nd Schedule 4 Notice issued (20-25)	15/06/01	-
Response to 2nd Schedule 4 Notice received	09/08/01 28/09/01	-
Request (1) from Environment Agency to extend determination to 17 November 2001	23/08/01	Request accepted by Operator 07/09/01
3rd Schedule 4 Notice issued (26-28)	06/09/01	-
Response to 3rd Schedule 4 Notice received	05/10/01	-
Request (2) from Environment Agency to extend determination to 7 December 2001	15/10/01	Request accepted by Operator 19/10/01
Revised Site Report received from Operator	02/11/01	-
Request (3) from Environment Agency to extend determination to 11 January 2002	23/11/01	Request accepted by Operator 30/11/01
Request (4) from Environment Agency to extend determination to 15 February 2002	21/12/01	Request accepted by Operator 02/01/02
Receipt of supplementary information from Operator	31/01/02	Revised Air Quality and Health Impact Assessment Final Report
Request (5) from Environment Agency to extend determination to 28 March 2002	01/02/02	Request accepted by Operator 07/02/02
Receipt of supplementary information from Operator	12/02/02	Re: Annual figures for Hydrogen Chloride
Receipt of supplementary information from Operator	13/02/02	Re: PAH Figures
Receipt of supplementary information from Operator	06/03/02	Re: Baseline diffusion tube monitoring
Request (6) from Environment Agency to extend determination to 19 April 2002	22/03/02	Request accepted by Operator 27/03/02
Receipt of supplementary information from Operator	27/03/02	Re: Deduster, underground tanks and compost abatement

Detail	Date	Comment / Response Date
Receipt of supplementary information from Operator	12/04/02	Re: Finalised energy balance
Receipt of supplementary information from Operator	16/04/02, 18/04/02, 29/04/02, 01/05/02 & 07/05/02	Re: Operator Name
Request from Operator to extend determination to 3 May 2002	18/04/02	Request accepted by Environment Agency 19/04/02
Receipt of supplementary information from Operator	01/05/02	Re: Sewer discharge details
Notification of Extension by Environment Agency	01/05/02	Determination deadline 13/05/02
Permit Determined	09/05/02	-
Variation BU8576 Environment Agency initiated	30/06/03 Effective	Addition of four Improvement Conditions to investigate/rectify odour issues, surface water contamination. Registered address updated and additional waste reporting form introduced.
Variation BV5297 Environment Agency initiated	14/08/03 Effective	Introduction of firm dates for completion of some Improvement Conditions listed in Table 9.1.1. of PPC permit BJ5775.
Variation BV7320 Environment Agency initiated	05/09/03 Effective	Addition of an improvement condition (9.25) to assess containment of firewater on site in the event of a major fire.
Variation BX8220 Environment Agency initiated	19/05/04 Effective	Addition of Improvement conditions (9.26 and 9.27) to supply details of re-construction of composting unit and carry out a fire risk assessment on that unit.
Variation ZP3333BJ Environment Agency initiated	10/08/04 Effective	Addition of 10 improvement conditions (9.28 to 9.36) to re-assess operation as a result of re-commissioning after major fire. Change of response date for improvement condition 9.22.
Variation BP3539BN Environment Agency initiated	15/11/04 Effective	Addition of 2 improvement condition (9.37, 9.38) - air modelling of emissions from composting unit stack (A4) and odour survey. Deletion of IC 9.22 and incorporation in to 9.38
Variation UP3838SX Environment Agency and Operator initiated	30/01/05 Effective	Modification of 3 improvement conditions (IC), IC9.37 to assess the environmental impact of emissions from stacks A3 and A4 as well as A1; IC 9.18 to assess feasibility and the modification of response date for IC9.28.
Variation TP3437SR Environment Agency initiated	02/09/05 Effective	Requirement to spray all incoming and out-going waste, modification of 1 improvement condition (9.38) and addition of 2 improvement conditions (9.39, 9.40) to improve odour control on site.
Application for variation UP3432SH	Received 30/03/05	

Detail	Date	Comment / Response Date
Variation UP3432SH	Determined 05/12/05	WID variation
Application for variation JP3632LD	Received 18/05/06	
Variation JP3632LD issued	07/08/06	
Variation requested by Operator dated 11/01/07		Request to extend deadline of improvement condition 9.42
Variation notice JP3736MG issued	11/01/07	
Variation Environment Agency issued	19/06/08	Amendment and removal of odour conditions. Addition of improvement item to produce an odour management plan.
Variation notice EPR/BJ5775IF/V015 issued	11/08/10	Environment Agency initiated variation to add improvement conditions regarding odour management.
Application for variation EPR/BJ5775IF/V016	Duly made 22/01/10	
Variation notice EPR/BJ5775IF/V016 issued	15/11/10	Certain permit conditions varied further to variation application. Environment Agency initiated variation to add improvement conditions regarding comparative air dispersion modelling and dioxin uptake assessment. The permit is issued as a consolidated variation with new template conditions as a regulator initiated variation.

End of Introductory note

Notice of variation and consolidation

Environmental Permitting
(England and Wales) Regulations 2010

Permit number
EPR/BJ5775IF

Variation notice number
EPR/BJ5775IF/V016

Operator
Neath Port Talbot (Recycling) Limited

whose registered office is
**Materials Recovery and Energy Centre
Baldwin's Crescent
Crymlyn Burrows
Swansea
SA1 8PZ**

Company registration number **3595980**

Regulated facility
**Materials Recovery and Energy Centre
Baldwin's Crescent
Crymlyn Burrows
Swansea
SA1 8PZ**

The Environment Agency in exercise of its powers under Regulations 18 and 20 and Part 1 of Schedule 5 of the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No 675) varies the environmental permit as set out below and replaces it with a consolidated environmental permit

and that permit is varied to the extent set out in Schedule 1 of this notice and the permit is replaced with a consolidated permit in the form set out in Schedule 2.

The notice shall take effect from 15/11/10

Name: Avril Varley-Brown	Date
	15/11/10

Authorised on behalf of the Environment Agency

Schedule 1 - conditions to be varied

All previous conditions are deleted and replaced with the consolidated permit conditions in Schedule 2 below

Schedule 2 – varied and consolidated permit

Please see attached.

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.

1.1.4 The operator shall comply with the requirements of an approved competence scheme.

1.2 Energy efficiency

1.2.1 For the following activities referenced in schedule 1, table S1.1 as: AR1 and AR2, the operator shall:

- (a) take appropriate measures to ensure that 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.

1.3 Efficient use of raw materials

1.3.1 For the following activities referenced in schedule 1, table S1.1 as: AR1 and AR2, 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 For the following activities referenced in schedule 1, table S1.1 as: AR1 and AR2, the operator shall:

- (a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;
- (b) review and record at least every four years whether changes to those measures should be made; and
- (c) take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- (b) If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 Waste shall only be accepted if:
 - (a) it is of a type and quantity listed in schedule 2 tables S2.2, S2.3, S2.4 and S2.5; 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 hazard classification associated with the waste; 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 For the following activities referenced in schedule 1, table S1.1 as: AR1, waste shall not be charged, or shall cease to be charged, if:
- (a) the combustion chamber temperature is below, or falls below 850°C; or
 - (b) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded; or
 - (c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than under WID abnormal operating conditions ; or
 - (d) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than under WID abnormal operating conditions.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1 as: AR1, 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 For the following activities referenced in schedule 1, table S1.1 as: AR1, the operator shall record the beginning and end of each period of "WID abnormal operation".
- 2.3.9 For the following activities referenced in schedule 1, table S1.1 as: AR1, during a period of "WID abnormal operation", the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.
- 2.3.10 For the following activities referenced in schedule 1, table S1.1 as: AR1, where, during "WID abnormal operation", any of the following situations arise, the operator shall, as soon as is practicable, cease the burning of waste until normal operation can be restored:
- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to disturbances or failures of the abatement systems, or continuous emission monitor(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
 - (b) the cumulative duration of "WID abnormal operation" periods over 1 calendar year exceeds 60 hours on an incineration line;
 - (c) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 (a) due to disturbances or failures of the abatement systems;

- (d) the alternative techniques to demonstrate compliance with the “WID abnormal operation” emission limit value(s) in schedule 3 table S3.1 (a), as detailed in the application or as agreed in writing with the Environment Agency, are unavailable.
- 2.3.11 For the following activities referenced in schedule 1, table S1.1 as: AR1, the operator shall interpret the end of the period of “WID abnormal operation” as the earliest of the following:
- (a) when the failed equipment is repaired and brought back into normal operation;
 - (b) when the operator initiates a shut down of the waste combustion activity, as described in the application or as agreed in writing with the Environment Agency;
 - (c) when a period of four hours has elapsed from the start of the “WID abnormal operation”;
 - (d) when, in any calendar year, an aggregated period of 60 hours “WID abnormal operation” has been reached for a given incineration line.
- 2.3.12 For the following activities referenced in schedule 1, table S1.1 as: AR1, 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.

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 except in “WID abnormal operation”, when there shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1(a), S3.2 and S3.3.
- 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 Total annual emissions from the emission point(s) set out in schedule 3 table S3.1 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.
- 3.1.5 For the following activities referenced in schedule 1, table S1.1 as: AR1, wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3 table S3.6. Additional samples shall be taken and tested and appropriate action taken, whenever:
- (a) disposal or recovery routes change; or
 - (b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

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

3.4 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.

3.5 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, S3.1(a), S3.2 and S3.3; and
 - (b) other monitoring specified in tables S3.5 and S3.6.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 For the following activities referenced in schedule 1, table S1.1 as: AR1, 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.
- 3.5.5 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

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 For the following activities referenced in schedule 1, table S1.1: AR1, AR2 and AR9, within one 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.

- 4.2.3 For the following activities referenced in schedule 1, table S1.1: AR1, 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.
- 4.2.4 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.
 - (d) the functioning and monitoring of the incineration plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Article 12(2) of the Waste Incineration Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the WID.
- 4.2.5 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.

4.3 Notifications

- 4.3.1 The Environment Agency shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
 - (b) the breach of a limit specified in the permit; or
 - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

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 reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 5.1 A (1)(c): Incineration of non-hazardous waste in an incineration plant with a capacity of 1 tonne or more/hour.	Municipal waste incineration (includes recovery of the combustion heat generated and electricity generation)	The entire incineration plant including all incineration lines, waste reception, storage, on site pre-treatment facilities, waste fuel and air supply systems, boilers, facilities for the treatment or storage of residues and waste water, stack, devices and systems for controlling incineration operations, recording and monitoring incineration conditions. Subject to the storage limitations in activity reference AR10 below. Waste types and quantities as specified in schedule 2, table S2.2.
AR2	Section 5.3 A (1) (c) (ii) Formation of refuse derived fuel pellets (A specified waste management activity)	Manufacture of fuel pellets (without using heat) for the purposes of disposal	Fuel pellet manufacture including waste sorting, screening, shredding, separation and densification Maximum throughput no greater than 480 tonnes per day for shredding Waste types and quantities as specified in schedule 2, table S2.2.
Directly Associated Activity			
AR3	Receipt and storage of municipal, commercial and industrial wastes, excluding those wastes which are hazardous	Receipt of waste from external contractors and storage on site prior to fuel pellet manufacture for the purposes of disposal	Receipt of waste and storage on site prior to fuel pellet manufacture for the purposes of disposal Subject to the storage limitations in activity reference AR10 below. Waste types as specified in schedule 2, table S2.2.
AR4	Production of steam for generation of electricity and off site use	Steam generation, turbine generator operation	To output to grid of electricity
AR5	Abatement of flue gas	Lime and activated carbon injection. Flue gas recirculation. Ammonia injection. Bag filter abatement	Compliance with emission limits at release points specified
AR6	Management of grate (bottom) and fly ash	Residues handling, treatment and storage	Including loading and storage on off-site transfer vehicles as far as site boundary
AR7	Water discharges to foul sewer	Discharge of waste waters from process to foul sewer	To specified point of discharge to foul sewer S1.
AR8	Uncontaminated water discharges to surface water drains	Discharge of waters to surface drain	To specified point of discharge to drain W1.

Table S1.1 activities

Activity reference	Description of activities for waste operations and WFD Annex IIA and IIB operations	Limits of activities and waste types
AR9	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Subject to the storage limitations in activity reference AR10 below. Waste types as specified in schedule 2, tables S2.3, S2.4 and S2.5.
	R3: Recycling/reclamation of organic substances which are not used as solvents	Treatment operations shall be limited to: 1. Biological treatment consisting of aerobic composting or bio-drying or the purpose of recovery with a maximum throughput of 230 tonnes per day and 1620 tonnes per week.. 2. Physical treatment including screening, crushing, baling, shredding and pelletising for the purpose of recovery.
	R4: Recycling/reclamation of metals and metal compounds	
R5: Recycling/reclamation of other inorganic compounds		
AR10	Waste storage prior to any activities specified under activity reference AR1, AR3 or AR9 above	The Operator shall: - store unprocessed waste at the site for no longer than 48 hours. This shall be extended to 60 hours or otherwise by prior agreement, in writing, with the Agency in the period immediately preceding or following a Bank Holiday; - keep a log of all waste that has arrived at the site, detailing the batch number, time and date of receipt, time and date of processing and origin of the waste; - not accept waste in the event of failure of the de-duster in the waste reception area extraction system lasting more than 4 hours. The Operator shall inform the Agency immediately of any failure of the de-duster extraction systems; - clearly mark or label all processed materials storage areas and containers with a description of their contents.
	Municipal waste storage	No more than 1500 tonnes to be stored on flat floor with push walls in Reception Area
	Wastes awaiting SRF manufacture	No more than 100 tonnes to be stored on flat floor with push walls in Area 2.1
	SRF digestate liquor	No more than 175 tonnes to be stored in the underground tank in Area H
	Recovered recyclables	No more than 500 tonnes to be stored on flat floor within process areas or transferred to roll-on/roll-off container in Areas 3.2A, 3.2B, 3.2C, 3.2D, 3.2E, 3.2F & 3.4F

Activity reference	Description of activities for waste operations and WFD Annex IIA and IIB operations	Limits of activities and waste types
AR10	densified Refuse Derived Fuel	No more than 400 tonnes to be stored on flat floor with push walls in Area 1.12
	Unacceptable wastes	No more than 10 tonnes to be stored in a lockable container in Area 1.3. Container to be locked when not in use.
	Process rejects	No more than 200 tonnes (total process rejects) to be stored on flat floor within reception area or transferred to roll-on/roll-off container in Area 1.3
	Drainage from waste reception and processing area	No more than 110 tonnes to be stored in underground tank in Area G
	Incinerator bottom ash (IBA)	No more than 30 tonnes per bay for non-hazardous IBA (total 120 tonnes) and 30 tonnes for hazardous IBA to be stored in concrete bays within process building prior to transfer to roll-on/roll-off container in Area 1.13A, 1.13B, 1.13C, 1.13D & 1.13E
	Air pollution control residues / fly ash (includes dust / lime / carbon)	No more than 30 tonnes to be stored in flexible IBCs on flat floor within process building
	Other wastes	Quantity as detailed in the Application to be stored in drums or sealed containers

Table S1.2 Operating techniques

Description	Parts	Date Received
Variation application EPR/BJ5775IF/V014	Response to 'Section 2 - Operating techniques' of Part C application form as supported by: <ul style="list-style-type: none"> - Appendix 1- Changes to existing facility, (excluding the use of the 20 01 99 waste code); - Appendix 2 - Process Description, Controls & Abatement, (excluding the use of the 20 01 99 waste code); - Appendix 1.2 - Site layout Plan; - Appendix 1.2.1 - Facility Storage and Process Locations; - Appendix 2 – Process Description, Controls & Abatement (including associated appendices); - Appendix 2.1 – Management Techniques; - Appendix 2.1.1 – Odour Management Plan, (subject to review in accordance improvement condition IC1); - Appendix 2.1.3 – SRF Pre-manufacturing Trials; - Appendix B2.8 – Accidents and their consequences; - Appendix B2.8.1 – Crisis management and Business Continuity Plan; - Appendix B2.9 – Noise and Vibration; and - Appendix B4.11 – Assessment of significant effects 	23/11/09
Improvement Programme	All reports and plans submitted as part of Improvement Programme items 9.1 to 9.56 inclusive, to the extent agreed by the Environment Agency..	Various, (9.1 to 9.47 submitted previously, 9.48 to 9.56 to be submitted in accordance with the timetable set out in Table S1.3)

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
9.48	The operator shall replace the biofilter media and provide documentary evidence that the air distribution and humidification systems are operating effectively across the entire biofilter. The operator shall also provide details of the measures to be taken to ensure that the biofilter, air distribution and humidification systems will be monitored to ensure they remain fully operational and work as designed.	01 March 2011
9.49	The operator shall carry out an ammonia monitoring study to determine whether acid scrubbing of the inlet air is required prior to bio-filtration. Details of this study shall be provided to the Environment Agency in the form of a report. If acid scrubbing is deemed necessary the abatement shall be installed by March 2011 unless otherwise agreed in writing with the Environment Agency.	31 December 2010
9.50	The operator shall review the traffic management system utilised at the site to prevent multiple vehicles queuing outside the waste reception building. This review shall be fully documented and submitted to the Environment Agency.	31 October 2010
9.51	The operator shall review the current design of the reception hall entry and exit doors to improve the containment of odour. This review must consider the installation of fast acting roller shutters, air curtains or double door airlock system on both entry and exit doors. The review shall be documented and submitted to the Environment Agency. Full justification for any changes in the door design and proposed implementation dates shall also be included in the report.	31 October 2010
9.52	The operator shall improve the sealing between walls and the roof of the waste reception, processing and composting buildings. A documented assessment of the effectiveness of the sealing works shall also be undertaken following a completion of the works. This assessment shall be submitted to the Environment Agency.	31 October 2010
9.53	The operator shall improve air extraction rates from the reception building and processing units within the processing building to ensure that the extraction rates specified in the original design are achieved. Measures shall also be documented to ensure that extraction rates are maintained. Details of the improvement in extraction rates shall be provided to the Environment Agency in the form of a report.	01 March 2011
9.54	The operator shall review the operation of the extraction system that serves the composting building to ensure maximum extraction rate is applied at all times. The operator shall also review whether extracted air can be diverted in the event of failure of the biofilter. Both reviews shall be fully documented and provided to the Environment Agency in the form of a report.	31 December 2010
9.55	<p>The operator shall undertake predictive air quality modelling of all combustion product emissions based on both the permitted emission limit values and representative actual emission data monitored at the plant, (including efflux velocities).</p> <p>A modelling report shall be submitted to the Environment Agency that follows the requirements of Environment Agency guidance entitled "Air dispersion modelling report Requirements (for detailed air dispersion modelling)". The report shall also contain:</p> <ul style="list-style-type: none"> - details of how the representative emission data was derived; - an interpretation of the model results; and - a copy of the model and data files. 	01 April 2011

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
9.56	<p>In order to assist in the determination of the impact of any future exceedance of dioxin emission limit values the operator shall predict the intake of dioxins and furans emissions into the human body. Predicted intake rates should be compared with the Committee of Toxicity Tolerable Daily Intake.</p> <p>The assessment method should follow either the report "Risk Assessment of Dioxin releases from Municipal Waste Incinerators (HMIP 1996) or United States Environmental Protection Agency Human Health Risk Assessment Protocol (HHRAP)."</p> <p>A report detailing the above findings shall be submitted to the Environment Agency.</p>	01 April 2011

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels			
Raw materials and fuel description	Location of storage on site	Manner of storage	Storage conditions / specification
Lime	Outside building near the condensers	Silo with self cleaning filter on vent	Delineated storage area with controlled drainage
Ammonium hydroxide solution	Inside building near combustion plant	Self-contained portable container to be exchanged when empty	Bunded area. [Note: containers refilled off-site]
Activated carbon	Outside building near the condensers	Silo with self cleaning filter on vent	Delineated storage area with controlled drainage
Diesel (fuel for site vehicles)	Across road from waste to energy plant on East side of site.	Bulk storage tank (maximum of 10,000 litres)	Bunded area, including transfer connections
Kerosene (start-up fuel)	Outside building on North side	2 Bulk tank with level alarm (maximum storage 10,000 litres each)	Bunded area, including transfer connections. Sulphur content of fuel shall be less than 0.1% by weight
Lubricating oils and other maintenance fluids	Inside building	Sealed drums and other sealed containers	Within bunded, covered storage area
Boiler feed water	Inside building near combustion plant	Bulk tank	At high level within building
Water treatment chemicals	Inside building near combustion plant	Sealed drums and other sealed containers	Within bunded, covered storage area

Table S2.2 Permitted waste types and quantities for on-site incineration	
Maximum quantity	Maximum combustion of densified Refuse Derived Fuel is 85,177 tonnes/year Maximum throughput of 260,200 tonnes/year of mixed municipal waste
Waste code	Description
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 10	Combustible waste (densified Refuse Derived Fuel)

Table S2.3 Permitted waste types and quantities for manufacture of densified Refuse Derived Fuel for on-site incineration and Solid Refined Fuel (SRF) for subsequent off-site recovery	
Maximum quantity	Waste quantities in accordance with Table S1.1
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

Table S2.3 Permitted waste types and quantities for manufacture of densified Refuse Derived Fuel for on-site incineration and Solid Refined Fuel (SRF) for subsequent off-site recovery

Maximum quantity	Waste quantities in accordance with Table S1.1
Waste code	Description
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
04	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES
04 02	wastes from the textile industry
04 02 10	organic matter from natural products (for example grease, wax)
15	WASTE PACKAGING; ABSORBENTS, 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
15 01 06	mixed packaging
15 01 09	textile packaging
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	premixed wastes composed only of non-hazardous wastes, (including heat treated healthcare waste that has been rendered safe)
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 05	wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
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 04	plastic and rubber
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	textiles
19 12 10	combustible waste (Refuse Derived Fuel) for SRF manufacture, including high biomass fraction of pre-treated waste from on-site MBT activities
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 03	other municipal wastes
20 03 01	mixed municipal waste

Table S2.4 Permitted waste types and quantities for storage prior to off-site recovery	
Maximum quantity	Waste quantities in accordance with Table S1.1
Waste code	Description
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01	packaging (including separately collected municipal packaging waste)
15 01 07	glass bottles and jars
15 01 04	metal cans
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 08	biodegradable kitchen and canteen waste
20 02	garden and park wastes (including cemetery waste)
20 02 01	biodegradable waste

Table S2.5 Permitted waste types and quantities for magnetic separation and subsequent storage prior to off-site recovery	
Maximum quantity	Waste quantities in accordance with Table S1.1
Waste code	Description
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01	packaging (including separately collected municipal packaging waste)
15 01 06	mixed packaging
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 03	other municipal wastes
20 03 01	mixed municipal waste - consisting of co-mingled recyclable fractions (other than 15 01 06)

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 and A2, 52 metres East of main building	Particulate matter	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	30 mg/m ³	½-hr average	Continuous measurement	BS EN 13284-2 [Note 5] [Note 7]
			10 mg/m ³	daily average	Continuous measurement	BS EN 13284-2 [Note 5] [Note 7]
			20 mg/m ³	periodic over minimum 1-hour period	Bi-annual	BS EN 13284-1
A1 and A2, 52 metres East of main building	Total Organic Carbon (TOC)	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	20 mg/m ³	½-hr average	Continuous measurement	BS EN 12619 [Note 5] [Note 7]
			10 mg/m ³	daily average	Continuous measurement	BS EN 12619 [Note 5] [Note 7]
			20 mg/m ³	periodic over minimum 1-hour period	Bi-annual	BS EN 12619
A1 and A2, 52 metres East of main building	Hydrogen chloride	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	60 mg/m ³	½-hr average	Continuous measurement	MCERTS certified instruments [Note 6] [Note 8]
			10 mg/m ³	daily average	Continuous measurement	MCERTS certified instruments [Note 6] [Note 8]
			30 mg/m ³	periodic over minimum 1-hour period	Bi-annual	BS EN 1911
A1, 52 metres East of main building	Hydrogen fluoride	Incinerator line 1 via a 40m stack	2 mg/m ³	periodic over minimum 1-hour period	Quarterly, unless otherwise agreed in writing by the Environment Agency	USEPA Method 26/26A
A1 and A2, 52 metres East of main building	Carbon monoxide	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	100 mg/m ³	½-hr average	Continuous measurement	ISO 12039 [Note 3] [Note 7]
			50 mg/m ³	daily average	Continuous measurement	ISO 12039 [Note 3] [Note 7]
			100 mg/m ³	periodic over minimum 4-hour period, data to be reported as ½-hr averages	Bi-annual	ISO 12039

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 and A2, 52 metres East of main building	Sulphur dioxide	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	200 mg/m ³	½-hr average	Continuous measurement	BS 6069-4.4 ^[Note 4] ^[Note 7]
			50 mg/m ³	daily average	Continuous measurement	BS 6069-4.4 ^[Note 4] ^[Note 7]
			200 mg/m ³	periodic over minimum 4-hour period, data to be reported as ½-hr averages	Bi-annual	BS 6069-4.1
A1 and A2, 52 metres East of main building	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂) ^[Note 8]	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	400 mg/m ³	½-hr average	Continuous measurement	ISO 10849 ^[Note 4] ^[Note 7]
			200 mg/m ³	daily average	Continuous measurement	ISO 10849 ^[Note 4] ^[Note 7]
			400 mg/m ³	periodic over minimum 4-hour period, data to be reported as ½-hr averages	Bi-annual	ISO 10849 or BS ISO 11564
A1 and A2, 52 metres East of main building	Cadmium & thallium and their compounds (total) ^[Note 1]	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly, unless otherwise agreed in writing by the Environment Agency	BS EN 14385
A1 and A2, 52 metres East of main building	Mercury and its compounds ^[Note 1]	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly, unless otherwise agreed in writing by the Environment Agency	BS EN 13211
A1 and A2, 52 metres East of main building	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total) ^[Note 1]	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	0.5 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly, unless otherwise agreed in writing by the Environment Agency	BS EN 14385
A1 and A2, 52 metres East of main building	Dioxins / furans (I-TEQ)	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	0.1 ng/m ³	periodic over minimum 6 hours, maximum 8 hour period ^[Note 2]	Bi-annual	BS EN 1948

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 and A2, 52 metres East of main building	Ammonia	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	20 mg/m ³	½ hour average	Continuous measurement	MCERTS certified instruments [Note 6] [Note 8]
			10 mg/m ³	daily average	Continuous measurement	MCERTS certified instruments [Note 6] [Note 8]
			10 mg/m ³	over a minimum 4 hour period, data to be reported as half hour averages	Bi-annual	MCERTS certified instruments [Note 6] [Note 8]
A1 and A2, 52 metres East of main building	Nitrous oxide (N ₂ O)	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	35 mg/m ³	periodic over minimum 1-hour period	Bi-annual	VDI 2469-1 or VDI 2469-2
A3, above roof on North side of main building	Particulate matter	18 metre high Deduster System Vents (Waste Reception and Process Areas)	10 mg/m ³	periodic over minimum 1-hour period	Bi-annual	BS EN 13284-1
A4, above roof on North side of main building	Particulate matter	Compost System Air Vent (18 m)	No limit	periodic over minimum 1-hour period	Bi-annual	BS EN 13284-1
	Ammonia		15 mg/m ³	periodic over a minimum 4 hour period	Bi-annual	MCERTS certified instruments [Note 6] [Note 8]
A1 and A2, 52 metres East of main building	Dioxin-like PCBs (WHO-TEQ ² Humans / Mammals)	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	No limit	periodic, average value over sample period of between 6 and 8 hours	Bi-annual	To be determined utilising sampling and analytical techniques developed for dioxins/furans (BS EN 1948)
	Dioxin-like PCBs (WHO-TEQ ² Fish)		No limit		Bi-annual	
	Dioxin-like PCBs (WHO-TEQ ² Birds)		No limit		Bi-annual	

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 and A2, 52 metres East of main building	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	No limit	periodic, average value over sample period of between 6 and 8 hours	Bi-annual	Procedure shall use BS ISO 11338-1 and BS-ISO 11338-2.
A1 and A2, 52 metres East of main building	Dioxins / furans (WHO-TEQ ² humans / Mammals)	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	No limit	periodic, average value over sample period of between 6 and 8 hours	Bi-annual	To be determined utilising sampling and analytical techniques developed for dioxins/furans (BS EN 1948)
	Dioxins / furans (WHO-TEQ ² Fish)		No limit	periodic, average value over sample period of between 6 and 8 hours	Bi-annual	
	Dioxins / furans (WHO-TEQ ² Birds)		No limit	periodic, average value over sample period of between 6 and 8 hours	Bi-annual	

Note 1: Metals include gaseous, vapour and solid phases as well as their compounds (expressed as the metal or the sum of the metals as specified). Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V mean antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel and vanadium respectively.

Note 2: The I-TEQ or WHO-TEQ sum of the equivalence factors to be reported as a range based on: All congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum.

Note 3: The Continuous Emission Monitors used shall be such that the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed 10%. 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 this value of the confidence interval (10%). Where it is necessary to calibrate or maintain the monitor and this means that data is not available for a complete half-hour period, the half-hourly average shall nonetheless 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 (or such other number justified in the Application) per day). 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 will be considered valid if no more than five half-hourly average values in any day have been determined not to be valid. No more than ten daily average values per year shall be determined not to be valid.

Note 4: As Note 3, except that the value of the confidence interval is 20% in place of 10%.

Note 5: As Note 3, except that the value of the confidence interval is 30% in place of 10%.

Note 6: As Note 3, except that the value of the confidence interval is 40% in place of 10%.

Note 7: MCERTS certification to the appropriate ranges and determinands is a demonstration of compliance to the applicable standards.

Note 8: The certification range for MCERTS equipment should be 1.5 times the daily emission limit value.

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

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 and A2, 52 metres East of main building	Particulate matter	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	150 mg/m ³	½-hr average	Continuous measurement	[BS EN 13824 ^[Note 1] ^[Note 3] during abatement plant failure or alternative surrogate as specified in the Application for Variation during failure of the continuous emission monitor
A1 and A2, 52 metres East of main building	Total Organic Carbon (TOC)	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	20 mg/m ³	½-hr average	Continuous measurement	BS EN 12619 ^[Note 1] ^[Note 3] during abatement plant failure or alternative surrogate as specified in the Application for Variation UP3432SH during failure of the continuous emission monitor
A1 and A2, 52 metres East of main building	Carbon monoxide	Incinerator line 1 and incinerator line 2 respectively, (via a 40m stack)	100 mg/m ³	½-hr average	Continuous measurement	ISO 12039 ^[Note 2] ^[Note 3] during abatement plant failure or alternative surrogate as specified in the Application for Variation UP3432SH during failure of the continuous emission monitor

Note 1: The Continuous Emission Monitors used shall be such that the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed 30%. Valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods if no waste is being incinerated) from the measured values after having subtracted this value of the confidence interval (30%). Where it is necessary to calibrate or maintain the monitor and this means that data is not available for a complete half-hour period, the half-hourly average shall nonetheless 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).

Note 2: As Note 1, except that the value of the confidence interval is 10% in place of 30%.

Note 3: MCERTS certification to the appropriate ranges and determinands is a demonstration of compliance to the applicable standards.

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

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1	Suspended solids	Clean surface waters from roadways, hardstanding and roofs via interceptor	No limit set	Spot sample	Weekly	-
	pH		No limit set	Instantaneous		-
	Oil		No visible oil	Instantaneous		-

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

Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1	Total suspended solids (as defined by Directive 91/271/EEC)	Effluent derived from boiler blowdown, ion exchange regeneration, dust removal and biofilter leachate via interceptor.	1000 mg/l	Spot sample	Monthly	-
	Total petroleum hydrocarbons		100 mg/l	Spot sample	Monthly	
	Total sulphate (expressed as SO ₄)		1000 mg/l	Spot sample	Monthly	
	Total sulphite (expressed as SO ₃)		50 mg/l	Spot sample	Monthly	
	Total sulphide or compounds producing H ₂ S on acidification		3 mg/l	Spot sample	Monthly	
	COD		1000 mg/l	Spot sample	Monthly	
	pH minimum		6.0	Instantaneous	Continuous	
	pH maximum		10.0	Instantaneous	Continuous	
	Temperature		43 °C	Instantaneous	Continuous	
	Maximum flow rate l/s		1.5 l/s	Instantaneous	Continuous	
	Maximum daily flow		20 m ³	24 hours	Continuous	

Note 1: The emission limits for sewer in the WID are not applied in this permit because process effluents have not contacted ashes

Table S3.4 Annual limits

Substance	Release point	Annual limit (tonnes - except where stated)
Oxides of nitrogen	A1	62
	A1 and A2	100
Sulphur dioxide	A1	17
	A1 and A2	27
Hydrogen chloride	A1	3.5
	A1 and A2	5.5
Ammonia	A1	3.5
	A1 and A2	5.5
Dioxins and furans (I-TEQ)	A1	34 mg
	A1 and A2	55 mg
Particulate matter	A1, A2 and A3	5.5
Ammonia	A4	6

Table S3.5 Process monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
A1 and A2, 52 metres East of main building	Temperature	Continuous	As described in the Application	-
	Pressure			
	Oxygen content			
	Water vapour content			
A1 and A2, 52 metres East of main building	Temperature	Continuous	As described in the Application	-
Bottom Ash Incinerators 1 and 2 (combined) on Line 1 and incinerators 1 and 2 (combined) on Line 2	Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Antimony, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	Quarterly	Sampling and analysis as per Environment Agency ash sampling protocol.	
Bottom Ash Incinerators 1 and 2 (combined) on Line 1 and incinerators 1 and 2 (combined) on Line 2	Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Antimony, Arsenic, Cobalt, Vanadium, Zinc)	Before use of a new disposal or recycling route	Sampling and analysis as per Environment Agency ash sampling protocol.	
Leachate / bio-drying tunnel sump / tank	Leachate level, pH and dissolved oxygen	Daily	-	-

Table S3.6 Residue quality

Emission point reference or source or description of point of measurement	Parameter	Limit	Monitoring frequency	Monitoring standard or method
Bottom Ash	TOC	3%	Monthly	Environment Agency ash sampling protocol.
Bottom Ash	LOI	5%	Monthly	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 sewer Parameters as required by condition 3.5.1	S1	Quarterly	01/01/2006
Functioning and monitoring of the incineration plant as required by condition 4.2.3	-	Every 12 months	01/01/2006
Dioxin-like PCBs (WHO-TEQ Birds)	A1 & A2	Every 6 months	01/01/2006
Poly-cyclic aromatic hydrocarbons (PAHs)	A1 & A2	Every 6 months	01/01/2006
Ammonia	A1 & A2	Every 6 months	01/01/2006
Nitrous Oxide	A1 & A2	Every 6 months	01/01/2006
Temperature	A1 & A2	Every 6 months	01/01/2006
Pressure	A1 & A2	Every 6 months	01/01/2006
Oxygen content	A1 & A2	Every 6 months	01/01/2006
Water vapour content	A1 & A2	Every 6 months	01/01/2006
Furnace Chamber Temperature	Each incinerator on Line 1 and Line 2	Every 6 months	01/01/2006
Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Antimony, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	Bottom Ash Samples from line 1 (incinerators 1 and 2 combined) and from Line 2 (incinerators 1 and 2 combined)	Every 6 months	01/01/2006
Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Antimony, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	Bottom Ash Samples from line 1 (incinerators 1 and 2 combined) and from Line 2 (incinerators 1 and 2 combined)	Before use of a new disposal or recycling route	01/01/2006
TOC	Bottom Ash Samples from line 1 (incinerators 1 and 2 combined) and from Line 2 (incinerators 1 and 2 combined)	Monthly	01/01/2006
LOI (Alternative to TOC)	Bottom Ash Samples from line 1 (incinerators 1 and 2 combined) and from Line 2 (incinerators 1 and 2 combined)	Monthly	01/01/2006

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	APC Residues Samples from line 1 (incinerators 1 and 2 combined) and from Line 2 (incinerators 1 and 2 combined)	Before use of a new disposal or recycling route	01/01/06
Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	APC Samples from line 1 (incinerators 1 and 2 combined) and from Line 2 (incinerators 1 and 2 combined)	Before use of a new disposal or recycling route	01/01/06
Water usage	Installation	Every 12 months	01/01/06
Energy usage	Installation	Every 12 months	01/01/06
Waste disposal and/or recovery.	Installation	Every 12 months	01/01/06

Table S4.2: Annual production/treatment	
Parameter	Units
Total Municipal Waste Incinerated	tonnes
Electrical energy exported	kWh
Electrical energy used on installation	kWh
Other energy produced by installation	kWh
Total Municipal Waste Incinerated	tonnes
Electrical energy exported	kWh
Ash destined for disposal	tonnes
Ash destined for recovery / recycling	tonnes

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Electrical energy Imported from national grid	Quarterly	kWh / tonne of waste incinerated (dry basis)
Electrical energy exported to national grid	Quarterly	kWh / tonne of waste incinerated (dry basis)
Net export of electrical energy to national grid	Quarterly	kWh / tonne of waste incinerated (dry basis)
Fuel oil consumption	Quarterly	kg/ tonne of waste incinerated (dry basis)
Mass of Bottom Ash produced	Quarterly	kg/ tonne of waste incinerated (dry basis)
Mass of APC residues produced	Quarterly	kg/ tonne of waste incinerated (dry basis)
Ammonia consumption	Quarterly	kg/ tonne of waste incinerated (dry basis)
Activated Carbon consumption	Quarterly	kg/ tonne of waste incinerated (dry basis)
Lime consumption	Quarterly	kg/ tonne of waste incinerated (dry basis)
Water consumption (incineration plant)	Quarterly	m ³ / tonne of waste incinerated (dry basis)

Table S4.4 Reporting forms

Media/parameter	Reporting format	Date of form
Air: Periodic monitored emissions biannually	Environment Agency Form / BJ5775 / A1 / Form dated 05/12/05	05/12/05
Air: Continuously monitored emissions of particulates	Environment Agency Form / BJ5775/ A2 / Form dated 05/12/05	05/12/05
Air: Continuously monitored emissions of Hydrogen chloride	Environment Agency Form / BJ5775/ A3 / Form dated 05/12/05	05/12/05
Air: Continuously monitored emissions of TOC	Environment Agency Form / BJ5775/ A4 / Form dated 05/12/05	05/12/05
Air: Continuously monitored emissions of Carbon monoxide	Environment Agency Form / BJ5775/ A5 / Form dated 05/12/05	05/12/05
Air: Continuously monitored emissions of Sulphur dioxide	Environment Agency Form / BJ5775/ A6 / Form dated 05/12/05	05/12/05
Air: Continuously monitored emissions of Oxides of nitrogen	Environment Agency Form / BJ5775/ A7 / Form dated 05/12/05	05/12/05
Sewer: monitoring data	Environment Agency Form / BJ5775/ S1 / Form dated 05/12/05	05/12/05
Bottom Ash, APC Residues: Composition	Environment Agency Form / BJ5775/ Ash1 / Form dated 05/12/05	05/12/05
Bottom Ash, APC Residues: Solubility	Environment Agency Form / BJ5775/ Ash2 / Form dated 05/12/05	05/12/05
Energy	Environment Agency Form / BJ5775/ E1 / Form dated 05/12/05	05/12/05
Waste Return	Environment Agency Form / BJ5775/ R1 / Form dated 05/12/05	05/12/05
Water usage	Environment Agency Form / BJ5775/ WU1 / Form dated 05/12/05	05/12/05
Performance indicators	Environment Agency Form / BJ5775/ PI1 / Form dated 05/12/05	05/12/05

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 Installation	
Location of the emission	
Time and date of the emission	

Substance(s) emitted	Media	Best estimate of the quantity or the rate of emission	Time during which the emission took place

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

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 or harm which has been or may be caused by the emission	
The dates of any unauthorised emissions from the Installation in the preceding 24 months.	

Part C

Permit Number	
Name of Operator	
Location of Installation	

Incinerator line which was subject to abnormal operation.								
Time at which abnormal operation commenced								
Time at which abnormal operation ceased								
Duration of this incidence of abnormal operation								
Cumulative abnormal operation duration in current year (at end of present incidence)								
Reasons for abnormal operation								
How did the abnormal operation end? (e.g. plant repaired, reaching maximum permitted duration, initiation of shutdown, etc.)								
Where the abnormal operation was caused by the failure of the particulate, CO or TOC CEM, attach a copy of the alternate monitoring data which was used to demonstrate compliance with the abnormal operation emission limit values.								
Where abatement plant has failed, give the half-hourly average emissions for pollutants of relevance during the abnormal operation in the rows below								
Pollutant	1 st ½ hour	2 nd ½ hour	3 rd ½ hour	4 th ½ hour	5 th ½ hour	6 th ½ hour	7 th ½ hour	8 th ½ hour

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 - Interpretation

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

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

“Annex IIA” means Annex IIA to Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on Waste.

“annual limit” means the total release during any calendar year commencing 1 January.

“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.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site.

“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

“composting” means the biological decomposition of organic materials, under conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat.

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

“daily average” for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation. Where any of abnormal operation, start-up or shut-down occur during the day in such a way that there are less than 43 half-hourly averages recorded during normal operation, no daily average shall be recorded for that day

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

“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..

“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.

“*hazardous waste*” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 No.894, the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138), the List of Wastes (England) Regulations 2005 No.895 and the List of Wastes (Wales) Regulations 2005 No. 1820 (W.148).

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

“*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.

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

“*shut down*” is any period where the plant is being returned to a non-operational state and there is no waste being burned.

“*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.

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

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

“*WID abnormal operation*” means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices [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.

“*year*” means calendar year ending 31 December.

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

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

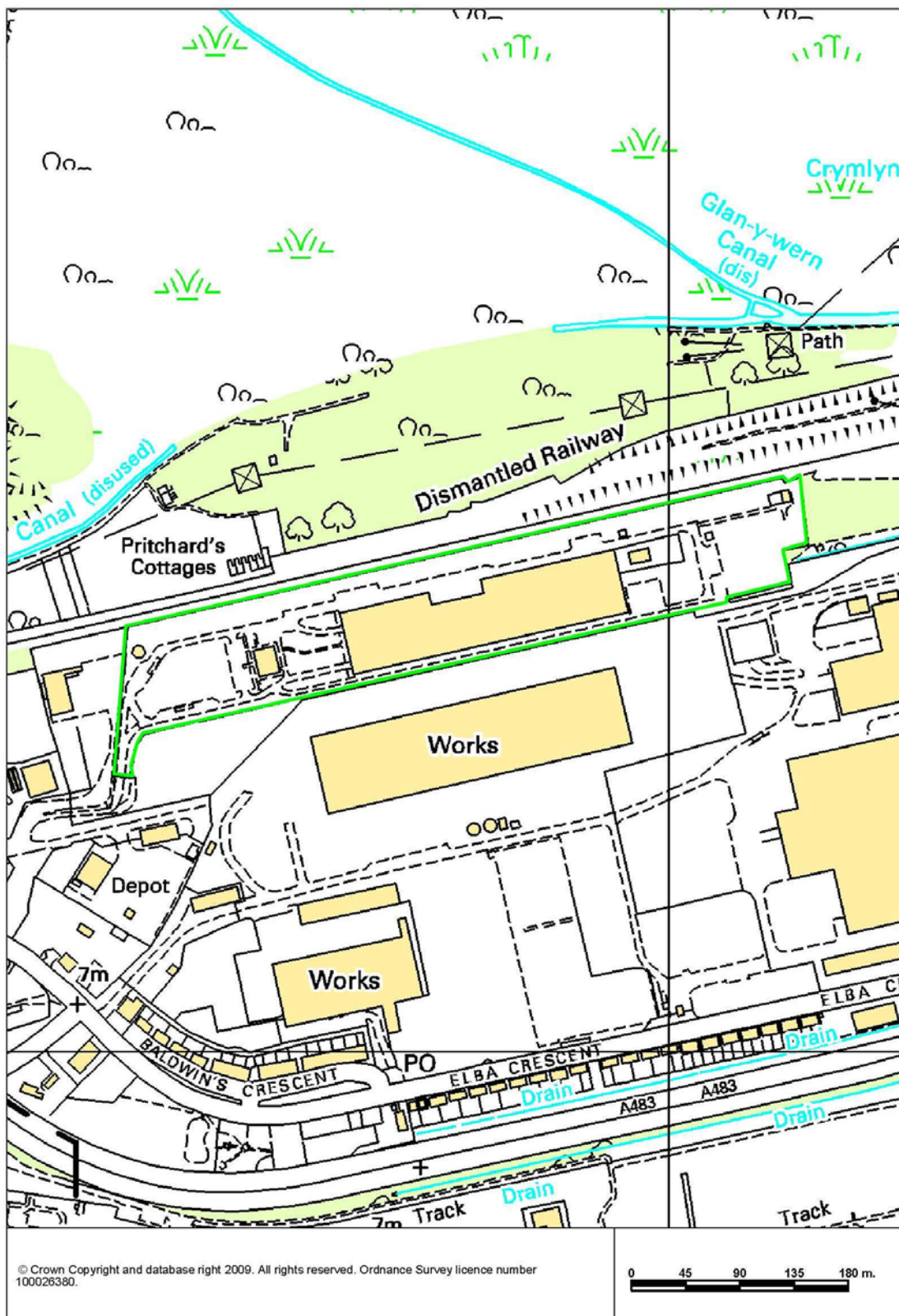
- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content
- (c) in relation to gases from incineration plants other than those burning waste oil, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry.

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing.

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



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