



Environment  
Agency

## Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

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Innovative Environmental Solutions UK  
Limited

IES - Oldbury  
Union Road  
Oldbury  
B69 3EL

Permit number  
EPR/GP3739VR

# IES - Oldbury

## Permit number EPR/GP3739VR

### Introductory note

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

This permit controls the operation of a waste incineration plant. The relevant listed activity is Section 5.1 Part A(1)(b): the incineration of non-hazardous waste in an incineration plant with a capacity exceeding 3 tonnes per hour. The permit implements the requirements of the EU Directives on Industrial Emissions and Waste.

The main features of the permit are as follows.

The principal purpose of the activities is to dispose of automotive shredder residue (ASR) and recover energy used to generate electricity for use on the site itself and exported to the local electricity grid. The facility uses a patented gasification process (RODECS) to treat 180,000 tonnes/year of ASR with a calorific value of around 20 MJ/kg.

There are four RODECS rotating gasifiers, two in each of the two processing lines. Each RODECS gasifier is served by a combustion unit, boiler and air pollution control gas cleaning train. The cleaned gases from each processing line are released to atmosphere via a twin-flue, 50 m tall stack. Monitoring is carried out by a continuous emissions monitoring (CEM) system in each flue. The steam from each pair of boilers is fed to a steam turbine for the generation of electricity. Two turbines comprise the total means of generating electricity from the facility.

The process is summarised below:

- The ASR feed material for the process is received from the adjacent facility operated by EMR under an EPR Permit. It has been pre-treated by removing material unsuitable for the gasification process and shredding.
- The gasification process operates using four individual batch gasification systems.
- Each system is a standalone unit in that it comprises a RODECS processing bin, combustion chamber, waste heat boiler and air abatement system.
- Two of these gasification systems feed one steam turbine (Line 1 - L1a + L1b) whilst the other two gasification systems feed the second steam turbine (Line 2 – L2a + L2b).
- The ASR is batch fed into one of the four RODECS processing bins, each capable of processing up to six tonnes/hour. When full, the processing bin is lifted on to the RODECS rotating gasifier and clamped into position.
- In the RODECS gasifier the ASR is treated at controlled temperatures, under a non-oxidative atmosphere to enable the organic content to be degraded and transformed into gaseous components known as synthetic gas or 'syngas'.
- A solid residue is also produced in the RODECS gasifier which remains in the processing bin until the end of the batch. This is then collected and returned to the adjacent EMR site for further treatment and disposal.

- There are two conveyors (one for incoming ASR material from EMR and one for outgoing solid material returned to EMR for recycling) which are within the EMR installation boundary.
- The syngas passes to the combustion chamber where it is burned to produce hot combustion gases. The initial heat source is provided by a natural gas burner housed within the combustion chamber.
- The combustion gases pass to the boiler where steam is produced and fed to one of the turbines to generate the electrical output.
- The cooled combustion gases are treated to remove pollutants and the cleaned gases are exhausted to air via a single twin-flue 50 m stack.

The installation will generate around 39.6 MWe of electrical power (7.5 MWe will be utilised to meet on site demand with the remaining 32.1 MWe being exported to the local electricity grid). At this stage there is no outlet for the surplus heat from the process.

The principal raw material used by the installation is ASR waste. Various chemicals are required for flue gas cleaning, boiler maintenance, on-site machinery etc. and these include sodium bicarbonate, ammonium hydroxide, activated carbon and diesel. Materials are stored in suitable containers or silos, within bunds as appropriate, to minimise the risk of spillage and contamination of land and surface waters.

Ceramic filters are used to abate the exhaust gas streams for metals and other particulate matter. Air feed control, flue gas recirculation and selective non-catalytic reduction (SNCR), using ammonia; control the NO<sub>x</sub> content of the emission. Acid gases are neutralised by injecting sodium bicarbonate onto the ceramic filters. Powdered activated carbon is also injected onto the ceramic filters to capture dioxins, furans and mercury vapour.

Uncontaminated surface water run-off will be collected in the surface water drainage system and directed to the adjacent EMR facility. Boiler blow-down will be discharged intermittently to foul sewer under consent.

The two principal residue streams arising from the facility are as follows:

- Approximately 25,000 tonnes/year of RODECS processing bin residues (gasification ash) of metals, aggregates, glass and ceramics. They are recovered and conveyed to the adjacent EMR facility for further processing and recovery.
- Approximately 4,500 tonnes/year of air pollution control (APC) residues. The operator is investigating the possibility of treating and recycling at least some of the APC residues, otherwise they are disposed of to a suitably licensed facility.

Exhaust gases are monitored continuously for particulates, nitrogen oxides, sulphur dioxide, volatile organic compounds, ammonia, carbon monoxide, hydrogen chloride, total organic carbon and oxygen. They are monitored periodically for heavy metals, dioxins & furans, hydrogen fluoride, dioxin like PCBs, Polycyclic aromatic hydrocarbons, ammonia and nitrous oxide.

An Environmental Management System will be developed for the facility in accordance with the requirements of the ISO 14001 standard.

There are several potentially sensitive sites close to the facility:

- Residential areas within 100 – 300 metres

- The borough has been declared as an Air Quality Management Area (AQMA) with respect to the annual average NO<sub>2</sub>.
- Fens Pools, a Special Area of Conservation (SAC) within 10 km and eleven non-statutory local wildlife and conservation sites located within 2 km.

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>Detail</b>	<b>Date</b>	<b>Comments</b>
Application EPR/GP3739VR/A001	Duly made 22/05/14	
Further Information Notice dated 05/06/14	Response received 13/06/14	Acid deposition, hydrogen fluoride assessment, VOCs and dioxins/abnormal operation (3 <sup>rd</sup> Addendum P1410)
Further Information Notice dated 12/06/14	Response received 25/06/14 dated 24/06/14	Noise assessment  (day-time scenario and background monitoring)
Further Information Notice dated 17/06/14	Response received 25/06/14 04/07/14	Ammonia assessment, AQMA, background concentrations and abnormal operations (4 <sup>th</sup> Addendum P1410) Miscellaneous
Further Information Notice dated 10/07/14	Response received 10/07/14	Updated Flood Risk Assessment (FRA)
Email requesting additional information sent 21/07/14	Response received 21/07/14	Background concentrations required for abnormal emissions assessment.
Further Information Notice dated 01/08/14	Response received 12/08/14 26/08/14 29/08/14 08/09/14 26/09/14	Best Available Techniques (BAT) assessment  Items 1, 2 and 4 Item 5 Item 3
Further Information Notice dated 06/08/14	Response received 18/08/14	Human Health Risk assessment (HHRA), corrected units
Email requesting additional information sent 27/08/14	Response received 03/09/14 05/09/14 03/10/14	Bottom ash limit Amended Application Form B2 (multi-operator) Site plan (multi-operator)
Draft Decision	27/10/14	Draft permit EPR/GP3739VR
<b>Final Decision</b>	<b>DD/MM/Y</b>	

#### **Other Part A installation permits relating to this installation**

<b>Operator</b>	<b>Permit Number</b>	<b>Date of Issue</b>
European Metal Recycling Limited (EMR)	EPR/TP3938ZN	29/10/13

End of Introductory Note

# Permit

The Environmental Permitting (England and Wales) Regulations 2010

**Permit number**  
**EPR/GP3739VR**

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

**Innovative Environmental Solutions UK Limited** (“the operator”),

whose registered office is

**Sirius House Delta**

**Crescent**

**Westbrook**

**Warrington**

**Cheshire**

**WA5 7NS**

company registration number **06583508**

to operate an installation at the

**IES - Oldbury**

**Union Road**

**Oldbury**

**B69 3EL**

Name

Date

<p><b><i>[name of authorised person]</i></b></p>	<p><b><i>[DD/MM/YYYY]</i></b></p>
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Authorised on behalf of the Environment Agency

# Conditions

## 1 Management

### 1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
  - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and energy is used efficiently in the activities.
  - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
  - (c) take any further appropriate measures identified by a review.
- 1.2.2 The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.
- 1.2.3 The operator shall review the practicability of Combined Heat and Power (CHP) implementation at least every 2 years. The results shall be reported to the Agency within 2 months of each review.

### 1.3 Efficient use of raw materials

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
  - (b) maintain records of raw materials and water used in the activities;
  - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
  - (d) take any further appropriate measures identified by a review.

## **1.4 Avoidance, recovery and disposal of wastes produced by the activities**

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
  - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
  - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **1.5 Multiple operator installations**

- 1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.
- 1.5.2 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, which is within the area edged in red on the site plan that represents the extent of the installation covered by this permit and that of the other operator of the installation.

# **2 Operations**

## **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).
- 2.1.2 Waste authorised by this permit in condition 2.3.3 shall be clearly distinguished from any other waste on the site.

## **2.2 The site**

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

## **2.3 Operating techniques**

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

- (b) If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
  - (b) it conforms to the description in the documentation supplied by the producer or holder.
- 2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.
- 2.3.6 Waste shall not be charged to the gasifier, 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 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 abnormal operating conditions.
- 2.3.7 The operator shall have at least one auxiliary burner in each line at start up or shut down or whenever the operating temperature falls below that specified in condition 2.3.6, as long as incompletely burned syngas is present in the combustion chamber. Unless the temperature specified in condition 2.3.6 is maintained in the combustion chamber, such burners may be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.
- 2.3.8 The operator shall record the beginning and end of each period of “abnormal operation”.
- 2.3.9 During a period of “abnormal operation”, the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.
- 2.3.10 Where, during “abnormal operation”, on an incineration line, any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:



- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to disturbances or failures of the abatement systems, or continuous emission monitor(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
- (b) the cumulative duration of “ abnormal operation” periods over 1 calendar year has reached 60 hours;
- (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) continuous emission monitors or alternative techniques to demonstrate compliance with the emission limit value(s) for particulates, TOC and CO 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 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 gasification 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 “abnormal operation”;
- (d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached.

2.3.12 Gasification ash and APC residues shall not be mixed.

## **2.4 Improvement programme**

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

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

## **2.5 Pre-operational conditions**

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

# **3 Emissions and monitoring**

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

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

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

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.
- 3.2.4 The Operator shall carry out monitoring of groundwater at least once every 5 years; and of soil at least once every 10 years; to the protocol agreed in writing with the Environment Agency under Pre-operational condition PO7 in schedule 1 table S1.4.

## **3.3 Odour**

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

### **3.4 Noise and vibration**

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

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1, S3.1(a), S3.2 and S3.3;
  - (b) process monitoring specified in table S3.4;
  - (c) residue quality in table S3.5.
- 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. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.1(a), S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; the Continuous Emission Monitors shall be used such that;
- (a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:

• Carbon monoxide	10%
• Sulphur dioxide	20%

- Oxides of nitrogen (NO & NO<sub>2</sub> expressed as NO<sub>2</sub>) 20%
  - Particulate matter 30%
  - Total organic carbon (TOC) 30%
  - Hydrogen chloride 40%
- (b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.5.5(a);
- (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;
- (d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;
- (e) no more than ten daily average values per year shall be determined not to be valid.

## 3.6 Pests

3.6.1 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.

3.6.2 The operator shall:

- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazards or annoyance from pests;
- (b) implement the pests management plan, from the date of approval, 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 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- (d) the functioning and monitoring of the incineration plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

## 4.3 Notifications

### 4.3.1 The Operator shall

- (a) in the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
  - (i) inform the Environment Agency,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
  - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition, the operator must immediately—
  - (i) inform the Environment Agency, and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

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

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

Where the operator is a registered company:

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

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

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

4.3.4 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.

4.3.5 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

## **4.4 Interpretation**

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately”, in which case it may be provided by telephone.

DRAFT

# Schedule 1 - Operations

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
Section 5.1 Part A(1) (b)  The incineration of non-hazardous waste in a waste incineration plant with a capacity exceeding 3 tonnes per hour.	The gasification of ASR with production and combustion of a gas known as synthetic gas or 'syngas'.	From receipt of waste to emission of exhaust gas and disposal of waste arising.  Waste types and quantities as specified in Table S2.2 of this permit.
<b>Directly Associated Activity</b>		
Electricity Generation	Generation of approximately 39.6 MWe electrical power using a steam turbine from energy recovered from the flue gases.	From receipt of steam, to the supply of power.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to question 3 Operating techniques, given in Part B3 of the Application form. Includes Table 3a – Technical Standards.  Application Supporting Statement: Section 5 – Operating Techniques Section 8.2 – Monitoring of process variables Section 9.2 – Energy Recovery	22/05/14
Response to Schedule 5 Notice dated 17/06/14	Responses to: Item 8 (Bund Capacity) Item 9 (dump stacks and by-pass systems)	04/07/14



<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
<b>IC1</b>	The Operator shall submit a written report to the Environment Agency on the implementation of its Environmental Management System (EMS) and the progress made in the certification of the system by an external body or if appropriate submit a schedule by which the EMS will be certified.	Within 12 months of the date on which waste is first gasified.
<b>IC2</b>	The Operator shall submit a written proposal to the Environment Agency to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission point A1, identifying the fractions within the PM <sub>10</sub> , and PM <sub>2.5</sub> ranges. The proposal shall include a timetable for approval by the Environment Agency to carry out such tests and produce a report on the results. On receipt of written agreement by the Environment Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Environment Agency a report on the results.	Within 6 months of the completion of commissioning.
<b>IC3</b>	The Operator shall submit a written report to the Environment Agency on the commissioning of the Installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Within 4 months of the completion of commissioning.
<b>IC4</b>	The Operator shall carry out checks to verify the residence time, minimum temperature and oxygen content of the exhaust gases in the combustion whilst operating under the anticipated most unfavourable operating conditions. The results shall be submitted in writing to the Environment Agency.	Within 4 months of the completion of commissioning.
<b>IC5</b>	The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of the Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NO <sub>x</sub> ) emissions within the emission limit values described in this permit with the minimisation of nitrous oxide emissions. The report shall include an assessment of the level of NO <sub>x</sub> and N <sub>2</sub> O emissions that can be achieved under optimum operating conditions.  The report shall also provide details of the optimisation (including dosing rates) for the control of acid gases and dioxins	Within 4 months of the completion of commissioning.
<b>IC6</b>	The Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values, i.e. As, Cr, Cd and Ni. A report on the assessment shall be made to the Environment Agency.  Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant EQS/EAL. In the event that the assessment shows that an EQS/EAL can be exceeded, the report shall include proposals for further investigative work.	15 months from commencement of operations.

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
<b>IC7</b>	The Operator shall submit a written summary report to the Environment Agency to confirm by the results of calibration and verification testing that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 and Table S3.1(a) complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	Initial calibration report to be submitted within 3 months of completion of commissioning.  Full summary evidence compliance report to be submitted within 18 months of commissioning.
<b>IC8</b>	The Operator shall provide a report to the Environment Agency detailing the findings of a noise survey conducted in accordance with BS4142:1997 designed for comparison with the predictive calculations presented in the Application.  If the assessment indicates that the plant might give rise to complaints then the report will include further investigation and studies undertaken to identify the specific source(s) of the problematic noise and measures proposed to mitigate the potential impact to acceptable levels in accordance with BS4142:1997.	Within 3 months of completion of commissioning.

<b>Table S1.4 Pre-operational measures</b>	
<b>Reference</b>	<b>Pre-operational measures</b>
<b>PO1</b>	Prior to the commencement of commissioning, the Operator shall send a summary of the site Environment Management System (EMS) to the Environment Agency and make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Section 1 of How to comply with your environmental permit. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.
<b>PO2</b>	Prior to the commencement of commissioning, the Operator shall send a report to the Environment Agency which will contain a comprehensive review of the options available for utilising the heat generated by the waste gasification process in order to ensure that it is recovered as far as practicable. The review shall detail any identified proposals for improving the recovery and utilisation of waste heat and shall provide a timetable for their implementation.
<b>PO3</b>	Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency for approval a protocol for the sampling and testing of gasification ash for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved.
<b>PO4</b>	Prior to the commencement of commissioning, the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
<b>PO5</b>	Prior to the commencement of commissioning, the Operator shall submit a written report to the Environment Agency detailing the waste acceptance procedure to be used at the site. The waste acceptance procedure shall include the process and systems by which wastes unsuitable for gasification at the site will be controlled. The procedure shall be implemented in accordance with the written approval from the Environment Agency.

<b>Table S1.4 Pre-operational measures</b>	
<b>Reference</b>	<b>Pre-operational measures</b>
<b>PO6</b>	After completion of combustion chamber design and at least three calendar months before any combustion chamber operation; the operator shall submit a written report to the Environment Agency of the details of the computational fluid dynamic (CFD) modelling. The report shall demonstrate whether the design combustion conditions comply with the residence time and temperature requirements as defined by the Industrial Emissions Directive.
<b>PO7</b>	The Operator shall submit the written protocol referenced in condition 3.2.4 for the monitoring of soil and groundwater for approval by the Environment Agency. The protocol shall demonstrate how the Operator will meet the requirements of Articles 14(1)(b), 14(1)(e) and 16(2) of the Industrial Emissions Directive. The procedure shall be implemented in accordance with the written approval from the Environment Agency.

DRAFT

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

**Table S2.1 Raw materials and fuels**

Raw materials and fuel description	Specification
-	-

**Table S2.2 Permitted waste types and quantities for the Gasification plant**

<b>Maximum quantity</b>	The quantity of wastes accepted for gasification shall not exceed 180,000 tonnes a year.
<b>Waste code</b>	<b>Description</b>
<b>19</b>	<b>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</b>
<b>19 10</b>	<b>wastes from shredding of metal-containing wastes</b>
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03

## 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	Reference period	Monitoring frequency	Monitoring standard(s) or method(s)
A1  Main twin-flue stack, as indicated on site plan in Schedule 7	Particulate matter	Line 1 (L1a + L1b)	30 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
		Line 1 (L1a + L1b)	10 mg/m <sup>3</sup>	daily average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
	Total Organic Carbon (TOC)	Line 1 (L1a + L1b)	20 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
		Line 1 (L1a + L1b)	10 mg/m <sup>3</sup>	daily average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
	Hydrogen chloride (HCl)	Line 1 (L1a + L1b)	60 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
		Line 1 (L1a + L1b)	10 mg/m <sup>3</sup>	daily average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
	Hydrogen fluoride (HF)	Line 1 (L1a + L1b)	2 mg/m <sup>3</sup>	periodic over minimum 1 hour period	Quarterly in first year. Then Bi-annual	BS ISO 15713
		Line 2 (L2a + L2b)				
	Carbon monoxide (CO)	Line 1 (L1a + L1b)	100 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
		Line 1 (L1a + L1b)	50 mg/m <sup>3</sup>	daily average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
	Sulphur dioxide (SO <sub>2</sub> )	Line 1 (L1a + L1b)	200 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181
		Line 2 (L2a + L2b)				
		Line 1 (L1a + L1b)	50 mg/m <sup>3</sup>	daily average	Continuous measurement	BS EN 14181
Line 2 (L2a + L2b)						
Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Line 1 (L1a + L1b)	400 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181	
	Line 2 (L2a + L2b)					
	Line 1 (L1a + L1b)	150 mg/m <sup>3</sup>	daily average	Continuous measurement	BS EN 14181	

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

Emission point ref. & location	Parameter	Source	Limit	Reference period	Monitoring frequency	Monitoring standard(s) or method(s)
		Line 2 (L2a + L2b)				
	Cadmium & thallium and their compounds (total) (Cd & Tl)	Line 1 (L1a + L1b)	0.05 mg/m <sup>3</sup>	Periodic over minimum 30 minutes, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 14385
		Line 2 (L2a + L2b)				
	Mercury and its compounds (Hg)	Line 1 (L1a + L1b)	0.05 mg/m <sup>3</sup>	Periodic over minimum 30 minutes, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 13211
		Line 2 (L2a + L2b)				
	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Line 1 (L1a + L1b)	0.5 mg/m <sup>3</sup>	Periodic over minimum 30 minutes, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 14385
		Line 2 (L2a + L2b)				
	Ammonia (NH <sub>3</sub> )	Line 1 (L1a + L1b)	No limit set	Periodic over minimum 1 hour period	Quarterly in first year. Then Bi-annual	Procedural requirements of BS EN 14791
		Line 2 (L2a + L2b)				
	Nitrous oxide (N <sub>2</sub> O)	Line 1 (L1a + L1b)	No limit set	Periodic over minimum 1 hour period	Quarterly in first year. Then Bi-annual	BS EN ISO 21258
		Line 2 (L2a + L2b)				
	Dioxins / furans (I-TEQ)	Line 1 (L1a + L1b)	0.1 ng/m <sup>3</sup>	Periodic over minimum 6 hours, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
		Line 2 (L2a + L2b)				
	Dioxins / furans (WHO-TEQ Humans / Mammals)	Line 1 (L1a + L1b)	No limit set	Periodic over minimum 6 hours, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
		Line 2 (L2a + L2b)				
	Dioxins / furans (WHO-TEQ Fish)	Line 1 (L1a + L1b)	No limit set	Periodic over minimum 6 hours, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
		Line 2 (L2a + L2b)				

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

Emission point ref. & location	Parameter	Source	Limit	Reference period	Monitoring frequency	Monitoring standard(s) or method(s)				
	Dioxins / furans (WHO-TEQ Birds)	Line 1 (L1a + L1b)	No limit set	Periodic over minimum 6 hours, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS EN 1948-4				
		Line 2 (L2a + L2b)								
	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)	Line 1 (L1a + L1b)								
		Line 2 (L2a + L2b)								
	Dioxin-like PCBs (WHO-TEQ Fish)	Line 1 (L1a + L1b)								
		Line 2 (L2a + L2b)								
	Dioxin-like PCBs (WHO-TEQ Birds)	Line 1 (L1a + L1b)								
		Line 2 (L2a + L2b)								
	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	Line 1 (L1a + L1b)					No limit set	Periodic over minimum 6 hours, maximum 8 hours	Quarterly in first year. Then Bi-annual	BS ISO 11338 Parts 1 and 2.
		Line 2 (L2a + L2b)								
<b>A2</b> As indicated on site plan in Schedule 7	No parameters set	Bag filter exhaust from the hopper extraction hoods	No limit set	--	--	--				
<b>A3</b> As indicated on site plan in Schedule 7	No parameters set	Bag filter exhaust from the hopper feeders	No limit set	--	--	--				

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

Emission point ref. & location	Parameter	Source	Limit	Reference period	Monitoring frequency	Monitoring standard or method
<b>A1</b> Main twin-flue stack, as indicated on site plan in Schedule 7	Particulate matter	Line 1 (L1a + L1b)	150 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure
		Line 2 (L2a + L2b)				
	Total Organic Carbon (TOC)	Line 1 (L1a + L1b)	20 mg/m <sup>3</sup>			
		Line 2 (L2a + L2b)				
	Carbon monoxide (CO)	Line 1 (L1a + L1b)	100 mg/m <sup>3</sup>			
		Line 2 (L2a + L2b)				

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

Emission point ref. & location	Parameter	Comment
None	-	See below for surface water (S1 to S4)

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

Emission point ref. & location	Parameter	Comment
F1, F2, F3 Releases to sewer (foul drains) as indicated on site plan in Schedule 7	No parameters set	Sewer  Boiler blow down and plant maintenance effluent
S1, S2, S3, S4 Releases to surface water (surface drains) as indicated on site plan in Schedule 7	No parameters set	Transfer off-site – surface water  All surface water drains to the adjacent EMR site for treatment and disposal (EPR/TP3938ZN)

**Table S3.4 Process monitoring requirements**

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
Combustion Chamber [1]	Temperature (° C)	Continuous	BS EN 14181
A1  Main twin flue stack (Lines 1 and 2), as indicated on site plan in Schedule 7	Exhaust gas temperature	Continuous	BS EN 14181
	Exhaust gas pressure	Continuous	BS EN 14181
	Exhaust gas oxygen content	Continuous	BS EN 14181
	Exhaust gas water vapour content	Continuous	BS EN 14181

Note [1]: Location close to the inner wall of the Combustion Chamber or as identified and justified in Application.



**Table S3.5 Residue quality**

<b>Emission point reference</b>	<b>Parameter</b>	<b>Limit</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method [1]</b>
Gasification Ash	TOC	<3%	Monthly in the first year of operation. Then Quarterly	Sampling and analysis as per Environment Agency ash sampling protocol.
Gasification Ash 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.	None set	Monthly in the first year of operation. Then Quarterly	
Gasification Ash APC Residues	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	None set	Before use of a new disposal or recycling route	

Note [1]: Or other equivalent standard as agreed in writing with the Environment Agency.

## Schedule 4 - Reporting

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

<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 3.5.1	<b>A1</b> Line 1 (L1a + L1b) Line 2 (L2a + L2b)	Quarterly	1 Jan, 1 Apr, 1 Jul, 1 Oct
TOC Parameters as required by condition 3.5.1	Gasification Ash	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul, 1 Oct
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1	Gasification Ash	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul, 1 Oct
	APC Residues		
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 3.5.1	Gasification Ash	Before use of a new disposal or recycling route	
	APC Residues		
Functioning and monitoring of the incineration plant as required by condition 4.2.2		Annually	1 Jan

<b>Table S4.2: Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Total ASR gasified (Line 1 and Line 2)	tonnes
Electrical energy produced (Line 1 and Line 2)	kWh
Thermal energy produced e.g. steam for export (Line 1 and Line 2)	kWh
Electrical energy exported (Line 1 and Line 2)	kWh
Electrical energy used on installation (Line 1 and Line 2)	kWh
Waste heat utilised by the installation (Line 1 and Line 2)	kWh

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
Electrical energy exported, imported and used at the installation	Quarterly	kWh / tonne of waste gasified
Mass of gasification ash produced (Line 1 and Line 2)	Quarterly	kg / tonne of waste gasified
Mass of APC residues produced (Line 1 and Line 2)	Quarterly	kg / tonne of waste gasified
Ammonia consumption (Line 1 and Line 2)	Quarterly	kg / tonne of waste gasified
Activated Carbon consumption (Line 1 and Line 2)	Quarterly	kg / tonne of waste gasified
Sodium Bicarbonate consumption (Line 1 and Line 2)	Quarterly	kg / tonne of waste gasified
Water consumption (Line 1 and Line 2)	Quarterly	m <sup>3</sup> / tonne of waste gasified
Periods of abnormal operation (Line 1 and Line 2)	Quarterly	No of occasions and cumulative hours for current calendar year for each line.

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Air	Form <i>Air 1-8</i> or other form as agreed in writing by the Environment Agency	2014
Residues	Form <i>Residues 1</i> or other form as agreed in writing by the Environment Agency	2014
Energy usage	Form <i>Energy 1</i> or other form as agreed in writing by the Environment Agency	2014
Other performance indicators	Form <i>Performance 1</i> or other form as agreed in writing by the Environment Agency	2014

## Schedule 5 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

### Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

### (a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment

To be notified Immediately	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

### (b) Notification requirements for the breach of a permit condition

To be notified immediately	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>
<b>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>	
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 abatement plant or the measurement devices during which the concentrations in the discharges into air and the purified waste water of the regulated substances may exceed the normal emission limit values.

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

*“APC residues”* means air pollution control residues.

*“application”* means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

*“authorised officer”* means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

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

*“gasification ash”* means residue in the RODECS gasifier.

*“CEM”* Continuous emission monitor.

*“CEN”* means Comité Européen de Normalisation.

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

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

*“disposal”*. Means any of the operations provided for in Annex 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 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

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

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

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

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

*“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.

“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.

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

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

“shut down” is any period where the plant is being returned to a non-operational state as described in the application.

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

“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 Gasifier 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 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 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;
- (b) in relation to gases from incineration plants other than those burning waste oil, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry.

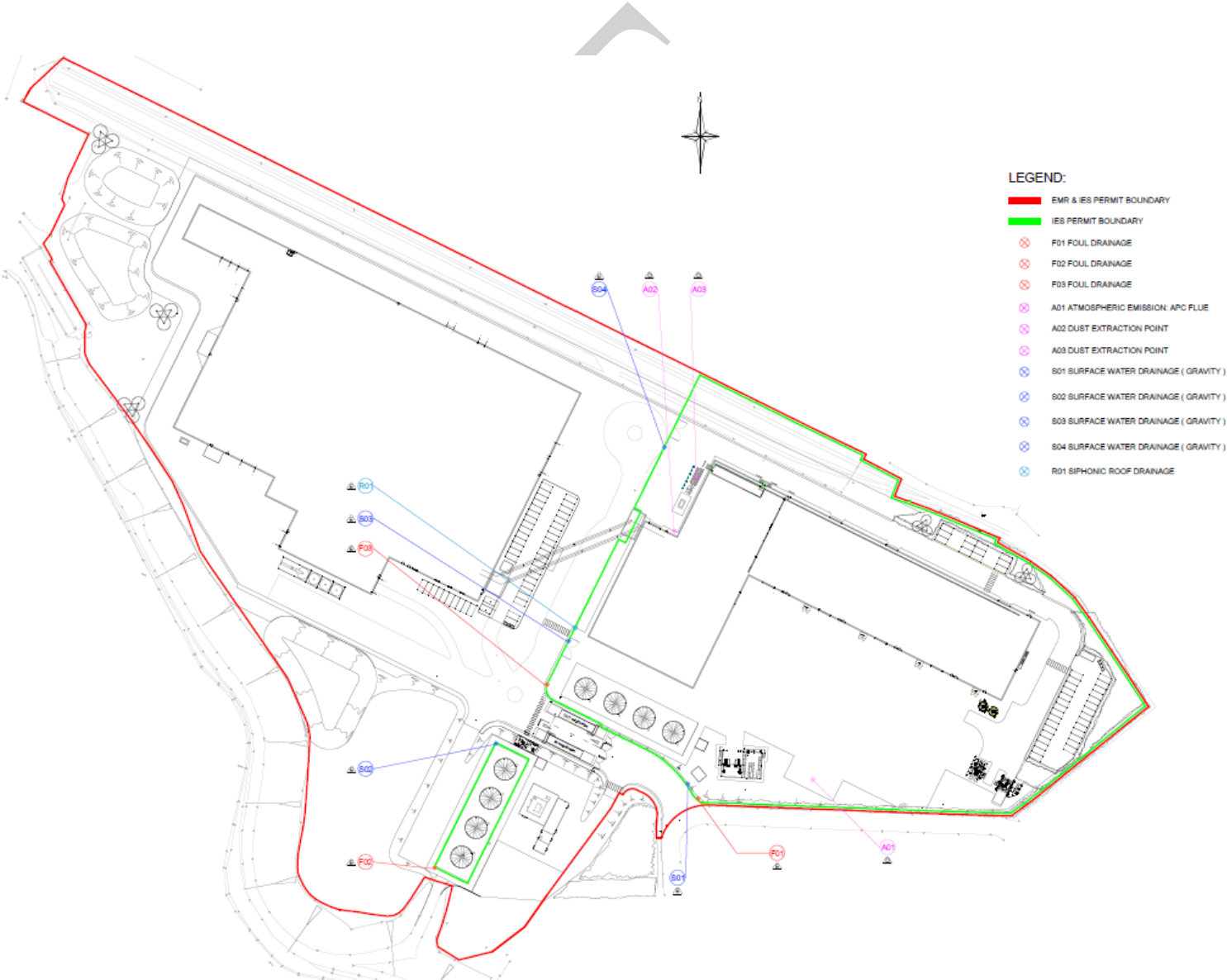
For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their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

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



END OF PERMIT