



Schedule 13A Permit with introductory note

NORTH EAST LINCOLNSHIRE COUNCIL

**POLLUTION PREVENTION AND CONTROL ACT 1999
Environmental Permitting Regulations 2010 (as amended)**

Installation address

**Energy Pyrolysis Ltd
West Factory Bale Store
Moody Lane
Grimsby
North East Lincolnshire
DN31 2TT**

Permit Ref. no: EP/20140001

Introductory note

This introductory note does not form a part of the Permit

The following Permit is issued under Regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010 (S.I.2010 No. 675) ("the EP Regulations") to operate an installation carrying out one or more of the activities listed in Part 2 to Schedule 1 of those Regulations, to the extent authorised by the Permit.

The permit includes conditions that have to be complied with. It should be noted that aspects of the operation of the installation which are not regulated by those conditions shall be subject to best available techniques, used to prevent or, where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the installation which is not regulated by any condition within the permit.

Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

Confidentiality

The Permit requires the Operator to provide information to North East Lincolnshire Council. The Council will place the information onto the public registers in accordance with the requirements of the EP Regulations. If the operator considers that any information provided is commercially confidential, it may apply to North East Lincolnshire Council to have such information withheld from the register as provided in the EP Regulations. To enable North East Lincolnshire Council to determine whether the information is commercially confidential, the Operator should clearly identify the information in question and should specify clear and precise reasons.

Variations to the permit

Your Attention is drawn to the Variation Notification Procedure condition in the permit. This Permit may be varied in the future. If at any time the activity or any aspect of the activity regulated by the following conditions changes such that the conditions no longer reflect the activity and require alteration, the Regulator should be contacted.

Surrender of the permit

Where an Operator intends to cease the operation of an installation (in whole or in part) the regulator should be informed in writing, such notification must be made as specified in regulation 24(3) of the EP regulations.

Transfer of the permit or part of the permit

Before the Permit can be wholly or partially transferred to another person, a joint application to transfer the Permit has to be made by both the existing and proposed holders, in accordance with Regulation 21 of the EP Regulations. A transfer will be allowed unless the Authority considers that the proposed holder will not be the person who will have control over the operation of the installation or will not ensure compliance with the conditions of the transferred Permit.

Responsibility under workplace health and safety legislation

This Permit is given in relation to the requirements of the EP regulations. It must not be taken to replace any responsibilities you may have under Workplace Health and Safety legislation.

Appeal against permit conditions

Right to Appeal

You have the right of appeal against this permit within 6 months of the date of the decision. The Council can tell you how to appeal. You will normally be expected to pay your own expenses during an appeal.

You will be liable for prosecution if you fail to comply with the conditions of this permit. If found guilty, the maximum penalty for each offence if prosecuted in a Magistrates Court is £50,000 and/or 6 months imprisonment. In a Crown Court it is an unlimited fine and/or 5 years imprisonment.

Our enforcement of your permit will be in accordance with the Regulators "Compliance Code."

Anyone who is aggrieved by the conditions attached to a Permit can appeal to the Secretary of State for the Environment, Food and Rural Affairs. Appeals must be made in accordance with the requirements of Regulation 31 and Schedule 6 of the EP Regulations.

Appeals should be received by the Secretary of State for Environment, Food and Rural Affairs. The address is as follows:

The Planning Inspectorate
Environmental Team, Major & Specialist Casework
Room 4/04 – Kite Wing
Temple Quay House
2 The Square, Temple Quay
BRISTOL
BS1 6PN
Tel: 0117 372 8726
Fax: 0117 372 8139

Please Note

An appeal brought under Regulation 31 (1) (b) and Schedule 6, in relation to the conditions in a permit will not suspend the effect of the conditions appealed against; the conditions must still be complied with.

In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the conditions not subject to the appeal and to direct the local authority either to vary any of these other conditions.

End of introductory note

Permit issued under the Environmental Permitting Regulations (England and Wales) 2010 (as amended)

Permit

Permit Ref. No: EP/20140001

North East Lincolnshire Council (the Regulator) in exercise of its powers under Regulation 13(1) of the Environmental Permitting Regulations 2010 (S.I.2010 No. 675) hereby permits.

Energy Pyrolysis Ltd ("the operator"),

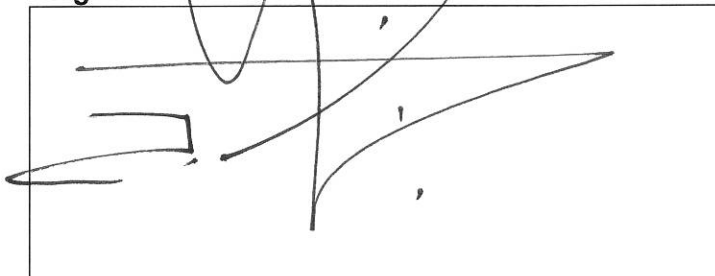
Whose registered office is:
145 – 157 St John Street
London
EC1V 4PW

Company Registration. no: 08679077

To operate an installation at:
West Factory Bale Store
Great Coates Industrial Estate
Moody Lane
Grimsby
North East Lincolnshire
DN31 2TT

to the extent authorised by and subject to the conditions of this Permit and within the boundary identified in Appendix 1, installation boundary.

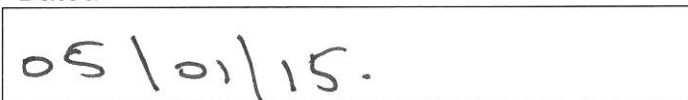
Signed



John Waite
Deputy Manager – Waste

Authorised to sign on behalf of
North East Lincolnshire Council

Dated



Activity description

Small Waste Incineration Process as defined in Schedule 13A (Regulation 35(2)(g)) under the Environmental Permitting (England and Wales) Regulations 2010 (as amended)

Energy pyrolysis Ltd will utilise end-of-life vehicle tyres as feedstock in a pyrolysis reactor. All tyres will be delivered to site in sealed containers; either in skips or bulk tippers and shall only be discharged inside the process building.

The pyrolysis vessel is loaded with the feedstock and then sealed to prevent oxygen egress and the pyrolysis process commences. The Combustion chamber (located beneath the pyrolysis vessel) is fed with LPG to start the pyrolysis process within the vessel. No combustion takes place in the vessel. The oil, gas and carbon black exits the vessel once the pyrolysis temperature is reached, into the first of the separation stages, where the oil, gases and carbon black are separated. The heat exchangers cool down the various constituents prior to storage in each receptacle. The gas separator removes any remaining moisture from the gas stream. Once dried, the gases are fed back into the combustion chamber and the LPG supply is automatically switched off, and the gases that are produced continue the process.

The installation boundary mentioned in permit conditions are shown in the plan attached to this permit.

Conditions

Management

- 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
- 1.2 Records demonstrating compliance 1.1 shall be maintained.
- 1.3 Any person having duties that are or may be affected by the matters set out in these conditions shall have convenient access to a copy of them kept at or near the place where those duties are carried out.
- 1.4 The operator shall comply with the requirements of an approved competence scheme.

Delivery and reception of waste

- 2.1 The delivery and reception of waste 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.
- 2.2 Emissions from the delivery and reception of waste shall be free from odour and noise at levels likely to cause pollution outside the site, as perceived by the Regulator, unless the operator has used appropriate measures, including, but not

limited to, those specified in any approved odour management plan, or noise management plan, to prevent or where that is not practicable to minimise the odour or noise.

2.3 The delivery and reception of waste 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

2.4 No hazardous waste shall be accepted onto site

Heat recovery

3.1 The operator shall ensure that any heat generated by waste incineration plant shall be recovered as far as practicable.

Avoidance, recovery and disposal of residues produced by the activities

4.1 The operator shall ensure that:

- a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of residues by the activities; and
- b) any residues 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; and
- d) the measures taken above are reviewed and recorded at least every four years. Any identified changes should be implemented.

Permitted activities

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

5.2 Waste authorised by this permit in condition 5.1 shall be clearly distinguished from any other waste on the site.

5.3 The maximum input of waste that may be incinerated in the small waste incineration plant is 7500 tonnes per annum, at a rate not exceeding three tonnes per hour. The maximum storage of waste tyres that may be held on site at any one time shall not exceed 250 tonnes.

The site

6.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at Appendix 1 (Installation boundary) to this permit.

Operating techniques

7.1 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table

7.2 Waste shall only be accepted if:

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

7.3 Waste fuel shall not be charged, or shall cease to be charged, if:

- a) the combustion chamber temperature during combustion of the pyrolysis gases (as described within Appendix 4 of the Schedule 5 response – S13A/001/I01/14) 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 “permissible periods of abnormal operation”; or
- d) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than during “permissible periods of abnormal operation”.

7.4 The operator shall record the beginning and end of each “permissible period of abnormal operation”.

7.5 During a “permissible period of abnormal operation”, the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.

7.6 Where, during “permissible periods of 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 monitors are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
- b) the cumulative duration of “permissible periods of abnormal operation” 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 to demonstrate compliance with the emission limit value(s) for particulates, TOC and / or CO in schedule 3 table S3.1 (a), as detailed in the application or as agreed in writing with the Regulator, are unavailable.

7.7 The operator shall interpret the end of the “permissible 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 fuel combustion activity, as described in the application or as agreed in writing with the Regulator;
- c) when a period of four hours has elapsed from the start of the “permissible period of abnormal operation”;
- d) when, in any calendar year, an aggregate of 60 hours has been reached for “permissible periods of abnormal operation”

7.8 Bottom ash and APC residues shall not be mixed.

7.9 Provision shall be made for an impervious collection area for contaminated water due to spillages or fire-fighting, to prevent the pollution of the land and water by contaminated water.

Emissions and monitoring

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

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

8.3 The processes and procedures set out in Appendix 7 and 8 of the schedule 5 response (S13A/001/I01/14) shall be used to ensure that residues are minimised in their amount and harmfulness and that where appropriate residues are recycled, directly in the plant.

8.4 Transport and intermediate storage of dry residues shall be carried out in such a way as to prevent dispersal of those residues in the environment.

8.5 Appropriate tests shall be carried out to establish the physical and chemical characteristics and polluting potential of residues prior to determining the routes for disposal or recycling of those residues. The tests shall concern the total soluble fraction and heavy metals soluble fraction within the residues.

8.6 The operator shall, unless otherwise agreed in writing by the Regulator, 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),
- b) process monitoring specified in table S3.2;
- c) residue quality in condition 8.3

8.7 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.

8.8 Sampling and analysis of polluting substances shall be carried out according to CEN standards or, where CEN standards are not available, to ISO or other national or international standards ensuring the provision of data of an equivalent scientific quality. Prior written approval shall be sought from the Council if sampling methods other than CEN standard methods are proposed.

8.9 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 unless otherwise agreed in writing by the Regulator.

8.10 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; the Continuous Emission Monitors shall be used such that;

- a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:
 - Carbon monoxide 10%
 - Sulphur dioxide 20%
 - Oxides of nitrogen (NO & NO₂ expressed as NO₂) 20%

- Particulate matter 30%
 - Total organic carbon (TOC) 30%
 - Hydrogen chloride 40%
- b) valid half-hourly average values or 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 8.10 (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 or 10-minute average shall in any case be considered valid if measurements are available for a minimum of 20 minutes or 7 minutes during the half-hour or 10-minute period respectively. The number of half-hourly or 10-minute averages so validated shall not exceed 5 or 15 respectively per day;
- d) daily average values shall be determined as the average of all the valid half-hourly average or 10-minute average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average or 15 10-minute average values in any day have been determined not to be valid;
- e) no more than ten daily average values per year shall be determined not to be valid.

Records

9.1 All monitoring 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 Regulator, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - off-site environmental effects; and
 - matters which affect the condition of the land and groundwater.

9.2 The operator shall keep on site all monitoring records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Regulator.

Notifications

10.1 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 Regulator,
 - 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 Regulator, 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

End of Permit Conditions

Schedule 1 – Operations

Table S1.1 activities		
Activity to which to EP Regulations apply	Description of specified activity	Limits of specified activity
Small Waste Incineration Plant (SWIP)	The incineration of non-hazardous waste in a waste incineration plant with a capacity of less than 3 tonnes per hour.	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.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	<i>Incineration capacity, Energy recovery, start – up and shut down.</i>	25.07.14
Response to Schedule 5 Notice	Temperature monitoring in the combustion chamber, emissions monitoring and location. Waste cessation system	14.11.14
Additional information	<i>Plant schematic and emission response including sampling location and emission monitoring</i>	14.11.14

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Liquid petroleum gas	

Table S2.2: Permitted non-hazardous waste types and quantities for pyrolysis			
Waste code	description	detail	Permitted annual usage (tpa)
16 01 03	tyres	End of life vehicles	7500

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(s) or method(s)
SP001 (M)	Particulate matter		30 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
SP001 (M)	Particulate matter		10 mg/m ³	daily average	Continuous measurement	BS EN 14181
SP001 (M)	Total Organic Carbon (TOC)		20 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
SP001 (M)	Total Organic Carbon (TOC)		10 mg/m ³	daily average	Continuous measurement	BS EN 14181
SP001 (M)	Hydrogen chloride		20 mg/m ³	periodic over minimum 1-hour period	Quarterly in first year. Then Bi-annual	BS EN 1911 Parts 1, 2 and 3
SP001 (M)	Hydrogen fluoride		2 mg/m ³	periodic over minimum 1-hour period	Quarterly in first year. Then Bi-annual	BS ISO 15713
SP001 (M)	Carbon monoxide		150 mg/m ³	95% of all 10-minute averages in any 24-hour period	Continuous measurement	BS EN 14181
SP001 (M)	Carbon monoxide		50 mg/m ³	daily average	Continuous measurement	BS EN 14181
SP001 (M)	Sulphur dioxide		100 mg/m ³	periodic over minimum 1-hour period	Quarterly in first year. Then Bi-annual	BS EN 14791
SP001 (M)	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		400 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
SP001 (M)	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		200 mg/m ³	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 (including unit)	Reference period	Monitoring frequency	Monitoring standard(s) or method(s)
SP001 (M)	Cadmium & thallium and their compounds (total)		0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
SP001 (M)	Mercury and its compounds		0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 13211
SP001 (M)	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)		0.5 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
SP001 (M)	Nitrous oxide (N ₂ O)			periodic over minimum 1-hour period	For periodic measurement, quarterly in the first year of operation, then bi-annual	BS EN ISO 21258
SP001 (M)	Dioxins / furans (I-TEQ)		0.1 ng/m ³	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3

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

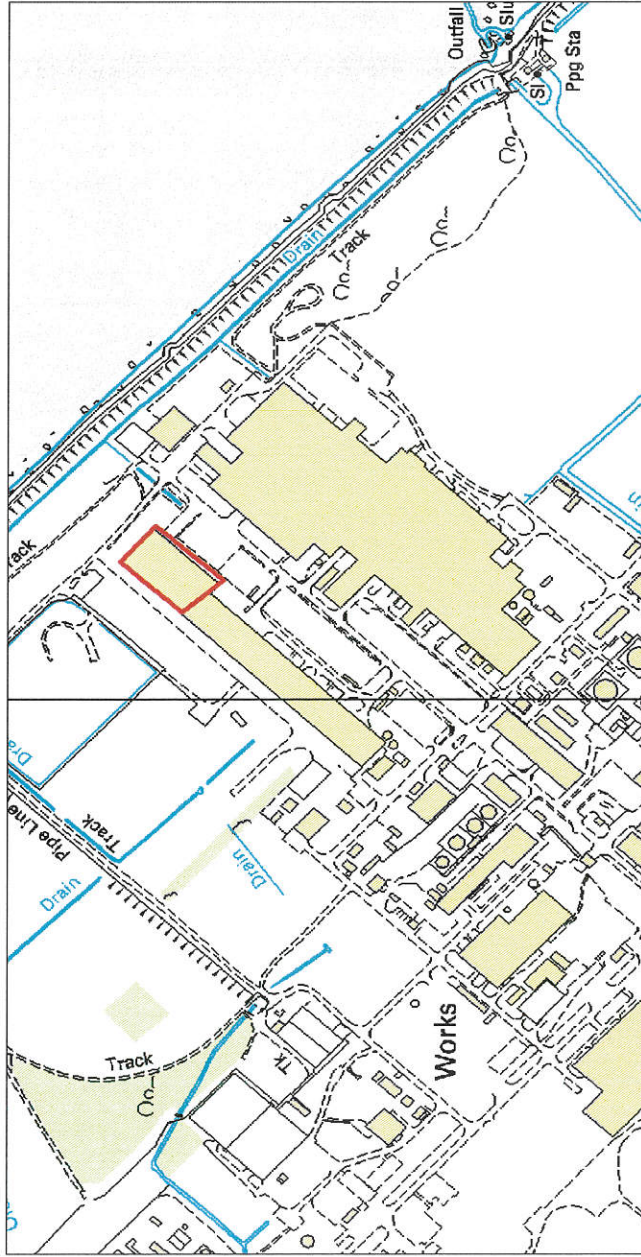
Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
SP001 (M)	Particulate matter		150 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3 during abatement plant failure / during failure of the continuous emission monitor
SP001 (M)	Total Organic Carbon (TOC)		20 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3 during abatement plant failure / during failure of the continuous emission monitor
SP001 (M)	Carbon monoxide		100 mg/m ³	½-hr average	Continuous measurement	BS EN 15267-3 during abatement plant failure / during failure of the continuous emission monitor

Table S3.2 Process monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Location close to the Combustion Chamber inner wall.	Temperature (° C)	Continuous	Traceable to national standards	As agreed in writing with the Regulator.
SP001	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with the Regulator.
SP001	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with the Regulator.
SP001	Exhaust gas oxygen content	Continuous	BS EN 15267-3 BS EN 14181	
SP001	Exhaust gas water vapour content	Continuous	BS EN 15267-3 BS EN 14181	Unless gas is dried before analysis of emissions.

Appendix 1- Installation boundary

The operator is authorised to carry out the activities and/or associated as specified and within the boundary shown in red on the plan below



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