



Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Alkane Energy UK Limited

Kellingley CMM Site
Weeland Road
Knottingley
North Yorkshire
WF11 8DL

Permit number

EPR/FB3601XR

Kellingley CMM Site

Permit number EPR/FB3601XR

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

This permit authorises the operation of a mining waste operation at the Kellingley CMM Site and the management of extractive wastes from prospecting for mineral resources. An exploratory borehole will be drilled to a nominal depth of 621m, targeting the abandoned mine workings of the Kellingley colliery. The borehole will be drilled directionally with water based drilling muds and at pre-determined stages in the drilling operations, steel casing is inserted into the well and cemented into position to provide isolation between different formations and provide part of the well integrity.

Once complete the gas will be flow tested to establish if it contains commercial quantities of methane which could subsequently feed an onsite power generating facility and eventually be exported to the national grid. Gas extracted during the flow test will be flared on site. The operation will fall under the mining waste directive and be permitted as a mining waste activity.

On completion of operations, the borehole will either be abandoned and the site restored or the Coal Authority may adopt the borehole for monitoring purposes.

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

Status log of the permit		
Description	Date	Comments
Application EPR/FB3601XR/A001	Duly made 17/08/17	Application for mining waste operation.
Permit determined EPR/FB3601XR	12/04/18	Permit issued to Alkane Energy UK Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/FB3601XR

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Alkane Energy UK Limited (“the operator”),

whose registered office is

**Edwinstowe House
High Street
Edwinstowe
Nottinghamshire
NG21 9PR**

company registration number **03128509**

to operate waste operations at

**Kellingley CMM Site
Weeland Road
Knottingley
North Yorkshire
WF11 8DL**

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

Name	Date
Principal Permitting Team Leader	12/04/2018

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 Avoidance, recovery and disposal of wastes produced by the activities

- 1.2.1 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.
- 1.2.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

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

2.2 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 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.
- 2.3.2 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 or

other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

- 2.3.3 The operator shall review the waste management plan every five years from the date of initial approval.

2.4 Pre-operational conditions

- 2.4.1 Activity A2 shall not be brought into operation until the measures specified in schedule 1 table S1.3 have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

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

3.3 Odour

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

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

3.4 Noise and vibration

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

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

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 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 S4.2 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

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 Where the operator proposes to make an amendment to the approved waste management plan, which 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 implementing the amended waste management plan in place of the original; and
- (b) the notification shall contain a description of the proposed amendment.

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	Description of activities for waste operations	Limits of activities
A1 Borehole drilling	The management of extractive waste from prospecting for mineral resources not involving a waste facility.	<p>Permitted waste types shall conform to the description in the approved waste management plan.</p> <p>The activities shall be limited to the following extractive waste types – non-hazardous water based drilling muds, non-hazardous drill cuttings.</p> <p>The activities shall be limited to those described in the approved Waste Management Plan referenced AEUK/EA/WM-001 Rev 1 dated 01/08/2017.</p> <p>Drilling additives shall be approved in writing by the Environment Agency prior to use.</p> <p>The activities shall be limited to waste arising from the prospecting for oil and/or gas, not including well stimulation.</p> <p>The storage of extractive waste is limited to temporary storage in secure containment as part of the collection and transportation of waste from the site.</p>
A2 Production testing	<p>The management of hazardous and non-hazardous extractive solid and liquid waste and gas, from prospecting for mineral resources not including a waste facility resulting from well testing</p> <p>The management of extractive waste generated by well abandonment.</p>	<p>The activities shall be limited to those described in the approved Waste Management Plan referenced AEUK/EA/WM-001 Rev 1 dated 01/08/2017.</p> <p>Permitted waste types shall conform to the description in the approved waste management plan.</p> <p>The storage of extractive waste is limited to temporary storage in secure containment as part of the collection and transportation of waste from the site.</p> <p>There will be no reinjection of produced water.</p>

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	Waste Management Plan - AEUK/K/EA/WM-001 Rev 1, dated 01/08/2017 Site Condition Report – AEUK/K/EA/SCR-001 Rev 1, dated 01/08/2017 Flare Appraisal & Design – AEUK/K/EA/FAD-001 Rev 1, dated 01/08/2017 Environment Management System Manual – Issue 2, dated 27/04/17	30/08/17
	Letter dated 26/09/17 subject: Mining Waste Permit Application, ref: MCD/AEUK/K/EA/001	26/09/17
	Environmental Risk Assessment – AEUK/K/EA/ERA-001 Rev 2, dated 11/12/2017	11/12/17

Table S1.3 Pre-operational measures	
Reference	Pre-operational measures
1	The operator shall provide the Environment Agency at least 7 days advance notice of intended date to flare in accordance with the Flare Appraisal & Design document referenced in Table S1.2, plus immediate notice of any change to schedule.

Schedule 2 – Waste types, raw materials and fuels

Non-extractive wastes are not accepted as part of the permitted activities and there are no restrictions on raw materials or fuels under this schedule.

Schedule 3 – Emissions and monitoring

Emission point ref. & location	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
A2 Gas flare as shown in site plan 2 at SE52088 23907	Oxides of Nitrogen (as NO ₂)	- (mg m ⁻³)	As requested by the Environment Agency	As per M2 or such subsequent guidance as may be agreed in writing with the Environment Agency
	Carbon monoxide	- (mg m ⁻³)	As requested by the Environment Agency	As per M2 or such subsequent guidance as may be agreed in writing with the Environment Agency
	Total volatile organic compounds (VOCs)	- (mg m ⁻³)	As requested by the Environment Agency	As per M2 or such subsequent guidance as may be agreed in writing with the Environment Agency
	Methane concentration in flare feed gas	- (% v/v)	Continuous	As approved in writing with the Environment Agency
	Flare gas feed rate	- (m ³ hr ⁻¹)	Continuous	As approved in writing, unless otherwise agreed with the Environment Agency
	Flare combustion temperature	>800 °C	Continuous	BS1044-4:1992

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
A2 Gas flare as shown in site plan 2 at SE 52088 23907	Flare gas feed rate	Continuous	As approved in writing with the Environment Agency	N/a
	Flare combustion temperature	Continuous	As approved in writing with Environment Agency and in accordance with BS1044-4:1992	N/a
	Start and end time run log of flare register for daily flaring operations	Continuous while in operation	As approved in writing with the Environment Agency	N/a

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1. Oxides of nitrogen. Carbon monoxide Total volatile compounds	A2 Gas flare as shown on site plan 2 at SE 52088 23907	As requested by the Environment Agency	Date of permit issue
Flare Temperature Gas feed rate Gas feed rate methane concentrate (%v/v)	A2 Gas flare as shown on site plan 2 at SE 52088 23907	Following the conclusion of flare testing	Date of permit issue
Flaring days register	A2 Gas flare as shown on site plan 2 at SE 52088 23907	Following the conclusion of the flare testing	Date of commencement of Activity A2
<p>The operator shall submit a written report for the management of Activity A2 (flaring) 1 month after the conclusion of the flaring activity in accordance with the Flare Appraisal & Design document referenced in Table S1.2, the report should include, but is not limited to:</p> <ul style="list-style-type: none"> • Continuous flow monitoring for 24 hours • Continuous combustion temperature monitoring for 24 hours • Start time hours run log and date stamped photo evidence • Stop time run hours log and date stamped photo evidence 			

Table S4.2 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY

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 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	
To be notified within 24 hours of detection	
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 limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

“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.

“approved waste management plan” means a plan of the type described in Article 5(1) of Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC, approved as part of the grant or variation of an environmental permit and as revised from time to time.

“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.

“emissions to land” includes emissions to groundwater.

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

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

“extractive waste” means waste resulting from the prospecting, extraction, treatment and storage of mineral resources and the working of quarries, excluding waste which does not directly result from these operations

“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.

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

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

“mining waste facility” means a waste facility as defined in Article 3(15) of Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC, where a mining waste operation is carried out.

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

“year” means calendar year ending 31 December.

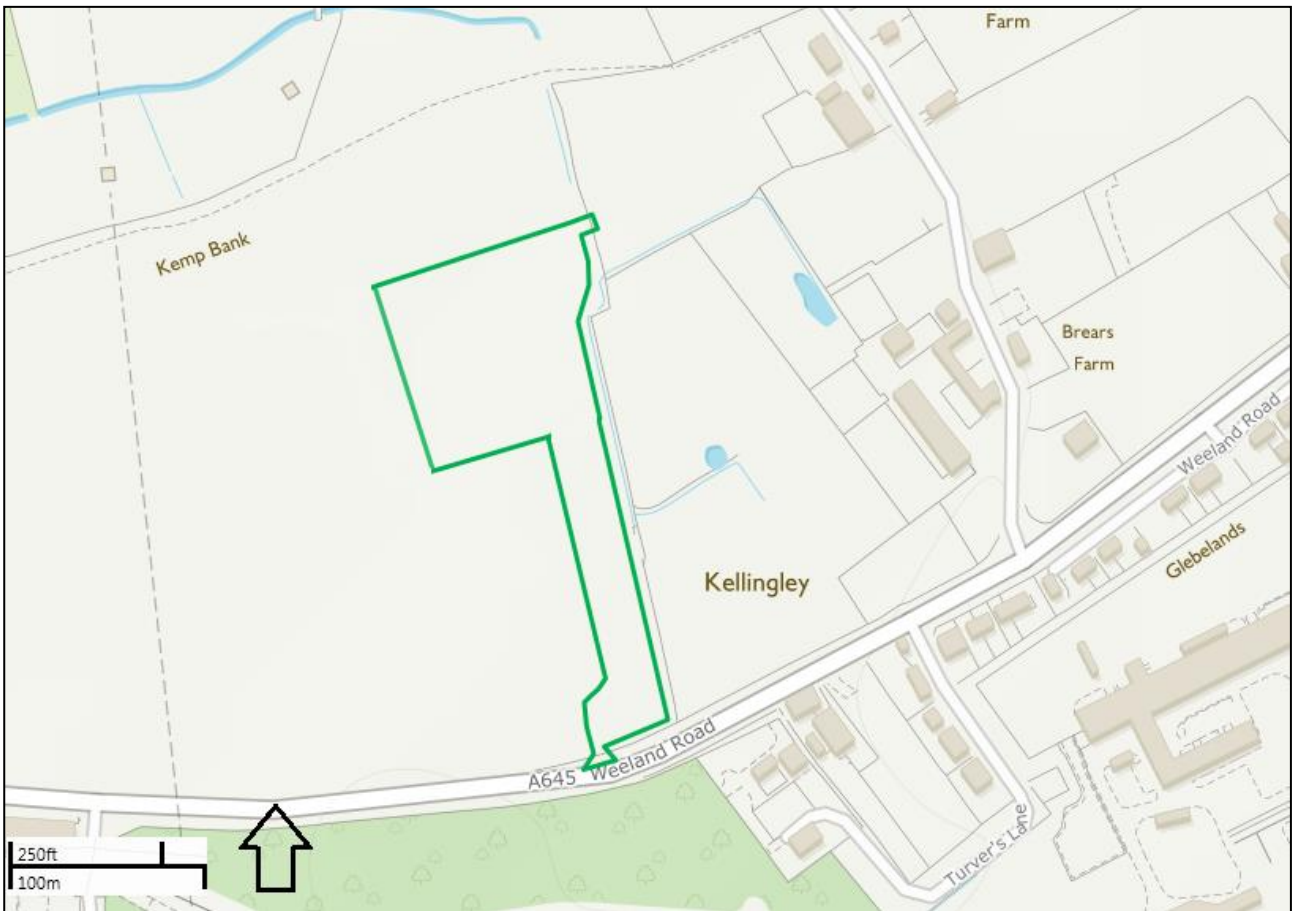
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

- 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
- 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.

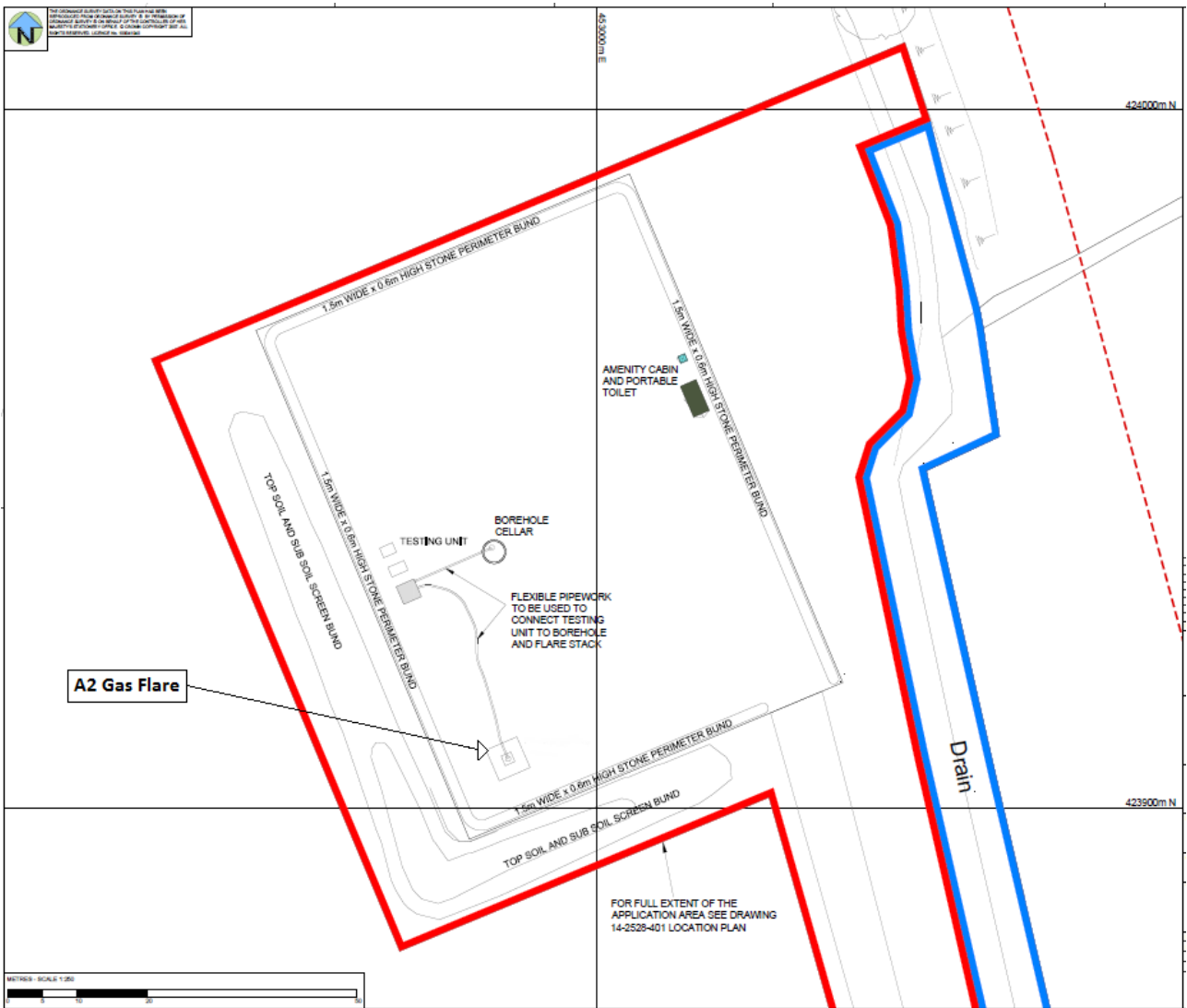
Schedule 7 – Site plans

Site plan 1



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Site plan 2



END OF PERMIT

Permit Number: FB3601XR

Operator: Alkane Energy UK Limited

Facility: Kellingley CMM site

Form Number: Air1 / 12/04/18

Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed

Date.....

(Authorised to sign as representative of Operator)