Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Rathlin Energy (UK) Limited

West Newton B Wellsite
Crook Lane
West Newton
East Riding of Yorkshire
HU11 4LP

Permit number

DB3503HL

West Newton B Wellsite
Permit number DB3503HL

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

The proposal by Rathlin Energy (UK) Limited includes the drilling of two exploratory boreholes into both the Cadeby formation and the Kirkham Abbey formation. This will be followed by a Drill Stem Test (DST) in these two formations. The exploratory operations will involve incinerating gas during the DST. The DST will be used to inform whether an Extended Well Test (EWT) programme will be required. An EWT is a longer duration test, which is carried out after putting a cement casing across the reservoir. The activities permitted in this permit do not include an EWT. In the event that the initial exploratory operations are successful, the Operator may wish to undertake an EWT, in which case the Operator will be required to make an application to vary this permit in accordance with the Environmental Permitting (England and Wales) Regulations 2010 as amended. Such an application will include submission of flare specifications that are most suited for the EWT.

During the DST waste gas of more than 10 tonnes per day will be flared. An acid wash and/or squeeze followed by the injection of liquid carbon dioxide will be carried out in both formations. The permit therefore covers the management of extractive mining waste and an installation activity for the flaring of more than 10 tonnes of gas per day. The permit also covers well abandonment, site closure and restoration.

This permit is a Tier 3 bespoke permit as defined by the Environmental Permitting Charging Scheme & Guidance

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/DB3503HL/A001	Duly made 15/09/15	Application for drilling two oil and gas exploratory boreholes.
Additional information received	30/10/15	Additional information on flare received.
Additional information received	11/12/15	Response on 1st Schedule 5 received.
		• Waste Management Plan Exploratory Operations
		• Drilling products Exploratory Operations
Additional information	07/01/16	Revised Site plan showing monitoring points
Additional information received	18/03/16	Response on 2nd Schedule 5 notice received.
		• Non-Technical Summary Exploratory Operations
		• Environmental Risk Assessment Exploratory Operations
		• Flare calculation methodology
Additional information received	30/03/16	Additional information on revised calculations on

Status log of the permit		
Description	**Date**	**Comments**
		modelled parameters of the flare
		• PW Well test modelled calculations on temperature, exit velocity, flame length and Noise
		• Revised flare calculations
Additional information received	13/04/16	Revised Waste Management Plan (Revision4) containing updates on: • Air Dispersion Modelling and report • Odour Management plan • Noise impact Assessment • Flare Specification documents for drill stem test only
		Revised Non Technical Summary
Additional information received	25/04/16	Well test operation using flare work instruction
Additional information received	24/06/16	Interceptor discharge and drainage layout plan
		Drainage design manual
Additional information received	30/06/16	Revised interceptor discharge and drainage layout plan
		Revised environmental monitoring plan
Permit determined EPR/DB3503HL	26/07/2016	Permit issued to Rathlin Energy (UK) Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

DB3503HL

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

Rathlin Energy (UK) Limited ("the operator"),

whose registered office is

20-22 Bedford Row
London
WCR1R 4JS

company registration number 06478035

to operate an installation, a mining waste operation and a water discharge activity at

West Newton B Wellsite
Crook Lane
West Newton
East Riding of Yorkshire
HU11 4LP

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

Name	Date
Permitting Team Leader **National Permitting Services**	**26/07/2016**

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 There shall be no incineration of hazardous extractive waste until the measures specified in PO1 and PO2 of schedule 1 table S1.3 have been completed and the operator has received written approval from the Environment Agency.

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 S3.3.

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

3.1.3 Subject to any other condition of this permit, 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 systemic approach 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;

(b) groundwater specified in table S3.2;

(c) surface water monitoring specified in tables S3.3; S3.4 and S3.5

(d) ambient air monitoring specified in table S3.6;

(e) process monitoring specified in table S3.7.

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 The operator shall carry out:

(a) regular calibration, at an appropriate frequency, of systems and equipment provided for carrying out any monitoring and measurements necessary to determine compliance with these conditions; and

(b) regular checking, at an appropriate frequency, that such systems and equipment are serviceable and correctly used.

3.5.4 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.

3.5.5 If required by the Environment Agency, the operator shall

(a) take such samples and conduct such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, at such times and using such methods and equipment as the Environment Agency may reasonably specify and

(b) keep samples, provide samples, or dispatch samples for tests at a laboratory, as the Environment Agency reasonably specifies, and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written confirmation that testing and repackaging in accordance with the relevant legislation are complete.

Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2, S3.3, S3.4 and S3.5 unless otherwise agreed in writing by the Environment Agency.

3.5.6 The operator shall, prior to, or on commencement of flaring, and monthly thereafter; analyse the flare feed gas. The analysis shall include oxides of nitrogen, carbon monoxide, carbon dioxide, total volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, M- and P- xylene, O- xylene, hydrogen sulphide, hydrocarbons C1 to C15. A report of this analysis shall be submitted to the Environment Agency within 28 days of completion of the analysis.

3.5.7 The operator shall by calculation determine the emissions of the substances identified in table S3.1, based on the most recent feed gas composition analysis, feed gas flow rate and combustion efficiency of the flare.

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 (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 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:

(c) any change in the operator's name or address; and

(d) any steps taken with a view to the dissolution of the operator.

In any other case:

(e) the death of any of the named operators (where the operator consists of more than one named individual);

(f) any change in the operator's name(s) or address(es); and

(g) 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.

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

4.4 Interpretation

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

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “without delay”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 Activities		
Activity reference	**Description of activities for waste operations**	**Limits of activities**
A1 Mining waste operation	A mining waste operation for the management of extractive waste from prospecting for mineral resources, not involving a waste facility. The management of extractive waste generated by well abandonment.	Permitted waste types shall conform to the description in the approved Waste Management Plan. The activities shall be limited to the following extractive waste types – water based drilling muds, drill cuttings, excess solidified cement, formation water, clays and sand, spent hydrochloric acid and calcium chloride, natural gas, nitrogen and carbon dioxide. The activities shall be limited to those described in the approved Waste Management Plan RE-05-EPRA-West Newton B – Waste Management Plan Rev 4 dated 13/04/2016. Drilling additives shall be approved in writing by the Environment Agency prior to use. The activities shall be limited to waste arising from the prospecting for oil and/or gas, including well stimulation. 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.
A2 Gas flare	Schedule 1 section 5.1 (a) The incineration of hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 10 tonnes per day as listed in Schedule 1 section 5.1 (a) of the EP Regulations	Limited to flaring of waste gas from onshore oil and gas exploration activities, produced from drill stem testing activities using a shrouded ground flare. Flaring of gas shall be limited to drill stem testing activities only and will not include extended well testing activities Flaring of gas shall be limited to a maximum gas input of 2790 Nm^3/hour reference conditions 273K and 101.3 kPa The procedure for operating the flare shall conform to that described in the document “Well test operation using flare work instruction” referenced RE-04-032 and dated 25/04/2016. Thereafter gas can only be flared where it is necessary to do so either as a safety measure or due to maintenance of surface equipment, unless otherwise approved in writing by the Environment Agency. There shall be no venting except where it is necessary for safety reasons.

A3 Surface water activity	Discharge of rainfall dependent surface water run off via a discharge point	The discharge shall be made via a Class 1 SPEL oil-water separator designed, manufactured and maintained according to European Standard BS EN 858-1 to surface water. The discharge points shall be limited to those described in table S3.4 No discharge shall take place when potentially polluting substances are stored on site (with the exception of fuel stored as part of trailer mounted water sampling equipment and fuel stored to enable power supply to the site). No discharge shall take place when mining waste or fuels are stored on site (with the exception of fuel stored as part of trailer mounted water sampling equipment and fuel stored to enable power supply to the site). No discharge shall take place when well drilling, workover, testing or completion activities are taking place on site. The discharge shall be managed as described in the operating technique Surface Water Management Plan referenced in table S1.2.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Non Technical Summary	03 EPRA – West Newton B – Non technical Summary Rev 4	13/04/2015
Waste Management Plan Exploratory Operations	05 EPRA – West Newton B – Waste Management Plan Rev 4 including the following appendices • Appendix 2 - Rathlin Energy Environmental Policy Manual • Appendix 3 - Roles and responsibilities • Appendix 4 - Chemical inventory during exploratory operations • Appendix 5 - Air dispersion modelling and report • Appendix 6 - Odour Management Plan • Appendix 7 - Noise Impact Assessment • Appendix 8 - Flare specification documents for drill stem test only	13/04/2016
Site Condition Report	Site Condition Report RE-05-EPRA-WNB-SCR-006 submitted in response to Schedule 5 notice issued	11/12/2015
Surface Water Management Plan	Site Condition Report RE-05-EPRA-WNB-SCR-006 Appendix 2 Surface Water Management Plan (excluding the discharge point)	08/09/2015
Interceptor Discharge Plan	RE-05-EPRA-WNB-SP-004-03 interceptor Discharge Plan 1000scale Rev 1 3	30/06/2016
Polypipe drainage design and installation manual	Design and installation manual. Ridgidrain, ridgisewer, polysewer	23/06/2016
Groundwater Monitoring Strategy	Site Condition Report RE-05-EPRA-WNB-SCR-006 Appendix 3 Groundwater Monitoring Strategy	11/12/2015
Environmental Risk Assessment	All parts. Environmental Risk Assessment. RE-05-EPRA-WNB-ERA-007	11/12/15
Drilling Products Exploratory Operations	All parts, RE-05-EPRA-009	18/03/16
Well Test Operations using Flare Work Instruction	Well Test Operations using Flare Work Instruction RE-04-032	25/04/2016
Environment Monitoring Plan	RE-05-EPRA-WNB-SP-004-05 (Env Monitoring plan 1000scale)	30/06/2016
Environment Management and Monitoring Plan (EMMP) as approved under PO 1	All	Date of approval of PO 1

Table S1.3 Pre-operational measures	
PO 1	At least 4 weeks prior to commencement of the gas flaring activity the operator shall submit to the Environment Agency for approval a written Environmental Management and Monitoring Plan (EMMP) which will include, but is not limited to: • details of the baseline air quality study undertaken prior to activities commencing; • details of the ambient air monitoring programme proposed for during and after the period of gas flaring; and shall obtain the Environment Agency's written approval to the EMMP.
PO 2	The Operator shall provide for approval a method for calculating the emissions from the flare as required by condition 3.5.7.and obtain the Environment Agency's written approval to the method.
PO 3	At least 2 weeks prior to commencement of permitted activities the operator shall submit to the Environment Agency a report that details the as built monitoring borehole designs and describes the baseline groundwater quality sampling for the site. The chemical sampling suite presented in Table S3.2 of this permit shall be used for the baseline groundwater quality sampling programme.

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 fuel under this schedule

Table S3.1 Point source emissions to air – emission limits and monitoring requirements				
Emission point ref. & location	**Parameter**	**Limit (including unit)**	**Monitoring frequency**	**Monitoring standard or method**
A1 gas flare as shown on site plan in Schedule	Oxides of nitrogen	-	Monthly	As approved in writing with the Environment Agency in accordance with PO2
	Carbon monoxide	-	Monthly	As approved in writing with the Environment Agency in accordance with PO2
	Carbon dioxide	-	Monthly	As approved in writing with the Environment Agency in accordance with PO2
	Total volatile organic compounds (VOCs)	-	Monthly	As approved in writing with the Environment Agency in accordance with PO2
	Methane concentration in flare feed gas	-	Prior to or on commencement of flaring and monthly thereafter	As approved in writing with the Environment Agency
	Flare gas feed rate	2790 Nm^3/hour reference conditions 273K and 101.3 kPa	Continuous	As approved in writing with the Environment Agency
	Flare combustion temperature	-	Continuous	BS 1041-4:1992

Table S3.2 Groundwater monitoring requirements				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Groundwater monitoring borehole 1 and borehole 2 as shown on site plan in Schedule 7	Mercury and its compounds expressed as mercury (Total Hg)	a) Prior to commencement of any operations: sample once every 4 weeks; b) During periods of testing: sample once every 4 weeks with first sample collected on the eve of testing; c) Outside of testing: sample once every 3 months unless otherwise agreed in writing with the Environment Agency	BS ISO 5667 and condition 3.5.4	
	Cadmium and its compounds expressed as cadmium (Total Cd)			
	pH			
	BOD			
	Inorganic determinants Turbidity, Total Suspended Solids, Alkalinity, Hardness, Sulphate, Chloride, Nitrate, Calcium, Magnesium, Potassium, Sodium, Iron and Manganese			
	Organic determinants BTEX including MTBE by GC/MS, Total Petroleum hydrocarbons (speciated TPH Working Group criteria (UK) aromatic and aliphatic banding) and Methane			
	Groundwater level			

Table S3.3 Point Source emissions to water (other than sewer) and land – emissions and monitoring requirements						
Location or description of point of measurement	**Parameter**	**Limit (including unit)**	**Reference**	**Limit of effective range**	**Monitoring frequency**	**Compliance statistic**
Discharge to surface water of trade effluent consisting of rainfall dependent surface water run off	Visible oil and/or grease	No significant trace present so far as is reasonably practicable	Instantaneous (visual examination)	Visual examination	Whenever a discharge occurs	No significant trace

Table S3.4 Discharge point			
Location or description of point of measurement	**Discharge point**	**Discharge point NGR**	**Receiving water/ Environment**
Trade effluent consisting of rainfall dependent surface water run off	Wellsite discharge location shown on Interceptor discharge plan RE-05-SDWNB-EPR-003 Rev 1 dated 23/06/2016	TA 20382 37235	Drainage pipe
	Surface water discharge location shown on Interceptor discharge plan RE-05-SDWNB-EPR-003 Rev 1 dated 23/06/2016	TA 20351 37482	L Dyke

Table S3.5 Monitoring Point			
Location or description of point of measurement	**Monitoring type**	**Monitoring point NGR**	**Monitoring point reference**
Trade effluent consisting of rainfall dependent surface water run off	Effluent sampling	TA 20383 37227	‘Effluent sample point’ as shown on site plan in Schedule 7.

Table S3.6 Ambient air monitoring requirements				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Locations specified in Agreed EMMP specified in table S1.2	Parameters specified in approved EMMP specified in table S1.2	Frequencies specified in approved EMMP specified in table S1.2	In accordance with condition 3.5.1 and EMMP specified in table S1.2	Locations specified in Agreed EMMP specified in table S1.2

Table S3.7 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Gas flare	Flare gas feed rate	Continuous	As approved in writing with the Environment Agency.	N/A
Gas flare	Flare combustion temperature	Continuous	BS 1041- 4:1992	N/A
Gas flare	Video feed with a screen time display of flare	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**
The following emissions to air parameters as required by condition 3.5.1 Oxides of Nitrogen Carbon Monoxide Total volatile organic compounds including methane	Gas flare	Within 1 month of commencing flaring and then every month thereafter until cessation of flaring activities	Date of permit issue
Flare temperature	Gas flare	As required by the Environment Agency	Date of permit issue
Video feed of flare during operations	Gas flare	As required by the Environment Agency	Date of permit issue
Ambient air monitoring Parameters as required by condition 3.5.1	4 monitoring locations marked on site plan in schedule 7	Every 6 months	Date of permit issue
Groundwater monitoring	Groundwater monitoring borehole 1 and borehole 2 as shown on site plan in Schedule 7	As set out in Table S3.2 under monitoring frequency	Date of permit issue
Table S1.2 – Parameters as listed in the operating technique Surface Water Management Plan	As listed in the operating technique – Surface Water Management Plan	Quarterly Report to be submitted within 28 days	1 January, 1 April, 1 July, 1 October

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	26/07/2016
Groundwater quality and level	Form Groundwater 1 or other form as agreed in writing by the Environment Agency	26/07/2016
Parameters as listed in the operating technique Surface Water Management Plan specified in Table S1.2	Form as agreed in writing by the Environment Agency	Date of agreement
Visible oil or grease as specified in Table S3.3	Form as agreed in writing by the Environment Agency	Date of agreement
Other performance indicator	Form as agreed in writing by the Environment Agency	Date of agreement

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	**EPR/DB3503HL**
Name of operator	**Rathlin Energy (UK) Limited**
Location of Facility	**West Newton B Wellsite, Crook Lane. West Newton East Riding of Yorkshire, HU11 4LP**
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.

"Annex I" means Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

"Annex II" means Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

"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.

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

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations

"*exploration*" means activities carried out to provide information about geological structures and the presence or absence of gas reserves together with assessments to determine whether the reservoir development is economically feasible.

"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

"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.

"prospecting" means prospecting as defined by article 3(21) of the Mining Waste Directive as 'the search for mineral deposits of economic value, including sampling, bulk sampling, drilling and trenching, but excluding any works required for the development of such deposits, and any activities directly associated with an extractive operation.

"year" means calendar year ending 31 December.

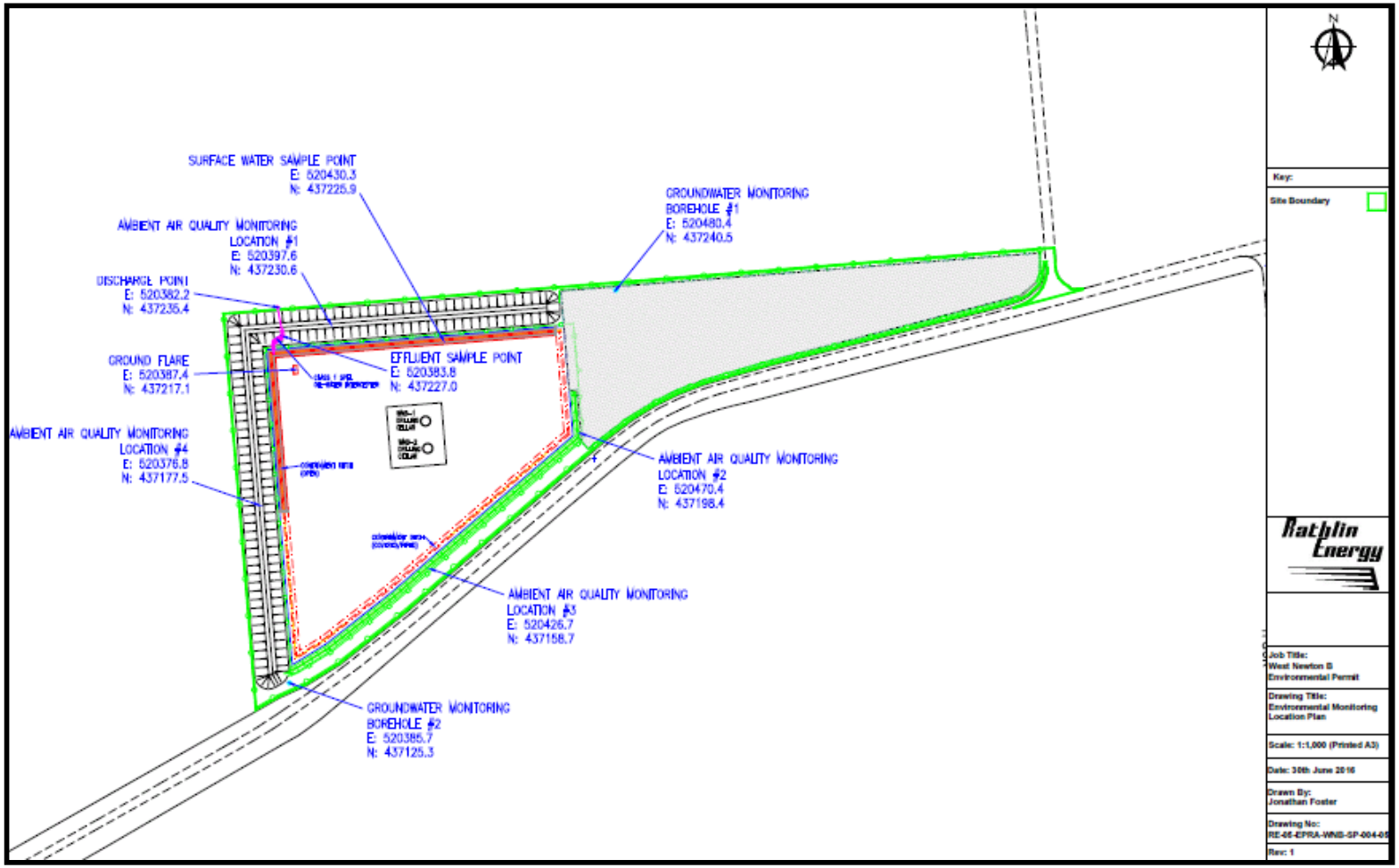
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

(a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

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 plan



END OF PERMIT

Permit Number: EPR/DB3503HL **Operator**: Rathlin Energy (UK) Limited

Facility : West Newton B Well site **Form Number**: Air1/26/07/2016

Reporting of emissions to air for the period from dd/mm/year to dd/mm/year

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
	Oxides of nitrogen (NO and NO_2 expressed as NO_2)						
	Carbon monoxide						
	VOC as Total Organic Carbon (TOC)						
	Flare temperature						

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.
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.
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.
The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed …….. Date……..
(Authorised to sign as representative of Operator)

Permit Number: EPR/DB3503HL **Operator**: Rathlin Energy (UK) Limited

Facility : West Newton B Well site **Form Number**: Groundwater1 26/07/2016

Reporting of groundwater monitoring for the period from dd/mm/year to dd/mm/year

Monitoring Point (as agreed under pre-operational condition 2.4.1)	**Substance / Parameter (as listed in table S3.2)**	**Trigger level** (To be determined and agreed following submission and review of baseline groundwater quality data required under pre-operational condition 2.4.1.)	**Reference Period**	**Result** [1]	**Test Method** [2]	**Sample Date and Times** [3]	**Uncertainty** [4]

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.

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.

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.

The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed …….. Date……..

(Authorised to sign as representative of Operator)

Permit Number: EPR/DB3503HL **Operator**: Rathlin Energy (UK) Limited

Facility : West Newton well site **Form Number**: Perfomance1 26/07/2016

Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY

Parameter	Unit

Operator's comments

Signed…… Date……

(Authorised to sign as representative of Operator)