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# SCREENING REQUEST

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VIKING UK GAS  
LIMITED

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SCROGGY WELLSITE,  
STONEGRAVE,  
NORTH YORKSHIRE

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AUGUST 2013

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## 1. INTRODUCTION

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### 1.1 THE APPLICANT

Viking UK Gas Limited (the “Applicant”) is the operator of gas fields within the Ryedale area and, at the time of submitting this application, holds interests in a total of six (6) Petroleum Licences and one (1) Petroleum Appraisal Licence, granted by the Secretary of State at the Department of Energy and Climate Change (DECC). Under the Petroleum Licensing system this permits the licence holder to ‘*search, bore and get petroleum within the licence boundary*’ subject to the granting of planning permission, in accordance with the Town and County Planning Act 1990.

Many of the Ryedale gas fields were originally discovered by Taylor Woodrow Exploration Limited and subsequently developed by Kelt UK Limited. Kelt sold its interest in the Ryedale Gas Fields to Tullow Oil and Edinburgh Oil and Gas. Tullow Oil went on to acquire the interest held by Edinburgh Oil and Gas. The Applicant acquired the interests of the Ryedale Gas Fields from Tullow in 2003 and has subsequently undertaken an active drilling and workover programme to enhance production of gas from the gas fields located at Kirby Misperton, Pickering, Marishes and Malton.

The Applicant also holds a number of exploration licences and has previously constructed and drilled wells at Ebberston Moor, within the North York Moors National Park.

Petroleum Safety Services Limited is an independent company providing planning services and safety supervision to the petroleum industry. Petroleum Safety Services is working on behalf of the Applicant and is responsible for planning and designing projects and obtaining the necessary permissions.

### 1.2 SCREENING REQUEST

The Applicant is requesting a screening opinion from North Yorkshire County Council (Minerals Planning Authority) under Section 5 of the Town and Country Planning (Environmental Impact Assessment) Regulation 2011.

To enable the Minerals Planning Authority (MPA) to provide a screening opinion, the Applicant has included the following in accordance with the regulations:

- (a) A plan sufficient to identify the land;*
- (b) A brief description of the nature and purpose of the development and of its possible effects on the environment; and*
- (c) Such other information or representations as the person making the request may wish to provide or make.*

This document contains information for the MPA to provide a screening opinion for this proposal, in accordance with Section 5 of the Town and Country Planning (Environmental Impact Assessment) Regulation 2011.

### 1.3 THE PROPOSAL

The Applicant is proposing to construct the Scroggy Well site to accommodate the drilling of up to two (2) petroleum exploration boreholes followed by testing.

The development will consist of four principal phases:

- Site Construction
- Drilling
- Well Test
- Site Restoration

Each borehole will be tested for its potential to produce commercial quantities of petroleum. If drilling is unsuccessful in proving commercial viability, then the borehole(s) will be abandoned in accordance with Oil and Gas UK guidance and the site restored.

Further details on the development are included in Chapter 2 of this document.

### 1.4 THE PETROLEUM LICENSING SYSTEM

Ownership of the petroleum resources of the nation is vested in the Crown and the right to explore for and produce petroleum is controlled by DECC, under a licensing system. Companies are granted a Petroleum Exploration and Development Licence (PEDL) under the Petroleum (Production) (Landward Areas) Regulations 1995. Older licences were issued depending on whether the licence was exploration, appraisal or development. These licences are gradually being replaced with the single PEDL licence when older licences are relinquished by the licence holder. This licence grants the licensee the exclusive right “to search and bore for and get petroleum within the licence boundary”. The Applicant has acquired the right to operate under Production Licence (PL) 079.

### 1.5 THE NEED FOR PETROLEUM DEVELOPMENT

The UK is heavily reliant on obtaining energy from fossil fuels and this will continue for a number of years. Oil and gas from the UK currently supplies 60% of the UK's energy needs<sup>1</sup>. The North Sea oil fields are gradually depleting, having peaked in 1999. Therefore, it is imperative that this supply is maintained and additional reserves of oil and gas are found. As a result of the need for more reliable and secure sources of oil and gas, the exploration and development of onshore prospects is of ever increasing importance, to ensure the continued growth of UK energy supply and security.

In 2004 the UK became a net importer of oil and gas for the first time; this has continued with increasing demand. The UK is currently importing 8% of oil and 32% of gas. It is estimated that by 2020, import dependence will increase to 45 – 60% for oil and 70% or more for gas<sup>2</sup>. These significant increases in demand are also being seen in many other countries, consequently, there will be continued demand for mineral resources in the future.

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<sup>1</sup> DECC, 2011, Oil and Gas, [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/oil\\_gas/oil\\_gas.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/oil_gas/oil_gas.aspx),

<sup>2</sup> DECC, 2010, Annual Energy Statement - DECC Departmental Memorandum, DECC, London

In 2007 the Energy White Paper was produced, which highlighted the significant demand for oil and gas and how this will meet the UK's requirements for the foreseeable future<sup>3</sup>. It highlights that the majority of demand for petroleum reserves is from the transport sector in the UK. In addition, it highlights that fossil fuels are to be supported by appropriate Government policies to ensure a continuous supply and to maintain competitiveness.

The UK wishes to ensure security of supply by exploring for indigenous oil and gas reserves both onshore and offshore, where they can be exploited in a safe and sensitive manner having regard to the environment. This was highlighted in the recent National Policy Statement for Energy. If the UK does not maintain security of supply it will become more susceptible to fluctuations in price and demand volatilities. Many of the countries which produce significant quantities of petroleum are politically unstable. Therefore, there is an increasing risk that geopolitical interference could impact on the UK when trying to ensure demand is met.

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<sup>3</sup> DTI, 2007, Energy White Paper,

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## 2. SITE LOCATION AND DESCRIPTION

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The proposed Scroggy Wellsite is located within open countryside in the county of North Yorkshire, in the District of Ryedale and within the Parish of Stonegrave. National Grid Reference is SE 673775 (Easting 4673, Northing 44775) and the site is approximately 33m Above Ordnance Datum (AOD). The site is currently in agricultural use (arable). The southern boundary is formed by a shelter belt of trees, to the east a hedgerow and to the north and west there are no immediate boundaries as the site is located within an agricultural field. The nearest residential property is Caulkleys Grange which lies some 500m to the north west of the site. The site access will be along a farm track for a distance of 110m before joining the public highway close to the junction of The Avenue with the B1257 (Malton to Helmsley Road).

The site lies just within the boundary of the Howardian Hills Area of Outstanding Natural Beauty (AONB). The primary objective of the designation is the conservation and enhancement of the natural beauty of the AONB including the protection of flora and fauna as well as landscape features. Development proposals in AONB's are subject to particular scrutiny to ensure that harm will not be caused to the visual quality and essential characteristics of the AONB.

The proposed development is for petroleum exploration and as such is temporary. The temporary nature of the proposals will not have a lasting impact on the AONB. In addition the wellsite is located in a valley bottom to the north of an established coniferous and deciduous mixed plantation limiting views to the site from the south. The proposed wellsite is set against the backdrop of Caulkleys Bank limiting views from the north.

The area is designated as a Nitrate Vulnerable Zone (NVZ). NVZ's were set up under European Council Directive 91/676/EEC and have been established in areas where nitrate from agricultural land is causing, or could cause, pollution of the water environment. Whilst an agricultural restriction, the Applicant is aware of the designation and any planning application submitted for the site will be accompanied by a hydrogeological risk assessment to ensure water protection is fully taken into account. The site has no other local or national environmental designation.

There are no identified local or national heritage assets within the site boundaries, the nearest Conservation Areas are Nunnington to the north (not visible from the site) and Hovingham to the south (again not visible from the site). The villages of Stonegrave, Hovingham and Nunnington all contain several listed buildings, however, there is not anticipated to be any adverse impact on the character or setting of these heritage assets.

There are no known archaeological remains in the vicinity of the proposed site, however any planning application will be accompanied by a desk based archaeological assessment.

There are no known sites of ecological importance on the proposed site. Two Sites of Importance for Nature Conservation (SINC's) are located approximately 400m to the North of the site. It is considered that the proposed wellsite will be unlikely to have any adverse impact on these sites, however any planning application submitted will be accompanied by a base line ecological assessment.

No public rights of way are affected by the proposed development.

The site is not within an identified Flood Risk Zone.

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## 3. THE DEVELOPMENT

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The development consists of four principal phases, they are:

1. Site Construction
2. Drilling
3. Well Test
4. Site Restoration

The following chapter provides a summary of the proposed development.

### 3.1 SITE AND CELLAR CONSTRUCTION

To accommodate the drilling of the wells within the proposed Scroggy Wellsite, careful ground preparation and protection works must be undertaken. The site has been designed such that it minimises the area of agricultural land required, with the site area amounting to approximately 1 hectare.

#### 3.1.1 Preparation

Initial preparation of the site requires the removal of topsoil, which will be carefully rolled back and stored in a screening bund on the northern boundary of the site. Subsoil will then be excavated to a depth required to achieve a level site, this will require a degree of cut and fill. Any excess subsoil will be stored in a screening bund on the northern boundary of the site. The removal and storage of topsoil and subsoil will be undertaken in accordance with best practice guidance and will be minimised as far as is reasonably practicable. To undertake this work, a range of typical construction vehicles will be required including an excavator, dumper truck, grader and a compactor.

Once the site is level a drainage ditch will be excavated around the perimeter of the wellsite, which will form part of the wellsite's environmental risk mitigation strategy (see Section 2.1.3).

#### 3.1.2 Cellar and Conductor

Within the centre of the site, two cellars will be constructed. This forms a containment area from which the exploration boreholes(s) can be drilled, whilst also housing the wellhead. The cellar is constructed from pre-cast concrete rings, approximately 2700mm nominal diameter. An impermeable membrane is incorporated into the cellar construction to maintain the integrity of the site.

Upon completion of the site construction and prior to the start of the drilling operations, a conductor casing will be set in the top section of the well bore. The top section will be drilled with a geotechnical drilling rig. This section is typically drilled with air and/or water.

#### 3.1.3 Liner, Drainage and Working Surface

Once the site is level, the perimeter drain has been excavated and the drilling cellars constructed, an impermeable membrane will be laid across the whole wellsite, including the perimeter ditch, and heat welded to ensure integrity. The membrane is similar to the liners

used for landfills and is typically made from High Density Polyethylene. It provides an environmental barrier between site operations and the underlying subsoils. In the unlikely event of a spill, the contents of the spill percolate through the site stone onto the impermeable membrane, where it migrates outwards to the perimeter ditch for subsequent collection and disposal at a licenced waste facility.

The impermeable membrane is protected by two layers of non-woven geotextile matting, one is laid under the membrane to protect against damage from the subsoil and a second layer is laid above the membrane to protect against damage from the site surfacing.

Site surfacing is MOT Type 1 granular sub base aggregate, which is constructed to a thickness of approximately 300mm, the depth of which is very much dependent on the shear and tensile strength of the existing subsoils.

**3.1.4 Vehicle Movements and Personnel**

Site construction will be carried out over a period of six (6) weeks and will require approximately 10 personnel. A parking area will be made available onsite for all vehicles associated with the operations. The construction work would normally be carried out during the hours stated in **Table 1**.

Day	Time
Monday to Friday	07:00 to 18:00
Saturday	07:00 to 18:00
Sunday and Bank Holidays	N/A

**Table 1. Construction phase working hours**

Throughout the construction period, there will be a number of HGV movements associated with a typical construction operation. **Table 2** provides an estimate of the average number of vehicle movements per day, throughout the construction phase.

Vehicle	Single Movement
Car	5
HGV	6

**Table 2. Predicted vehicle movements per day during site construction**

**Scroggy Site Vehicle Routing**

HGV's and delivery vehicle travelling to the Scroggy wellsite will follow a specified route. This is likely to be detailed in a traffic management plan accompanying any planning application. The route is likely to be:

1. Travel along the B1257.
2. Approximately 1.5km to the east of Stonegrave turn north onto The Avenue.

3. After approximately 110m turn right on to the farm track.
4. Travel along the track for approximately 500m arrive at the entrance to the wellsite on the right hand side.

When exiting the site, the directions are the reverse of the above.

## 3.2 DRILLING

### 3.2.1 Mobilisation and Demobilisation

Once the site has been constructed, the drilling rig and associated equipment will be mobilised to the wellsite and rigged up. This will be performed over a period of up to two (2) weeks and depends very much upon the drilling rig selected. Appendix 3 provides images of similar facilities. The demobilisation will be the reverse of the mobilisation, which will occur on completion of the drilling operation and will take approximately one (1) week.

The operation will commence with the mobilisation of the drilling rig. To provide an indication of vehicle movements associated with a typical rig, details of the movements associated with the EDECO Rig 40 have been provided. Whilst at this stage the details of the drilling rig have not been determined, the vehicle movements are broadly similar for all rigs used for this type of development. There are typically 44 vehicle movements associated with the mobilisation of the EDECO Rig 40. Two cranes will also be required during the mobilisation and rig up, to erect the equipment on site.

### EDECO RIG 40 TRANSPORTATION LOADING

Description	Size (m)			Weight (kg)
	Length	Width	Height	
<b>Main Pump &amp; Tank Package</b>				
1 Water Tank	12.68	2.44	3.10	15000
2 Mud Tank No 1	12.75	3.19	3.15	23000
3 Mud Tank No 2 (suction)	11.75	3.24	3.70	23000
4 Mud Tank No 3	12.35	2.52	3.25	17000
5 Quant Suction & HP lines	12.20	2.44	1.25	10000
6 Mud Pump No 1	9.00	3.37	3.07	42000
7 Mud Pump No 2	9.00	3.30	3.03	42000
8 Mud Pump No 3	6.08	3.00	2.30	18000
9 Mud Pump No 1 Engine	10.44	2.83	2.96	22000
10 Mud Pump No 2 Engine	10.44	2.83	2.96	22000

11 Mud Pump No 3 Engine	7.48	2.43	2.98	18000
12 M/P Fuel Tank	6.04	2.44	2.44	10000
13 Pump spares store	12.18	2.44	2.60	20000
14 Charge pumps and suction pipes	12.00	2.44	1.50	15000
15 Shakers and stand	6.50	2.66	2.28	8000
<b>Generator &amp; SCR Package</b>				
16 SCR room No 1	11.73	3.10	3.16	27000
17 SCR No 2, Plug/ Switch Board	7.32	3.10	3.29	13000
18 Generator No 1 /Stores	12.54	2.94	3.21	25000
19 Generator No 2 / Stores	12.54	2.94	3.21	26000
20 Generator No 3 / Stores	12.54	2.94	3.21	23000
21 Toolhouse	12.54	2.44	2.58	20000
22 Gen F/ Tank & Koomy 2 x 20'	12.20	2.44	2.60	18000
<b>Main Drilling Rig Package</b>				
23 Matting (7) / BOP rails	12.20	2.44	1.50	18000
24 Cable / motor store	12.20	2.44	2.60	20000
25 Bottom Sub ODS (No Drilling line)	16.17	2.51	3.14	22000
26 Bottom Sub DS	16.17	2.51	3.14	22000
27 Top Sub ODS	11.85	2.90	3.16	20000
28 21.1/4" BOP / DB cooling unit	3.46	3.15	2.80	22000
29 Top Sub DS	11.85	2.90	3.16	16500
30 Sub Spreaders (5)	12.20	2.44	1.80	12000
31 Rotary Table/Skid/DC Skid	12.20	2.44	1.80	17000
32 Drawworks	7.00	2.70	2.75	24000
33 Windwall	12.24	2.51	3.07	13000
34 Doghouse	12.24	2.44	3.13	14000
35 Hydraulic Pipe Handler	19.00	3.17	2.36	20000

36 A Legs, Spreaders, Crown Stand	10.74	2.44	2.94	18000
37 Derrick Bottom Section	9.75	2.74	2.40	12000
38 Derrick Middle Section	9.30	2.29	2.29	7000
39 Derrick Crown Section	15.24	3.35	1.98	9000
40 Top Drive Power Pack (w/o cov)	12.10	2.90	2.99	22000
41 Top Drive & Torque Rail	6.00	2.44	2.60	12000
42 4 x Skidding rails	9.50	2.44	1.50	18000
43 Top Drive Fuel tank	6.07	2.44	2.41	4000
44 Required tubular				

In addition, approximately 16 vehicle loads will be required for office accommodation, drilling chemicals drilling logging unit etc.

This will be the main movement of the vehicles for the initial set up of the drill sites. The rig up of the unit also requires one 100 tonne crane and an 80 tonne crane.

### 3.2.2 Drilling Operation

The Applicant is proposing to drill up to two (2) boreholes at the Scroggy Well site. Both wells will be drilled directionally to intersect primary and secondary targets. The primary target will be the Permian Kirkham Abbey Formation (KAF) carbonates. The secondary targets are the Triassic Sherwood Sandstone, the Base Permian Closure and Carboniferous structures. The first well will be drilled to a total depth of approximately 5,199ft TVDGL (1585m). The second of the two boreholes is still under review, the details of which will be included in the planning application. A full geological description of the well will be included in the planning statement accompanying the planning application. It is anticipated that the drilling operations will be completed within six (6) to twelve (12) weeks per borehole. This timeframe is dependent on a number of factors, including progress through the different strata and whether petroleum is identified in the primary and secondary target zone. Once drilling starts, it is necessary for it to continue 24 hours a day. The drilling rig that would perform this work will not be determined until planning permission is sought and will be largely dependent on availability. The application, however, will provide details on the largest rig likely to be required to drill the borehole.

During drilling, a dense fluid known as “mud” is pumped down the inside of the drill string. The mud lubricates the drill bit and returns to surface bringing with it fragments of rock which are analysed to identify and correlate the strata through which the bit is passing. It also indicates the presence of any gas within any reservoir rocks encountered. An aspect of safety is provided by the hydrostatic weight of the column of mud providing primary pressure control, which is designed to exceed any underground pressures thereby containing them and maintaining the safety of the drilling operation. The rig is also fitted with valves known as “Blow Out Preventers” which act as secondary well control measures and can be closed immediately if an unexpected increase in pressure occurs.

At pre-determined stages in the drilling of a well, the walls of the borehole are supported by steel casing, which is cemented into place. This provides further safety measures by preventing the collapse of the borehole and the ingress of groundwater under pressure. It is essential that drilling continues throughout the day and night to sustain good hole condition and maintain control of the borehole for both safety and operational reasons.

### **3.2.3 Drill Stem Testing**

A Drill Stem Test (DST) is likely to be carried out with the drilling rig on site. A DST has the objective of confirming the existence of petroleum whilst also establishing flow characteristics from the reservoir. The DST will attempt to flow petroleum to surface, prior to setting a final string of casing. A drill stem test will be of short duration, typically up to a maximum of 12 hours of flow. Any gas produced during the DST will be burned off through a flare. In the event that gas is required to be vented then this will be kept to an absolute minimum and shall only be vented through a suitable scrubbing system to remove any odours associated with the gas.

### **3.2.4 Vehicle Movements and Personnel**

Once the drilling equipment has been mobilised to site there will be limited HGV movements during the operations. Additional light vehicle movements will be required for staff and rig crew changes, plus support service personnel. During the drilling operations, there may be up to 20 personnel on site.

Due to the nature of the drilling operations it is necessary to continue 24 hours a day, 7 days a week, to maintain well bore stability and permit safe operations.

## **3.3 WELL TEST**

If the drilling and preliminary testing provides positive results, the Applicant may wish to test the well in order to gain a greater understanding of the reservoir.

### **3.3.1 Well Test**

A well test may take place immediately after completing drilling operations, following removal of the drilling rig and associated equipment. The well test takes place after casing has been set across the productive reservoir, completion equipment installed in the well bore and the casing perforated across the reservoir to allow gas to flow. The completion equipment is connected to a string of production tubing, through which gas and fluids may flow to surface.

This phase of the operations will require well test equipment to be brought onsite and operated for up to twenty one (21) days. The objective is to provide additional data on the extent and quality of the reservoir, as well as providing samples of the produced fluid for detailed analysis. The well test will be performed 24 hours a day. Minimal equipment is required during a well test, principally separator tanks, pipe work and venting equipment. In addition, there will be some basic monitoring and control systems in place to allow the Applicant to monitor the operations and gather data.

Gas and fluids produced during the well test will, in the instance of oil, be pumped to a storage container on site, or gas, will be burned using a flare. In the event that gas is required to be vented then this will be kept to an absolute minimum and shall only be vented through a suitable scrubbing system to remove any odours associated with the gas.

**3.3.2 Vehicle Movements and Personnel**

The well test operation will typically be performed 12 hours, a day with personnel supervising the operations. On occasions certain tests will be required to run 24 hours with personnel onsite during this time. This allows the Applicant to undertake a number of different tests to establish the commerciality of the reservoir. Table 3 states the hours personnel will typically be onsite.

Day	Time
Monday to Friday	07:00 to 18:00
Saturday	07:00 to 18:00
Sunday and Bank Holidays	N/A

**Table 3. Testing phase working hours**

Vehicle movements during the EWT will be limited to deliveries of equipment necessary to perform and aid the well test and tankers removing any produced fluid. The Applicant has estimated the average number of vehicle movements per day during the EWT in **Table 4**.

Vehicle	Single Movement
Car	2
HGV	2

**Table 4. Predicted vehicle movements per day during EWT**

**3.4 EXTENT OF EXTERNAL LIGHTING AND DURATION**

At this stage full details of the lighting on the sites have yet to be determined. However to provide an indication of the lighting required for this type of the development the following details have been extracted from a recently submitted Lighting Management Plan (LMP) for a similar wellsite. A lighting management plan condition is usually attached to any planning consent for developments of this site.

Construction will be undertaken during the hours stated in Table 5. Lighting may be necessary if the work is carried out during the winter months when daylight hours are shorter. Should this occur, lighting is likely to be required at the start and end of each day.

Day	Start	Finish
Monday – Friday	07:00	18:00
Saturday	07:00	18:00
Sunday and Bank Holidays	N/A	N/A

**Table 5. Site Construction Hours**

The lighting required during these periods is discussed in more detail below, Table 6.

Light Source	Specification	Description
Lighting Towers	4 x 1000w Metal Halide Portable Lighting Towers	Mobile lighting towers will be positioned around the site and allow the main working area to be illuminated. Typically, lighting will only be required if construction commences during the winter months. When lighting is not required it will be switched off.

**Table 6. Lighting Equipment During Site Construction**

The drilling rig lighting details are based on Edeco Rig 40 and give an indication of the lighting likely to be required. Should an alternative drilling rig be selected then there may be slight differences which will be addressed in any lighting management plan. The drilling operation will be performed 24 hours a day, 7 days a week as highlighted in Table 7.

Day	Start	Finish
Monday – Friday	24 Hours a day	
Saturday		
Sunday and Bank Holidays		

**Table 7. Drilling Hours**

The lighting requirement during this period is discussed in Table 8.

Light Source	Specification	Description
Lighting Towers	4 x 1000w Metal Halide Portable Lighting Towers	Mobile lighting towers will be positioned around the site and allow the main working area to be illuminated. Lighting will be operational throughout low light and night time periods. When lighting is not required it will be switched off.
Rig Floor and Catwalk	400w Metal Halide Flood Light	These lights are positioned around the rig floor and on the end of the catwalk. These illuminate the primary working areas. All of the lights are downward facing.
Mud Tanks and Shakers	Twin 18w 4ft Fluorescent Light	These lights are located on top of the mud tanks and shakers and are intrinsically safe.
Derrick	Twin 18w 2ft Fluorescent Light	Fluorescent tubing lights will be positioned at intervals on the derrick and are intrinsically safe. The lights are positioned up to a maximum height of 47m. This lighting is necessary to permit the driller to observe the position of the travelling block.
Cabins	400w Metal Halide Flood Light	These are located on a number of the site cabins and provide lighting along the walkways between the cabins. All of these lights are downward facing.

**Table 8. Lighting Equipment during Drilling**

The Extended Well Test (EWT) will be performed 24 hours a day over a period of up to ninety (90) days. Typically personnel will only be required onsite during the hours detailed in Table 9; however, operatives may be required to perform 24 hour tests from time to time.

Day	Start	Finish
Monday – Friday	07:00	18:00
Saturday	07:00	18:00
Sunday and Bank Holidays	N/A	N/A

**Table 9. Extended Well Test Hours**

When personnel are required onsite 24 hours a day, lighting will be required to allow them to perform their work. This is discussed in more detail in Table 10.

Light Source	Specification	Description
Lighting Towers	4 x 1000w Metal Halide Portable Lighting Towers	Mobile lighting towers will be positioned around the site and allow the main working area to be illuminated. When lighting is not required it will be switched off.
Cabins	400w Metal Halide Flood Light	These are located on the site cabins and provide lighting along the walkways, between the cabins. The lights all face downwards.

**Table 10. Lighting Equipment During Extended Well Test**

Restoration will be the reverse of site construction, during the hours stated in Table 6.

Day	Start	Finish
Monday – Friday	07:00	18:00
Saturday	07:00	18:00
Sunday and Bank Holidays	N/A	N/A

**Table 11. Restoration Hours**

The lighting required during these periods is discussed in more detail below, Table 12.

Light Source	Specification	Description
Lighting Towers	1000w metal halide portable lighting towers	Mobile lighting towers will be positioned around the site and allow the main working area to be illuminated. Typically lighting will only be required if restoration commences during the winter months. When lighting is not required it will be switched off.

**Table 12. Lighting Equipment During Restoration**

To ensure the impacts of any lighting at the wellsite are managed and mitigated, a number of measures will be implemented. These are discussed in greater detail in the following sections.

Lighting will be located in key areas around the site where it is required. Tower lights will be positioned around the perimeter of the site and raised high and face downwards to reduce overspill. No lighting will be focused directly onto the public highway.

Screening will be used on site to limit any impacts arising from light spill, sky glow and visibility from local residencies. This will be achieved through the positioning of equipment onsite. Where possible, equipment will be positioned so as to provide screening.

In addition to the careful positioning of equipment on site, natural screening will also be provided by hedgerows, interspersed woodland and the local topography.

Any lighting will be directed to the areas required to ensure its efficient use. In addition, lighting will be downward facing to minimise any light spill. Typically this will be directed at an angle of approximately 70°, thereby reducing spill and glare.

Where appropriate, lighting baffles will be used to prevent light spilling outside of the site and glare onto the public highway. This will be reviewed during the set-up of each phase. In particular, lighting which spills onto the public highway will be prevented to ensure that road users are not affected.

During the Viking UK Gas operations, on-going monitoring of the effectiveness of the LMP will be performed by the Planning and HSE Manager. This will include audits to confirm compliance with the agreed LMP. Any non-conformances will be addressed and further action will be taken where deemed appropriate.

As part of Viking UK Gas's commitment to ensuring its operations do not impact on local residents, a community contact number will be provided. This will allow local residents to contact a member of the Viking UK Gas project team 24 hours a day. Any complaints received from local residents will be investigated and dealt with promptly.

### **3.5 NOISE**

The planning application will be accompanied by a noise impact assessment. As part of a planning application an assessment will be undertaken from the nearest noise sensitive properties. Background noise levels measured at these properties will be modelled against the average maximum sound power level of a typical drilling rig, which is 105 dB(A) to determine the anticipated noise levels during drilling operations at these locations. Day time construction activities will typically produce an Laeq (1 hour) contribution of 50dB(A), based on data from BS5228.

Night time noise levels in accordance with the National Planning Policy Framework are not anticipated to exceed Laeq (1 hour) contribution of 42dB(A) based on our experience with other existing wellsites, however the noise impact assessment provided in support of the planning application will demonstrate this. It is anticipated that as with other existing wellsites operated by our client that in consultation with the relevant Environmental Health Officer, noise monitoring measures will be put in place to demonstrate noise levels do not exceed the limits which are usually determined in planning conditions. In addition pre-application consultation has been undertaken with Steve Richmond Head of Environmental Health at Ryedale District Council. It is understood that North Yorkshire County Council was copied in on his response. It is emphasised that any minor impact on nearby properties will be temporary.

### **3.6 RESTORATION**

On completion of the operations, the Applicant will make a decision as to whether the reservoir is commercially viable. If a successful production test is achieved, further

development will be dependent on a planning application being submitted to the MPA for permission to produce petroleum.

If the well is not commercially viable, then it will be abandoned and the site restored to its existing condition. This will consist of three principle phases, detailed below.

### **Abandonment**

The well will be abandoned in accordance with industry best practice and Oil and Gas UK guidance. Mechanical plugs and cement plugs will be set in the well bore and within the steel casing. The casing will then be cut approximately 1.5 metres below ground level and a steel plate welded to the remaining casing stub.

### **Restoration**

The restoration phase will be the reverse of the construction phase. All equipment will be removed from the site and the area reinstated.

### **Aftercare**

An aftercare programme will be undertaken over a period of five years. This will ensure the successful restoration of the land to its previous condition.

## 4. ENVIRONMENTAL IMPACT ASSESSMENT

Under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (EIA Regulations), it is necessary for all developments to be screened. The Applicant is submitting a screening request for a proposed planning application under Section 5 of the above regulations.

The Applicant has considered the proposed development in relation to the regulations. The development does not fall under Schedule 1 of the EIA Regulations. The development may be considered under Schedule 2 of the EIA Regulations under Section 2 (d), which states:

*(d) Deep drillings, in particular—*

*(i) geothermal drilling;*

*(ii) drilling for the storage of nuclear waste material;*

*(iii) drilling for water supplies; with the exception of drillings for investigating the stability of the soil.*

*(i) In relation to any type of drilling, the area of the works exceeds 1 hectare; or*

*(ii) In relation to geothermal drilling and drilling for the storage of nuclear waste material, the drilling is within 100 metres of any controlled waters.*

*(e) Surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale.*

*The area of the development exceeds 0.5 hectare.*

Having considered the proposed workings and guidance, the proposed development will exceed 1 hectare in size, (site area including access track measures 1.3 hectares) it therefore falls to be considered under Schedule 2, but exceeds the threshold criteria against which the significance of the impact on the environment is judged. Exceeding the threshold level does not automatically trigger the need for an Environmental Statement, the test remains whether the development project by virtue of its nature, size or location is likely to have significant effects on the environment.

The site is located within an environmentally sensitive area as detailed in regulation 2(1) of the 2011 regulations, however the considerate siting of the wellsite will minimise any landscape impact with the use of natural screening. A landscape and visual assessment will accompany any planning application.

There are no residential properties within 500m of the site. The nearest residential property is Caulkleys Grange, located 500m to the north west of the site.

There are no unusually complex or hazardous environmental effects associated with the site.

In accordance with Schedule 3 of the regulations, the following must be considered:

- *Characteristics of development – taking into account aspects such as size, raw material usage, emissions and risk of accidents.*

- *Location of development – the environmental sensitivity of the areas likely to be affected including existing land uses and the capacity of the existing environment to ‘absorb’ the new development.*
- *Characteristics of the potential impact – in particular with regard to its extent, complexity, probability, duration and frequency, in relation to the characteristics and location of the development.*

The Planning Practice Guidance for Onshore Oil and Gas was published by the Department for Communities and Local Government in July 2013. With regard to Environmental Impact Assessment (EIA) the guidance states in Paragraph 53 that:-

*‘Applications for the exploratory and appraisal phases will fall under Schedule 2 to the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 if they exceed the applicable threshold or any part of the development is to be carried out in a sensitive area. An Environmental Impact Assessment is only required if the project is likely to have significant environmental effects.’*

The Guidance continues in Paragraph 54 stating:-

*‘Whilst all applications must be assessed on a case by case basis it is unlikely that an Environmental Impact Assessment will be required for exploratory drilling operations which do not involve hydraulic fracturing unless the well pad is located on a site which is unusually sensitive to limited disturbance occurring over the short period involved.’*

The material characteristics of this development are such that the Scroggy Wellsite requires minimal land take and the drilling of borehole(s) is of short duration. The Scroggy development will be carefully constructed to minimise visual impact with the use of topography and screen bunds. In accordance with industry best practice and legislation, waste will be managed in accordance with the “Waste Hierarchy”. This will ensure the careful management and control of resources as well as the safe disposal of waste by licensed waste carriers and disposal sites. Drilling of petroleum wells is a very carefully managed process. Prior to drilling the well, a great deal of time is spent planning the operations to minimise the risk of any incidents and to ensure there are contingencies in place, therefore any impact is considered negligible.

The proposed Scroggy Wellsite is located within an agricultural field, which is currently in arable use.

There are no European, national or local environmental designations on the site. Two Sites of Importance for Nature Conservation (SINC’s) are located approximately 400m to the North of the site. It is considered that the proposed wellsite will be unlikely to have any adverse impact on these sites, however any planning application submitted will be accompanied by a base line ecological assessment.

Initial survey work indicates that there is unlikely to be any adverse impact on heritage assets around the site as a result of the proposed development. There are no known archaeological remains on or in the immediate vicinity of the site. The nearest listed buildings are within the village of Stonegrave, approximately 1.3km to the west and are not visible from the site.

Petroleum exploration and production has been carried out in the UK for many years, including within Ryedale District. Practices and standards have been developed to minimise any impacts associated with the operations and to ensure safe standards, in accordance with industry best practice. As detailed within this screening request, the Applicant will ensure the appropriate mitigation of any significant impacts. The position of boreholes is carefully designed to ensure efficient use of space, to reduce land take and minimise, as far as possible, the environmental impact of the proposed development. Upon cessation of operations, the Scroggy Well site will be subject to a scheme of restoration and aftercare. It can therefore be assumed that with regard to the proposal there is a high degree of reversibility.

## 5. CONCLUSION

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This screening request has been submitted under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 to allow North Yorkshire County Council to provide a screening opinion.

Viking UK Gas Limited is proposing to construct a new wellsite, including the construction of two drilling cellars. They intend to directionally drill the boreholes, the first of which will be drilled to a total depth of approximately 5,199ft TVDGL (1585m) and to take between six (6) and eight (8) weeks to complete, dependant on the results of any findings and progress through the different strata. If there are positive results during the drilling then the Applicant will undertake a well test, during which they will flow gas to surface for a period of up to twenty one (21) days. This will allow the Applicant to gain a further understanding on the characteristics of the reservoir and evaluate its potential as a commercial prospect.

If at any stage the Applicant decides the prospect is not commercial, then a decision will be made to suspend or abandon the well(s) in accordance with industry best practice.

Minerals exploration and exploitation is limited by where it occurs and the extent of the prospect, but it must also take into consideration any environmental effects and locate the site within the least environmentally sensitive part. The UK Government supports the exploration of indigenous oil and gas reserves as it allows the country to maintain security of supply.

Having considered the proposals against the requirements and guidance contained in the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, the Applicant does not believe this proposal requires an EIA. However, it is recognised that any planning application would need to be supported by independent technical reports. The Applicant does not consider that the proposed Scroggy Wellsite constitutes a significant environmental impact requiring an accompanying Environmental Statement. The short temporary duration drilling operation provides for an overall short duration project and following cessation of operations the Scroggy site will be subject to a scheme of restoration and aftercare.

## APPENDIX 1 – SITE LOCATION

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## APPENDIX 2 – SITE LAYOUTS

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## APPENDIX 3 – PROVISIONAL DRILLING RIG

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EDECO Rig 40

