



Ebberston Moor 3

Statement in Support of Retention of Ebberston Moor 3
Wellsite, Cockmoor Road, Sawdon, Scarborough

July 2016

Third Energy UK Gas Limited

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1 Introduction

1.1 Overview

- 1.1 This Statement in Support accompanies a planning application to the North York Moors National Park Authority to retain the Ebberston Moor 3 wellsite for a further three years.
- 1.2 The wellsite is located in Wykeham Forest, to the north of Sawdon and south west of Hackness in the North York Moors National Park (SE 934 887). It is approximately 6 km north of the A170, the main road between Scarborough in the east and Thirsk in the west. Further details of the site location are provided in Chapter 2: Location and History of Ebberston Moor 3.
- 1.3 The wellsite was granted consent in 2012 as Decision NYM/2012/0475/FL in respect of proposed development for the purposes of permission for up to two temporary appraisal boreholes and associated plant, equipment including drilling rig (max height 49 metres) and access arrangements.
- 1.4 The wellsite was developed and the appraisal well (Ebberston Moor B1) drilled in Summer 2013.
- 1.5 An application for a material amendment of this consent was made in 2013 as Decision NYM/2013/0501/FL. This was for the purposes of variation of Condition 2 of NYM/2012/0475/FL to “amend Table 4 on page 37 of the Planning Statement and allow an increase in the number of HGV vehicles attending the site from 2 to 6”. This was due to unexpected water loss being experienced during drilling, requiring additional vehicles for water removal. A separate consent was granted in August 2013 to reflect this amendment, effectively replacing the original consent.
- 1.6 Condition 1 of the planning consent NYM/2013/0501/FL states the permission granted is valid for three years from the date of the permission. The development requires to be removed from the site before the consent expires and the site restored to its former condition before that date.
- 1.7 Third Energy UK Gas Limited wishes to apply for the retention of the wellsite while further assessment of the regional geology is undertaken. The application is not to carry out further drilling works on the site. Although only one of the two consented appraisal boreholes was drilled, this current application does not seek consent to drill the second. The appraisal well (Ebberston Moor B1) is suspended and the wellsite is safe and secure. Works would comprise solely maintenance of the site and visits to the well to ensure it is in safe condition, in line with Health and Safety regulations. At the end of the three year period, the well would be abandoned and the wellsite restored.

1.2 The Applicant

- 1.8 The Applicant (Third Energy UK Gas Limited – hereafter Third Energy) is based in Knapton, North Yorkshire with a headquarters in London. Third Energy is an independent company with a focus on gas appraisal and development both onshore and offshore. The assets of Third Energy are primarily located in the Ryedale gas field in the Vale of Pickering in North Yorkshire which has produced gas since the 1960s. They were acquired through the purchase of Viking UK Gas Limited and RGS Energy Services in 2011, and Third Energy now owns and operates

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100% of the assets. These assets include mature producing fields, undeveloped gas discoveries, pipelines and a gas gathering and power generation station, supplying power to the grid.

- 1.9 In total, Third Energy and its predecessor company in Yorkshire, Viking UK Gas Limited, have over 20 years of operations in the area. All drilling and operational works to date have been undertaken safely and with no adverse impact to the environment or communities.
- 1.10 Third Energy holds an interest in seven Petroleum Production Licences (PL), Development Licences (DL), Appraisal Licences (AL) and Petroleum Exploration and Development Licences (PEDL) (PL77, PL79, PL80 and PL81, DL5, AL6 and PEDL 177) all around North Yorkshire, granted by the Secretary of State at the Department of Energy and Climate Change (now the Oil and Gas Authority, part of the Department of Business, Energy and Industrial Strategy). These licensed areas cover the Kirby Misperton, Pickering, Marishes, Malton and Ebberston Moor/ Lockton (in which the application site is located) fields in Ryedale.
- 1.11 They were also offered two new areas in the 14th Round of awards in late 2015, one corresponding to an area just north of their existing PL77 and one further to the north around Middlesbrough.
- 1.12 In addition to their licenced areas, the Knapton Generating Station, owned and operated by Third Energy is a key asset. It was established in 1995, and is supplied from gas produced from Third Energy's licenced areas. It provides a source of power across North Yorkshire and is currently the largest generating station in the UK to use onshore produced gas, avoiding the need for locally produced gas to be fed into the National Transmission System. Since 1995 it has generated over 2,000,000 MWh of electricity with an excellent safety and environmental record. Should gas be produced in the future it would feed into the local gathering system and be transported to Knapton Generating Station. The generating station is currently consented by Ryedale District Council under consent 06/00609/73, to operate until May 2018. Third Energy intends to apply for planning consent, and update relevant environmental permits to continue operation beyond this date.
- 1.13 Since acquisition of the Ryedale gas field, Third Energy has undertaken an active drilling and workover programme to explore and enhance production of gas. Recently as part of this programme Third Energy was granted consent in May 2016 by North Yorkshire County Council (following permitting by the Environment Agency) to continue works at Kirby Misperton by stimulating an existing well by hydraulic fracturing. The company also has consent for the Ebberston Moor South development, in a joint venture with Moorland Energy, the licence holder for the adjacent PEDL which straddles the Ebberston Moor gas field. This development was to construct a new 14km pipeline to the Knapton Generating Station to transport gas produced from the existing well. A new well for water production and reinjection was also consented as part of the development in August 2015.
- 1.14 As part of this ongoing programme, Third Energy drilled the Ebberston Moor B1 well (and established the Ebberston Moor 3 wellsite) in 2013 under consent NYM/2012/0475/FL and NYM/2013/0501/FL. The history of this wellsite is provided at Section 2.4.

1.3 The Proposal

- 1.15 The extant consent for the wellsite requires the development to be removed from the site, and the site to be restored to its former condition, within three years of the date of the consent.
- 1.16 However, following the creation of Ebberston Moor 3 wellsite and drilling of the consented Ebberston Moor B1 appraisal well in 2013, Third Energy requires additional time to appraise the potential of the area around the wellsite for gas reserves and to pilot methods to increase gas recovery from existing wells. This appraisal will be informed by ongoing work in their PL77 licence and adjacent licences, as outlined in Section 3.2.
- 1.17 The proposed development is therefore to retain the existing Ebberston Moor 3 wellsite for an additional three years beyond the three years from the date of consent as permitted in NYM/2013/0501/FL. No further works other than maintenance of the wellsite are proposed. At the end of three years, the well would be plugged and abandoned and the site would be restored to a condition to allow appropriate continued management by the original landowner (in this case the Forestry Commission).
- 1.18 The need and justification for the proposed development is outlined in Section 3.2. A description of the proposal is given in Section 3.5.

1.4 The Petroleum Licensing System and Regulatory Framework

- 1.19 The proposed development does not involve additional drilling or creation of infrastructure for petroleum extraction. However, the Ebberston Moor 3 wellsite was established for the purpose of appraising gas reserves, and potentially for the future production of gas or increase of production from other wells in the field. Therefore, this section briefly outlines the UK licensing and regulatory systems for gas extraction to describe Third Energy's interests and obligations in operating and continuing to maintain the site.
- 1.20 The Petroleum Act 1998 vests all rights to the nation's petroleum resources in the Crown. Petroleum is defined as "any mineral oil or relative hydrocarbon and natural gas existing in its natural condition in strata". However, the government can grant licences that confer exclusive rights to 'search and bore for and get' petroleum. Each of these confers such rights over a limited area and for a limited period.
- 1.21 Licences are currently awarded by the Oil and Gas Authority (OGA) - an independent executive agency, sponsored by the Department of Energy & Climate Change¹, on behalf of the Crown. The principal objective of the OGA is to maximise economic recovery of the UK's oil and gas resources. It does this through regulating the technical and financial capability and environmental awareness of operators to work their licences. The Secretary of State has ultimate discretion in the granting of licences, which is exercised to ensure maximum exploitation of national resource.
- 1.22 Third Energy has interests in seven licensed areas with different prefixes due to their various ages. The licences are:

¹ From July 2016 this became the Department for Business, Energy and Industrial Strategy - BEIS

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- Production Licences (PL) PL77, PL79, PL80 and PL81 (these are pre-1984 licences and were in place as at February 1969² though covering a larger area than at present).
 - Appraisal Licence (AL) AL6 (awarded post-1984 and located within PEDL120 operated by Moorland Energy).
 - Development Licence (DL) DL5 (awarded post-1984 and located within PEDL177 operated by Third Energy).
 - Petroleum Exploration and Development Licence (PEDL) PEDL177 (awarded in the 13th round of licensing in 2008).
- 1.23 They were also offered two new areas in the 14th Round of awards in late 2015, one corresponding to an areas just north of their existing PL77 and one further to the north around Middlesbrough. These have not been formally taken up so do not have a PEDL number assigned.
- 1.24 Figure 1.1 below³ shows the location of these licences in relation to identified gas fields (shown in green). PL77 in which the Ebberston Moor 3 wellsite is located covers approximately 46km².

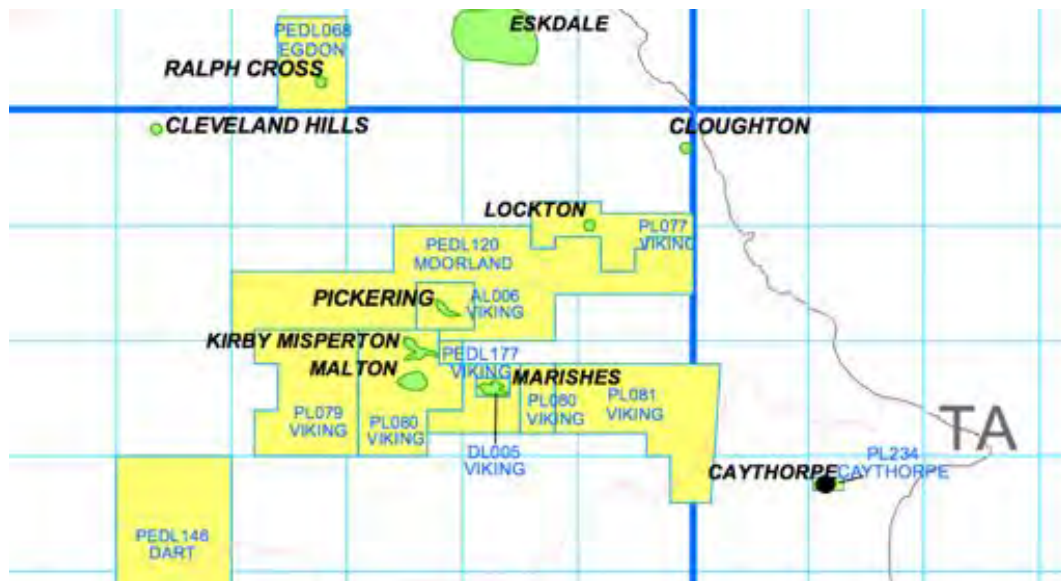


Figure 1.1 Map showing Petroleum Licences in North Yorkshire (Third Energy owns licences marked as “Viking”)

- 1.25 Licences however, do not give an operator rights to undertake any works in their licensed area; they only grant exclusive rights to the operator to apply for such rights under the relevant regulatory regimes. Further consents are required, depending on the works proposed. These can include:

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/286145/Onshore_1969.pdf

³ OGA (2016) Online map of Onshore Licensing (updated 1 June 2016)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/526945/Landfields_Lics.pdf

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- Landowner consent and lease;
- Planning permission – granted by Mineral Planning Authority under the Town and Country Planning Act 1990 (as amended), with reference to relevant regulations arising from this, for example The Town and Country Planning (Environmental Impact Assessment) Regulations 2011;
- Environmental permits – granted by the Environment Agency under the Environmental Permitting Regulations 2010;
- Compliance with Notice to Conserve – may be issued by Environment Agency under Section 199 of the Water Resources Act 1991 to protect groundwater;
- Scrutiny of well design as examined by an independent and competent well examiner – granted by Health & Safety Executive (HSE) under the Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 and Borehole Sites and Operations Regulations 1995. A joint inspection of the site would be undertaken by the HSE and Environment Agency; and
- Permit from the Coal Authority if coal seams underlay a well site under Coal Industry Act 1994.

1.26 Before commencing drilling operations, the operator must also have:

- submitted relevant petroleum operations notifications to the OGA,
- notified the Environment Agency of the intention to construct a borehole to search for or extract minerals under Section 199 of the Water Resources Act 1991,
- satisfied DECC (now BEIS) that effective operational and environmental management systems are in place;
- discharged relevant planning conditions placed on the planning permission by the MPA;
- agreed data reporting methods with OGA; and
- notified the British Geological Survey (BGS) (under Mining Industry Act 1926) and HSE (under Borehole Sites and Operations Regulations 1995) of the intent to drill with a minimum of 21 days' notice.

1.27 The operator then seeks final consent to drill from the OGA. There are further requirements to lodge core samples and reports on well process with relevant regulators during operations. A summary of the relevant regulatory regime is provided in the Regulatory Roadmap which has been produced separately for England⁴ and the Devolved Administrations.

1.28 It is important to note that the process of obtaining consent to drill a well is the same whether the well targets conventional or unconventional gas, though additional consent, notifications and agreements are required if hydraulic fracturing is planned. Third Energy is currently

⁴ DECC (2015) Onshore oil and gas exploration in the UK: regulation and best practice
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/503067/Onshore_UK_oil_and_gas_exploration_England_Dec15.pdf

investigating conventional gas reserves within the Ebberston Moor field. Under restrictions outlined in the Infrastructure Act 2015, the location of the wellsite within the North York Moors National Park would prevent operations involving associated hydraulic fracturing for shale gas.

1.5 Supporting Documents

- 1.29 The proposed development is for an extension of time of an existing wellsite with a previously drilled well. Reports submitted for the original consents NYM/2012/0475/FL and NYM/2013/0501/FL provided a detailed summary of the baseline environment prior to the preparation of the wellsite and drilling of the appraisal well, identified sensitive receptors, and outlined measures in place to minimise environmental impact.
- 1.30 These documents were taken into account in the determination of the original applications, and planning conditions put in place to ensure that operations had regard for safeguards contained in the application documents. All relevant conditions were discharged in advance of operations starting on site in 2013.
- 1.31 As no additional drilling work is proposed, these previously submitted reports are of limited relevance to the current proposals, while providing a good indication of relevant sensitivities in the area. Therefore, the reports are not resubmitted with this application, though information where still relevant is replicated, and an update of relevant sensitivities is provided.
- 1.32 The exception to this is the 2012 Restoration Plan, resubmitted as Appendix A. This is still applicable as the site has not been restored as consented. Restoration in accordance with this plan is proposed as part of this planning application.
- 1.33 In addition, updated reports have been commissioned relating to the ecology of the area and road condition and transport management. These update the baseline condition in line with works completed as part of the previously consented operations.
- 1.34 The following documents are included in this application:
- Planning application forms and planning drawings (site location and site plan as submitted for NYM/2013/0501/LF);
 - Statement in Support (this document);
 - Restoration Plan (Appendix A)
 - Updated Ecological Phase 1 study (Appendix B); and
 - Updated Outline Transport Management Plan and Route Condition Report (Appendix C).
- 1.35 As the proposed development is an “engineering (or) mining operation” a Design and Access Statement is not required alongside the planning application⁵.

⁵ Applications for major development, as defined in article 2 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 require a Design and Access Statement. However, applications for waste development, a material change of use, engineering or mining operations do not need to be accompanied by a Design and Access Statement. <http://planningguidance.communities.gov.uk/blog/guidance/making-an-application/validation-requirements/national-information-requirements/>

2 Location and History of Ebberston Moor 3

2.1 Location

- 2.1 The Ebberston Moor 3 wellsite is located in Wykeham Forest, to the north of Sawdon and south west of Hackness in the North York Moors National Park Authority. It is approximately 6 km north of the A170, the main road between Scarborough in the east and Thirsk in the west. The central grid reference of the site is approximately SE 934 887.
- 2.2 The site is located on a minor road, Cockmoor Road, passing through Wykeham Forest. It is accessed from the A170 at Wykeham, travelling north on the local road (Wykeham Lane/ Moor Road) through North Moor into Wykeham Forest. Moor Road joins Cockmoor Road at “Raptor Viewpoint”, and the site is accessed along Cockmoor Road approximately 1km to the west.
- 2.3 The indicative location of the site in relation to other gas wells in Third Energy’s PL77 licence and wells within the adjacent licence PEDL120 is shown in Figure 2.1 below. Further site location plans are provided as Application Plans 1 and 2.

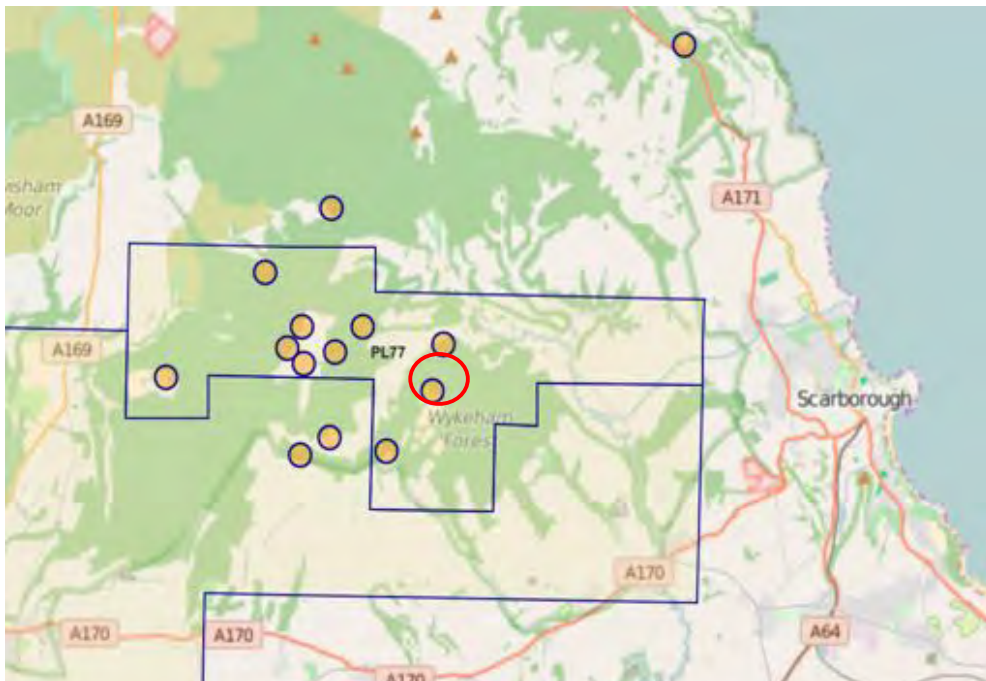


Figure 2.1 Site Location showing location of Ebberston Moor B1 well and other conventional gas wells in PL77 and PEDL120 taken from OGA Interactive Map⁶

⁶ OGA (2016) <https://decc-edu.maps.arcgis.com/>

2.2 Character of the Site and Surroundings

- 2.4 Ebberston Moor 3 wellsite is bounded by wooden fencing with a metal security gate into the site compound. The site is currently hardstanding, with the suspended Ebberston Moor B1 well covered with a metal security cage, coloured green. A junction from Cockmoor Road was constructed as part of the previous consent to accommodate vehicles accessing the site. The site is well hidden from the road, and the nature of the boundary fencing means it is not a prominent feature in the predominantly wooded area.
- 2.5 Plate 2.1 shows the site as seen from Cockmoor Road.



Plate 2.1 Photo (May 2016) showing Ebberston Moor 3 Wellsite from Cockmoor Road

- 2.6 The area around the wellsite to the north and east is a mature plantation conifer forest, comprising largely Sitka spruce. The site is bounded immediately to the west by a small forestry track, with a strip of mature conifers beyond. Beyond this strip of trees is a large, open agricultural field bounded with wooden post and wire fencing. This field (used to cultivate young saplings for forestry operations) is a rare open area in a primarily wooded landscape. A thin strip of mature trees (conifer and silver birch) separates the southern boundary of the site from Cockmoor Road. Land south of the road is further conifer plantation with open agricultural (tree nursery) land beyond.
- 2.7 At a wider scale, the site is located in the “Tabular Hills”; a range of generally west to east-trending hills, with a north facing scarp slope and a gradual decline in elevation southwards towards the Vale of Pickering. The Tabular Hills are incised by a series of north to south - trending valleys and rivers, including the River Derwent.
- 2.8 The site is on generally flat land at approximately 217mAOD. However, to the north the land drops in a steep valley to Troutdale Beck (in the River Derwent Valley), which runs approximately 700 m north of the site, feeding into the River Derwent approximately 1.5 km north east of the site. The elevation of the Derwent Valley floor ranges from 70-90 m AOD. The land falls more gradually to the south and east of the site, with Beedale Beck approximately 2 km to the south east.
- 2.9 The nearest residential property is Brompton Moor house, approximately 480 m south west of the site. All other residential properties are over 1 km, given the wooded, rural nature of the area.

- 2.10 The site is located in North York Moors National Park. There are no other statutory designations within or adjacent to the site.
- 2.11 Further information on the environmental sensitivities surrounding the site are outlined in Chapter 5: Environmental Review.

2.3 Alternative Locations

- 2.12 As the current application is to retain an existing wellsite, no alternative locations were considered. However, the application for the original wellsite did consider a number of alternative locations, taking into account restrictions, including geology, environmental and social considerations.
- 2.13 It was concluded that the subsurface geological prospect at the chosen location was promising, and that surface environmental constraints were limited. The site is located within forest with few residential receptors and no statutory nature conservation designations in the vicinity. There was limited risk of flooding or other environmental risk, and the site had a relatively good transport network for site access (with potential for upgrade). Due to the location of the prospect, it was not possible for any site to be located outside of the North York Moors National Park. Therefore, the site at Ebberston Moor 3 was the preferred site of the alternatives appraised.

2.4 Exploration History and Geology of the Ebberston Moor Gas Field

- 2.14 The site is located in the “Lockton” gas field (now called Ebberston Moor field) where Third Energy and its predecessors have drilled several wells in the PL77 licence and surrounding licence areas.
- 2.15 The first well was drilled in 1945 by D’Arcy approximately 3 km west of the Ebberston Moor 3 wellsite but the majority (approximately 8 initial wells) were drilled from 1966 to 1971. Although identifying gas in the area, these wells were based on sparse geophysical data and showed mixed results. Some wells were poorly located, due to poor structural understanding of the field. Production began from 2 wells in 1971 but ceased after 2 years.
- 2.16 Further 2D seismic data was acquired in 1980 and the “Lockton East 1” well was drilled approximately 1km north of the current site; the furthest east in the field. This was drilled to 1810m in the Carboniferous Millstone Grit, with the objective to test the Permian Kirkham Abbey carbonate reservoir. The well was tested and produced gas at 2.3MMscf per day.
- 2.17 Following the acquisition of the field by Viking UK Gas Limited (the direct predecessor of the applicant), further seismic data was collected in 2007. This was 3D seismic, providing a greater understanding of the complexity of the field than the earlier 2D seismic. This data indicated that the Lockton East 1 well was poorly located and land to the south and west of this location was likely to be more productive.
- 2.18 Viking drilled another appraisal well at Ebberston Moor 1 in March 2007 (approximately 4 km north west of the current site, and approximately 500 m from the first well drilled in the region) which tested at 6MMscf per day. A further well (Ebberston South 1) was drilled in 2009 by Moorland Energy in the adjacent PEDL, approximately 3.5 km south west of the Ebberston Moor 3 wellsite.

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- 2.19 Ebberston Moor B1 on the existing Ebberston Moor 3 wellsite was completed in September 2013. The well was appraising potential for “conventional” gas reservoirs so required a potential reservoir of gas within the formations with an “impermeable” seal above and below these targets. Therefore, it targeted the Permian aged Kirkham Abbey formation, and also investigated other potential reservoirs (Brotherton and Cadeby Permian formations) from approximately 1350m to a total depth of approximately 2087m. These were overlain and separated by the more impermeable formations of Billingham, Fordon and Hayton. The well was drilled into the Namurian Millstone Grits and Carboniferous Sand and cased to the Fordon Formation (approximately 1900m) just above the Kirkham Abbey formation.
- 2.20 An indicative Figure showing the geological formations drilled by the Ebberston Moor B1 well is provided in Figure 2.2 overleaf.
- 2.21 The formations were cored to analyse the reservoir potentials of the relevant zones and drill cuttings were sampled for all horizons. A sequence of electric log lines was run in the well prior to the setting of the casing. This included pressure and fluid sampling to analyse the potential reservoir intervals and provide a basis for further testing.
- 2.22 The Environment Agency approved the drilling programme method statement and casing proposals under the Water Resources Act 1991, as the well was an appraisal well for minerals, and also involved drilling through an aquifer.
- 2.23 Although the well was consented for an Extended Well Test it was in practice not tested. On drilling the well was suspended with a “kill string”. The wellsite is currently visited for maintenance and the cellar pumped out.

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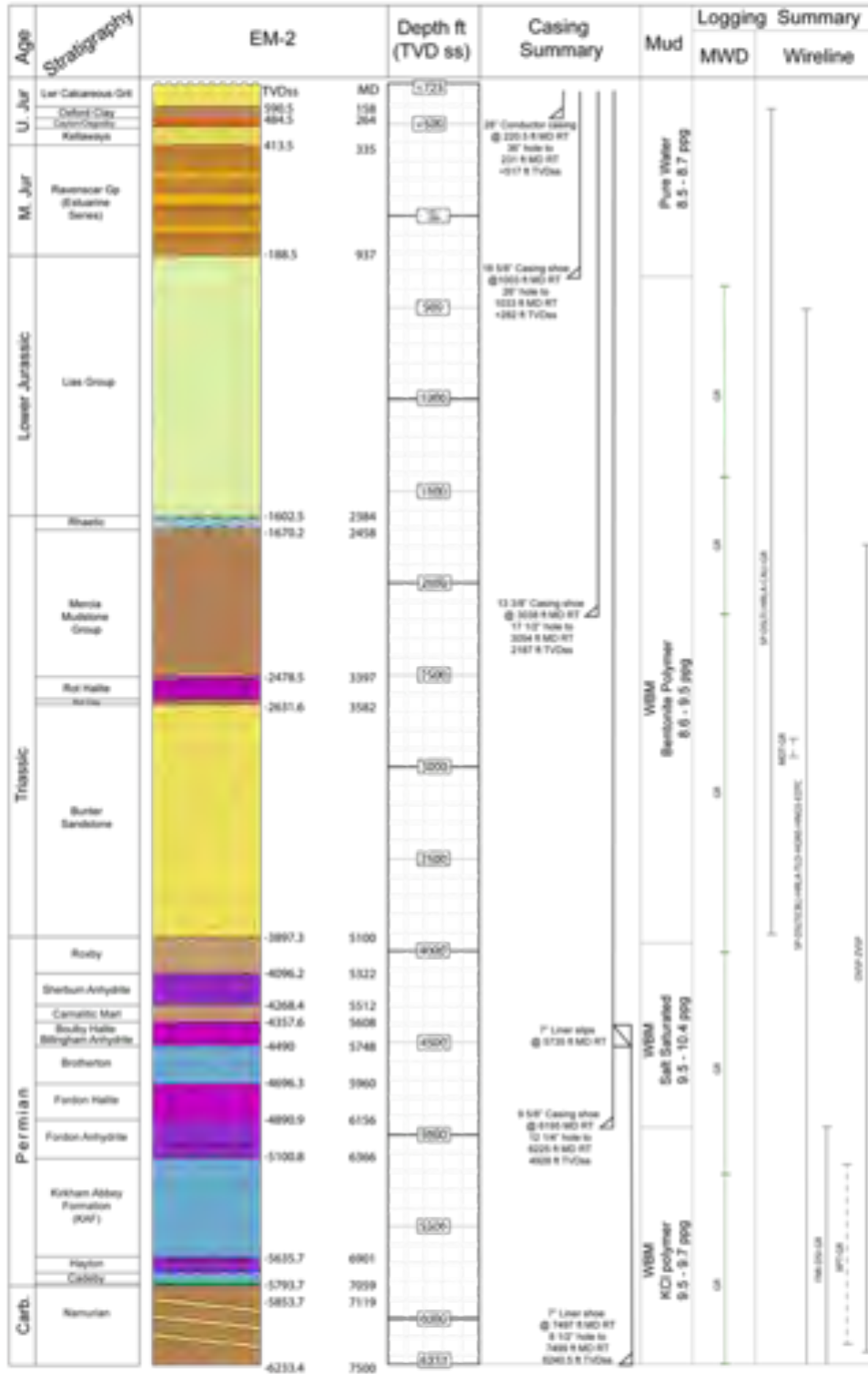


Figure 2.2: Indication of Stratigraphy and Casing of Ebberston Moor B1 well

Appendix A

Restoration Plan

This Restoration Plan replaces that submitted alongside the original application.

Third Energy is submitting an application to North York Moors National Park Authority for permission to retain the wellsite at Ebberston Moor 3.

In support of the planning application a scheme for site restoration has been produced, which makes provision for the capping or plugging of the borehole to the satisfaction of the Mineral Planning Authority (MPA).

1 Restoration scheme background

The aim of the restoration scheme is to return the site to a condition as close as practically possible to its original state. The sub-soil and top-soil should be in an uncompacted state, such that the growth of crop or tree roots is unimpeded and drainage water can percolate down through the profile relatively freely either to the piped drainage system or to naturally permeable strata.

The scheme will be agreed in writing by the MPA, approved by the Health and Safety Executive (HSE), Oil and Gas Authority (OGA) and the Landowner.

The cultivation of sub-soil and the replacement/cultivation of top-soil is weather dependant and often subject to conditions imposed by the MPA. Timescales given are estimated assuming both the sub-soil and top-soil are in a suitably dry non-plastic state such that damage to its structure shall be avoided.

2 Reinstatement operations

When the decision is made to restore the site to its former usage the well(s) will be plugged, hydrostatically tested, and abandoned with an agreed programme or method approved by the HSE and the OGA.

2.1 Pre restoration site clearance

The wellhead and Christmas-Tree will be removed and the well casing cut off not less than 1.83 metres (6 feet) below the finished ground level, a metal plate welded on top, and a concrete slab placed on top of the plate.

All plant, equipment, buildings, security fencing, and surface installations, will be dismantled and removed from the site, either to a re-location or to storage.

The site ditches, sump(s), cellar(s), and cess tank(s), will be drained and any contaminated materials removed from the site, such waste will be disposed of at approved locations, in accordance with prevailing legislation of the time.

All pipes, cables, ducting, and items above the impermeable lining will be disconnected, excavated, and removed from the site for disposal.

All uncontaminated hardcore and stone will be removed, with a flat bladed grader or bucket, for re-use or disposal. Concrete installations will be broken up and removed, the geotextile membrane (Terram), sand and impermeable linings will then be removed, with disposal to an approved location.

Any installations, cables, and pipes, below the linings level will then be excavated and removed from the site.

The cellar, sump and ditching voids will be in-filled with any sub-soil stored on the site, in layers of not more than 200mm thickness, ready for the site area to be then re-graded to the original contour levels.

Any header drains installed will be rodded to check their integrity prior to their retention as part of the reinstatement scheme.

2.2 Sub-soil cultivation

The sub-soil will be deep tine cultivated in strips, using a low ground pressure bulldozer drawing a winged, straight legged tine cultivator to a depth of 600mm at 1000mm centres. After each strip is deep tine cultivated, top-soil will be back-tipped onto the loosened strip and graded out either with the bucket of the 360° excavator or with a low ground pressure bulldozer. The deep tine cultivated sub-soil will not be traversed by any machinery.

2.3 Replacement of soil-sub

Any weed growth on any subsoil stockpiles will be eliminated by non-persistent, contact weed killer such as "Roundup", prior to the re-grading of the sub-soil to reform the falls and gradients which existed prior to the occupation of the site and to the original site contours. After each strip of sub-soil is deep tine cultivated, previously excavated sub-soil will be back-tipped onto the loosened strips in as thicker layer as possible and graded out either with the bucket of the 360°excavator or with a low ground pressure bulldozer. The deep tine cultivated sub-soil will not be traversed by any machinery.

2.4 Replacement of top-soil

Any weed growth on the topsoil stockpiles will be eliminated by non-persistent, contact weed killer such as "Roundup". Topsoil will be back-tipped from the stockpile onto the loosened strips and graded out either with the bucket of the 360°excavator or with a low ground pressure bulldozer to a uniform depth (the original depth before excavation), and will be levelled to avoid the formation of depressions which could hold water.

All topsoil areas within the site, including areas not affected by construction will be ploughed and cultivated to ensure that all stones, rubble, vegetation and other extraneous material larger than 75mm in any direction are removed from the site to an approved waste disposal facility.

The topsoil will be worked to a fine tilth by rotovator or harrowing to not less than 100mm depth.

If it should prove necessary to import top soil into the site, disease and pest free material to British Standard 3882 (General Purpose Grade) will be used.

2.5 Removal of site boundary fence

The boundary fencing will normally be dismantled and removed prior to site restoration works. If however, the land surrounding the site is used for grazing livestock, the boundary fence will be dismantled and removed on completion of the restoration works, as it will be required to protect the restoration area from the animals.

2.6 Reinstatement of fences and gates

Any fences and gates removed during the use of the site will be replaced with new materials which match closely as practicable those previously existing on site.

2.7 Reinstatement of trees

Any trees removed will (with agreement with the landowner) be replanted with good nursery stock plants spaced in a double row 9 inches apart, individually guarded in plastic tubes to increase protection and growth and to create a 'greenhouse' affect. A tannalised timber post and four rail fence with livestock and rabbit proof netting will be constructed on either side of the newly planted tree lines if required. Any fence to protect a planting will be maintained for a period of two years.

Subsequent Management

- | | |
|--------|--|
| Year 1 | Initial treatment will be carried out as described above.

Apply 'Herbicide' twice a year to give the soil enough resistance to control weeds and help establish the plants. |
| Year 2 | Apply 'Herbicide' twice a year to give the soil enough resistance to control weeds and help establish plants. |
| Year 3 | Annual inspection. |
| Year 4 | Annual inspection |
| Year 5 | Annual inspection. |

3 New drainage

If necessary, a scheme of drainage in the site will be prepared and agreed with the Landowner and for works to be carried out by a specialist land drainage contractor in year two or earlier if appropriate.

Any construction of header drains installed to intercept the field drains will be retained; these will be rodded to check their integrity prior to their incorporation as part of the drainage reinstatement scheme.

Perforated plastic pipe of minimum diameter, 110mm, will be laid at the bottom of the trench surrounded by backfill with clean washed 10 to 20mm pea-gravel (depending on the drainage machine to be used), and will be backfilled to within 225mm of surface allowing for settlement for the gravel. Drains will be laid to the maximum available falls and, at depths not less than 660mm cover.

Any outfall of the drainage system will consist of 2m lengths of frost resistant plastic pipe set into a suitable headwall (concrete or gabion) with a splash plate, discharging at water level into the ditches.

If it is not possible to lay drains at a depth of at least 600mm of cover, the Landowner will be consulted and his written approval will be sought to an amended specification.

4. Management and aftercare

The whole former operation site will be returned to a use as agreed with the landowner after completion of the works. Annual inspections will be made in August/September of each year, for a period of five years, with the Landowner or his Agent, to review the progress and crop productivity of the restoration area.

4.1 Subsequent Management if subject to grass planting

- | | |
|--------|--|
| Year 1 | <ol style="list-style-type: none">1. Initial treatment will be carried out as described above.2. The site will be rolled with a light, grassland roller and spread with a compound fertiliser as recommended by soil sample analysis.3. The grass will be cut for silage or hay May/June and subsequently grazed.4. Any weeds will be sprayed with an appropriate weed killer.5. All stock/cattle will be removed in adverse weather conditions to prevent poaching. |
| Year 2 | <ol style="list-style-type: none">1. Annual inspection.2. Carry out additional restoration (if required) and compensate the owner or the land user for any loss. |
| Year 3 | <ol style="list-style-type: none">1. Annual inspection.2. Carry out additional restoration (if required) and compensate the owner or the land user for any loss. |
| Year 4 | <ol style="list-style-type: none">1. Annual inspection. |

2. Carry out additional restoration (if required) and compensate the owner or the land user for any loss.

Year 5 1. Annual inspection.

2. Carry out additional restoration (if required) and compensate the owner or the land user for any loss.

4.2 Subsequent management if subject to arable planting

Year 1 1. Initial treatment will be carried out as described above

2. The crop will be assessed prior to harvest with regard to production levels and compared to production levels from adjoining undisturbed land.

Year 2 1. Annual inspection.

2. Further sub-soiling or comprehensive filed drainage scheme will be considered (if required).

3. Compensate the owner or land user for any loss or disturbance if required.

Year 3 1. Annual inspection.

2. Compensate the owner or land user for any loss or disturbance (if required).

Year 4 1. Annual inspection.

2. Compensate the owner or land user for any loss or disturbance (if required).

Year 5 1. Annual inspection.

2. Compensate the owner or land user for any loss or disturbance (if required).

Appendix C

Updated Outline Transport Management Plan and Route Condition Report



Ebberston Moor 3

Update to Transport Management Plan and Road Condition Survey

July 2016

Third Energy UK Gas Limited

Prepared by



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Quality Management

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1 Introduction

- 1.1 This Transport Management Plan (TMP) and Road Condition Survey updates that produced alongside the original application. It takes account of the works undertaken as a condition of consent of the original application (NYM/2012/0475/FL as amended by NYM/2013/ 0501/FL), including the development and improvement of passing places.
- 1.2 An assessment of vehicle numbers, types, spread of vehicles throughout the day and the capacity for vehicles to use the access to the site (for example, swept path analysis) was carried out for the original application. This is not updated for this application as no changes are proposed.
- 1.3 Chapters 2 and 3 of this report outline the route to be followed to access the site and vehicle numbers proposed. Chapter 4 outlines constraints identified on the route and means by which these have been and will be mitigated. This chapter updates information provided in the Road Safety Audit carried out for the 2012 consent. This was undertaken to inform the construction of passing places and the improvement of the junction of Moor Road and Cockmoor Road. The update in Chapter 4 indicates how well the safety measures have been implemented and identifies any further necessary works.
- 1.4 Chapter 5 outlines the general management scenarios that would be followed within a Transport Management Plan.
- 1.5 Chapter 6 contains an updated interim road condition survey which should be read in conjunction with the Route Condition Survey undertaken in May 2012 by Local Transport Services, forming a condition of consent of the original 2012 application. This provided a detailed assessment of the route condition in 2012. It identified 273 existing road defects; a high proportion (69) in the first 950m of the route (to the junction with Quarry Gate) and 136 from 950m to 3.5 km. Defects were primarily cracking or surface deterioration at the edge of the carriageway. These were repaired prior to the construction of the Ebberston Moor 3 Well site in 2013 and monitored throughout works and subsequently. The updated survey in Chapter 6 of this report therefore does not address structural defects in the route, but updates the survey undertaken in 2012 showing the current condition of passing places introduced and upgraded in 2012. It therefore acts as a new “baseline” against which future road condition can be judged.

2 Route Description

- 2.1 A plan showing the proposed route to the site from the A170 at Wykeham is provided in Application Plan 4. In total it covers approximately 7.1 km and the full route is part of North Yorkshire County Council's adopted public highway network.
- 2.2 This single route would be used by all vehicles accessing and egressing from the wellsite during all phases of the proposal (Maintenance operations and abandonment and restoration). The route (travelling to the site) is as follows:
- Exit the A170 at Wykeham Village onto Wykeham Lane
 - Continue north along Wykeham Lane
 - After approximately 2.2 km, Wykeham Lane becomes Moor Road
 - Continue north along Moor Road
 - At the northern end of Moor Road turn left onto Cockmoor Road
 - Continue ahead for approximately 850m. The well site is located on the right.
- 2.3 The route is rural in nature and for most of its length is a single lane carriageway. The majority of the route carriageway width typically measures between 2.9 m to 4.5 m with various verge widths. The southernmost 90 m of Wykeham Lane is subject to a 40 mph speed limit. The remainder of the route is the national de-restricted speed limit (60 mph). In practice, the width and alignment of the route is likely to result in speeds being much less than the limit.
- 2.4 The route is lightly trafficked with use by light vehicles accessing private dwellings and leisure/recreational facilities associated with Wykeham. Occasional use by larger vehicles associated with forestry logging activities is apparent. There are some locations along the route (see Chapter 6) where verge damage has been caused by such vehicles.
- 2.5 Passing places are present along the route (see Chapter 5 and 6). Some of these were installed or improved in 2013 prior to construction of the wellsite.
- 2.6 Access into the wellsite was constructed in 2013. This access is 6 m wide, widening to approximately 32.8 m at the junction mouth. The first 15 m of the access was laid with tarmac. A Type 1 hardcore was used beyond this. The tarmac was keyed into the existing public highway. Kerbing was provided around the perimeter of the access. A photograph of the access is provided as Photo 27 in Chapter 6. This access would be removed during the restoration phase of the project unless agreement is reached with the landowner and North York Moors National Park Planning Authority.

3 Vehicle Trip Generation

- 3.1 A schedule of vehicles over the course of the construction, drilling, testing and restoration phases for the wellsite was provided as part of the documentation for the original planning application (amended in 2013).
- 3.2 The current proposed development would involve the “abandonment and restoration” phase of the previous development. In addition, prior to this, very low levels of vehicles would access the site for maintenance. Prior to the abandonment and restoration phase it is anticipated that maintenance works would involve no more than an average of one visit per day (either car or LGV), equating to 12 movements weekly.
- 3.3 A summary of the vehicle trips predicted per week during the six week abandonment and restoration phase (involving plugging and abandonment of the well and restoration of the wellsite to allow agricultural/ forestry management and afteruse) is provided in Table 3.1 below. These figures are considered a worst case for the busiest time of the proposed development. Although trips would not necessarily be spread evenly throughout the week, an estimated daily average figure is also provided to put the figures in context.

Table 3.1 – Estimated Weekly One Way Vehicle Trips during abandonment and Restoration (from 2012 application)

Phase - Restoration	Week					
	1	2	3	4	5	6
Articulated Vehicle (HGV)	5	3	4	-	-	-
Rigid Vehicle (HGV)	9	7	12	116	116	3
Staff Cars	120	120	120	120	120	120
Deliveries/ Waste removal (LGV)	12	12	12	12	12	12
TOTAL HGV	14	10	16	116	116	3
TOTAL All vehicles	146	142	148	248	248	135
Daily Average HGV*	2	2	2	20	20	<1
Daily Average All vehicles*	24	24	24	42	42	22

* Daily Average figures rounded to allow for an even number of trips – 2 equating to a single vehicle entering and leaving the site. Trips would not be spread equally through the day as staff cars would travel at the beginning and end of working days.

- 3.4 This shows that as a worst case, there would be 248 vehicle movements per week during weeks 4 and 5 of the restoration phase. This equates to an average of 42 vehicle movements per day (20 of which could be HGVs); or approximately four per hour (two HGV movements per hour and two light vehicle movements). A “return” trip to the site from the A170 comprises two movements. In practice, the light vehicle movements would mostly comprise staff cars, which would be at the beginning and end of the working day, and would not coincide with the movements of HGVs.
- 3.5 The figures for staff travel are based on a staff of 10 people per day (over a six-day week) each using their own car. In practice, car sharing would be promoted and would be a realistic travel mode for those staff employed by the same service company/ contractor. Staff vehicle movements would generally

- 3.6 Figures for deliveries and waste removal allow for one vehicle per day. In practice most deliveries/ waste removal would be undertaken by the HGVs in the abandonment and restoration phase. However, unscheduled miscellaneous deliveries may also be necessary from time to time. They are likely to be less frequent than predicted here.
- 3.7 The operational hours for abandonment and restoration works would be 0700-1800 Monday to Saturday, with no works during Sundays or Bank Holidays. Operational hours for maintenance works would be similar, though could potentially take place on Sundays. Vehicle trips would be timed to avoid the morning and afternoon peak period, and other predictable peak periods where possible.

4 Constraints on the Route and Identified Mitigation

- 4.1 The assessment undertaken in 2012 concluded that the proposed works would notably increase the traffic flow on Wykeham Lane/ Moor Road/ Cockmoor Road. In addition, the vehicle traffic would change from being predominantly cars of local residents and tourists to the area, to having a higher proportion of HGVs.
- 4.2 Therefore, a Transport Statement and Road Safety Audit was carried out in 2012 to ensure that this increase in use and the change in composition of vehicle use would not affect the safety or structure of the road. These assessments assumed a standard HGV vehicle would be used; an articulated flatbed HGV (16.5m total length, with a trailer width of 2.55m). A larger (19m long and 2.6 m wide) vehicle was also proposed to transport the Hydraulic Pipe Handler (part of the identified drilling rig) though this was understood to be the worst case and a smaller rig, transportable on a standard HGV may have been used.

4.1 Identification of Constraints on Route

- 4.3 The road safety audit indicated that there were potential constraints with the route identified. These constraints would generally apply to all vehicles, but in particular to HGVs using the route (and other road users encountering these HGVs). The constraints and identified mitigation are indicated below with further details of how the mitigation was implemented in Section 4.2.
- **Constraint 1:** No advance warning was provided that the road was narrow (single track width) and could require the use of passing places. This could result in excessive speed and potentially result in road users coming into conflict with traffic travelling in the opposite direction. **Mitigation:** Provision of signs at each end of access road indicating “Single Track Road with Passing Places”.
 - **Constraint 2:** Narrow road which could cause problems for vehicles passing each other in different directions. **Mitigation:** Provision of new passing places or upgrading existing ones at strategic points along route to ensure there is potential for two vehicles (potentially two HGVs) to safely pass each other. Signage and Transport Management protocols for site vehicles to be introduced.
 - **Constraint 3:** Drainage ditches or verges alongside the road could present a hazard to drivers if passing places were located nearby, meaning they could overrun the back of the passing place and into the ditch (e.g. passing place 4) or down the verge (e.g. passing place 7). **Mitigation:** Provision of verge marker bollards at edge of passing places or constructing passing place to remove the verge and create a shallower slope.
 - **Constraint 4:** Visibility along the road was restricted at some points (especially near proposed passing places – e.g. passing place 4) due to bends in the road and overgrown vegetation. This may result in vehicles proceeding past a passing place and meeting another oncoming vehicle “head on”. **Mitigation:** Removal of vegetation where this hinders visibility.

- **Constraint 5:** Parking in potential passing places could increase the potential for head on conflicts (e.g. passing place 6 and 8). **Mitigation:** Provision of sign to prohibit parking in passing places.
- **Constraint 6:** Potential for large vehicles to overrun verge at some locations. **Mitigation:** Temporary verge strengthening works at identified locations.

4.2 Mitigation of Constraints

Temporary Traffic Signage

- 4.4 A temporary traffic signage strategy was developed to facilitate safe access to and from the site for works vehicles, and to ensure all delivery vehicles used the designated route. This was agreed with the National Park Authority and North Yorkshire County Council.
- 4.5 Signs were in accordance with the “Traffic Signs Regulations and General Directions” (DfT 2002). No Temporary Traffic Regulations Orders were required in support of the strategy.
- 4.6 During the busiest weeks of each phase of works, temporary traffic management (stop/ go boards) was provided in the vicinity of the bridges over Beedale Beck in the southern section of the route.
- 4.7 In addition, permanent signs informing users of the narrow road with passing places, and the passing places themselves were permanently signed.

Passing Places

- 4.8 To maintain the safe movement of two-way traffic, four new and seven upgraded passing places were installed. In addition, four existing formal passing places and 10 existing informal passing places were retained – a total of 25 along the route. The indicative locations are shown in Figure AC1 (taken from the consented application NYM/2012/0475/FL - drawing no LTP/1173/03/002).
- 4.9 The passing places were provided to allow a minimum carriageway of 6.6 m width over a length of 25 m. Where appropriate bollards or markers were placed adjacent to these to ensure overrunning into the adjacent verge did not occur.
- 4.10 Localised widening of the road between 1.0 m and 1.6 m was undertaken. This was undertaken in the extents of the highway boundary.
- 4.11 The passing places were selected to ensure maximum visibility between them. Vegetation trimming was undertaken to ensure visibility remains. They are signed and of permanent construction. They offer highway safety and convenience benefits during the works, and also for residential, local or tourist users of the roads (Wykeham Lane, Moor Road and Cockmoor Road).
- 4.12 Condition 5 of NYM/2012/0475/FL states “before the site is decommissioned the highway verge/ footway shall be fully reinstated in accordance with the scheme approved in writing by the Local Planning Authority in consultation with the Highway Authority”. However, given the benefits the passing places provide to users of the road, it is proposed to retain these following abandonment and restoration of the wellsite.

Ebberston Moor 3 TMP and Road Condition Survey

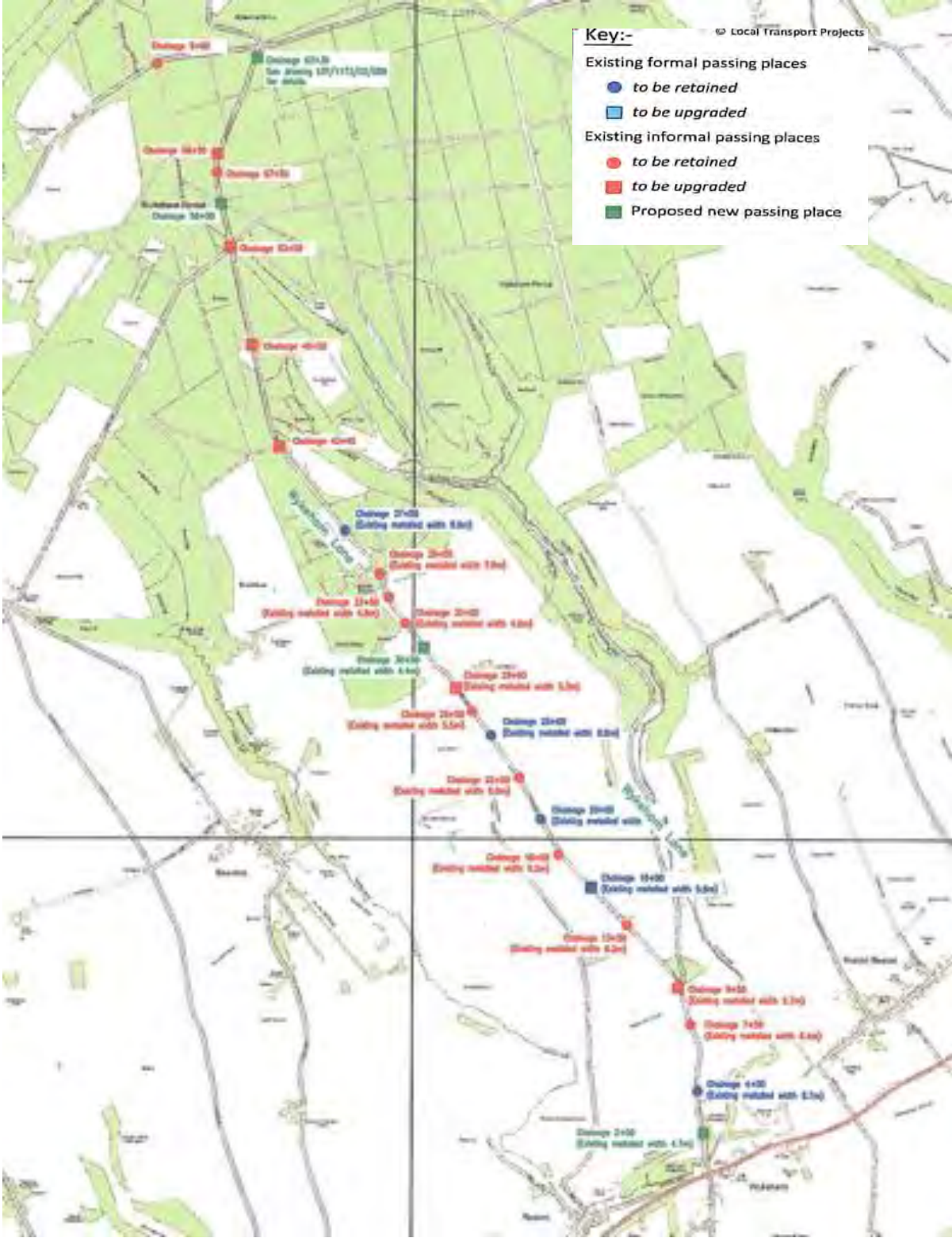


Figure AC1: Indicative Location of Passing Places (from NYM/2012/0475/FL)

Localised Verge Strengthening Works

- 4.13 Detailed vehicle swept path analysis undertaken for the 2012 application indicated that some minor verge strengthening work was required to accommodate vehicles into the site.
- 4.14 This included:
- Temporary strengthening works at the junction of Moor Road and Cockmoor Road;
 - Temporary strengthening works on Cockmoor Road, approximately 200m east of the site access;
 - Temporary strengthening works around the site access junction; and
 - Temporary strengthening and remedial works at the western footway of Wykeham Lane near to the junction with the A170.
- 4.15 These works were undertaken in 2012 and remain in place.

Traffic Management Strategy

- 4.16 A Traffic Management Strategy including route enforcement, communications between vehicles and the site, local communications, parking arrangements, worksite security and highway cleaning was introduced. This was similar to the proposed strategy outlined in Chapter 5 of this update.

4.3 Success of Mitigation during Initial Works

- 4.17 The mitigation outlined was successful in controlling traffic to the site during works in 2013. Identified points included the importance of drivers' care at the junction with the A170 at Wykeham when turning into Wykeham Lane, and the importance of maintaining a slow speed along the route.
- 4.18 Some minor and isolated conflict with pedestrians and riders was apparent, though this was mitigated by drivers maintaining a low speed and giving other users space to complete their manoeuvres. Other road users' awareness of the correct processes when HGVs are encountered was also important; for example, keeping animals under control, and making sure the HGV driver is aware of planned manoeuvres.
- 4.19 The passing places were generally well used, and minimal damage to the roads and verges required restoration. Photographs of the current status of the passing places are provided in Chapter 6.

4.4 Identified new Constraints and Proposed Amendments to Mitigation

- 4.20 An updated Route Condition Survey and indicative safety audit was undertaken in May 2016. Photographs and conclusions are presented in Chapter 6. No additional constraints were identified. The following mitigation is proposed:
- The temporary signage would be retained.

- The road condition survey (Chapter 6) indicates that vegetation is generally well maintained allowing visibility between passing places where intended. However, some vegetation may require trimming to aid visibility, especially where the road curves round close to passing places - for example around the retained passing place approx. 1350m north of the A170 (see Figure AC1 and Photo 8). This would be monitored at other points, such as at the passing places pictured in photos 11, 14, 16, 17, 18, 19, 22 and 26 (mostly where trees rather than hedges line the road).
- There has been some minor damage to verges in some places, from existing traffic, including logging vehicles and local residential/ tourist traffic. This will be monitored and where it is an ongoing issue the Highway Authority will be consulted regarding roadway modification. This is most evident in the forest portion of the route (e.g. Photo 23).
- The road surface is generally good due to its recent repair in 2012 and ongoing monitoring and maintenance. This will be monitored and any worsening of cracks or ponding would be addressed.
- The Transport Management Strategy as outlined in Chapter 5 would be followed and all contractors would be made aware of its requirements and agree to follow it as a condition of contract.

5 Outline Transport Management Plan

5.1 Route Enforcement

- 5.1 All vehicles accessing or departing from the site would use the route as identified in Chapter 2, via the A170, Wykeham Lane, Moor Road and Cockmoor Road. This route would be strictly enforced and all subcontractors and suppliers would be monitored to ensure they use the defined route.
- 5.2 The signing strategy would ensure that the access route is clearly defined for all drivers.
- 5.3 All contractors and drivers would be provided with a copy of the traffic management requirements as part of their terms of engagement. Any contractor not adhering to the relevant route guidance would be disciplined appropriately.

Emergency Route Alternative

- 5.4 This Transport Management Plan and proposed route would ensure that all emergency service vehicles can access the site and surrounding area in a timely manner. However, an alternative access route, assuming Wykeham Lane and Moor Road are unusable is as below.
- Exit the A170 onto Sawdon Lane at Brompton-by-Sawdon;
 - Continue north on Sawdon Lane before turning right onto Cross Lane;
 - Continue north along Kirk Gate, travelling through Sawdon;
 - Continue onto Yederick Road;
 - Continue onto Cockmoor Road to the wellsite on the left.
- 5.5 The Police, Fire and Ambulance service would be given written notice of both the preferred and alternative route on consent of the application, and directly in advance of the period of abandonment and restoration.
- 5.6 The alternative route is approximately 7.5 km from the A170, which is approximately 0.5km longer than the preferred route.

5.2 Large Vehicle Communication Strategy and Method Statement

- 5.7 During the busiest period of restoration (weeks 4 and 5) a direct communications strategy using two-way radios/ mobile phones would be used by all drivers of large vehicles.
- 5.8 Prior to reaching Wykeham Lane all vehicles from the east would park in the lay-by on the southern side of the A170, approximately 1 km east of Wykeham Lane and phone/ radio the site manager who would coordinate movement to Wykeham Lane. The lay-by is approximately 95 m long and 7.5 m wide, and is considered to offer sufficient capacity for the proposed arrangements to work successfully.

- 5.9 On approaching the Wykeham Lane junction, operatives in high visibility clothing would be situated on each of the roads surrounding Wykeham Lane. When large vehicles are turning into Wykeham Lane, other road users would be held temporarily by the operatives. They would be released once the vehicle is fully on Wykeham Lane. Very large vehicles would approach the junction from the west so they could turn left into Wykeham Lane. Standard HGVs would approach from either direction.
- 5.10 Two operatives would be located either side of the road along Wykeham Lane to monitor large vehicles to prevent them from mounting the kerbs. If a vehicle looks as if it would mount the kerb, the operatives would alert the driver who would reposition the vehicle.
- 5.11 Operatives controlling the temporary traffic management (stop/ go boards) on Wykeham Lane would manage vehicle movements through the narrow southern section.
- 5.12 The proposed passing place at the north of Moor Road close to Cockmoor Road (see Figure AC1) would be used to hold northbound vehicles so these could be coordinated with movements out of the site access. A site operative using radio would communicate with the site manager and operatives at the southern section of traffic management.
- 5.13 On exiting from the Ebberston Moor 3 wellsite, large vehicles would travel to the A170 junction, maintaining contact with site operatives. Operatives would guide the vehicle along Wykeham Lane to ensure the vehicle does not mount kerbs. Any other road users would be temporarily held while the vehicle turns out of Wykeham Lane and would be released once the vehicle is fully on the A170.
- 5.14 Very large vehicles would turn left out of Wykeham Lane onto the A170, and may need to cross onto the other side of the road to ensure the manoeuvre can be completed. Standard HGVs would turn onto the A170 in either direction and would not need to cross the central line.
- 5.15 As vehicles travel onto the A170, the operatives would monitor their path to ensure it does not mount the kerb. If a vehicle looks as if it would mount the kerb, the operatives would alert the driver who would reposition the vehicle.
- 5.16 Very large vehicles would be scheduled to approach and leave the site outside of peak hours (08:00-09:30 and 16:00-18:00) to minimise the impact on traffic flow.

5.3 Road Repair

- 5.17 In the event of damage being caused to the road by vehicles accessing or leaving the site, it would be repaired by a third party contractor. The Planning and HSE Engineer would be notified immediately so it can be investigated.

5.4 Local Communications

- 5.18 All households and businesses in Wykeham, and any properties accessed from Wykeham Lane/ Moor Road, would be provided with an information leaflet to explain the operations and timings. This would have a contact should they have further questions.
- 5.19 In advance of any very large vehicles (rather than standard HGVs), properties on the junction of the A170 and Wykeham Lane would be notified by the Planning and HSE Engineer to confirm the date, time and purpose of the movement.

- 5.20 The wellsite is located within Forestry Commission land and surrounding land is actively managed forestry plantation. Every effort will be made to ensure that abandonment/ restoration vehicle movements do not coincide with logging vehicle movements associated with the Forestry Commission. Third Energy is in ongoing contact with the Forestry Commission and both parties will hold contact details of the other party should conflicts arise.

5.5 Internal Parking Arrangements and Manoeuvring Facilities

- 5.21 Appropriate parking and manoeuvring facilities are provided within the site boundary for all vehicles accessing the site (staff and construction vehicles). The internal area is arranged to reduce the number of reversing manoeuvres required, and during abandonment and restoration when more temporary buildings and plant are present on site this will be maintained. Adequate driver visibility will be maintained at all times.
- 5.22 During abandonment and restoration, a banksman will be provided on site.
- 5.23 No vehicles associated with the site would be parked on the adjacent public highway at any time. Any contractor not adhering to the relevant parking guidance would be disciplined appropriately.

5.6 Worksite Security

- 5.24 A central control register is in place to ensure site security is not compromised. This obtains details of vehicles arriving at and departing the site, including driver name, date, time, delivery details, contractor and contact number.

5.7 Highway Cleaning

- 5.25 Through all stages of the development, a contracted road sweeper will be instructed as required. Ongoing monitoring associated with the route condition survey would provide an opportunity to assess the cleanliness of the carriageway on an ongoing basis.

6 Updated Road Condition Survey

- 6.1 This interim road condition survey was undertaken by a site operative on 26 May 2016. The access route was driven and photographs taken along the route. In particular notable locations including lay-bys, verges, junctions and passing places were photographed, as well as any obvious indications of road damage or structural defects, including rutting, crazing or cracking of the road surface, potholes or disintegration of the edge of the carriageway.
- 6.2 A detailed structural analysis was not carried out. Neither was a detailed survey of the condition of the road surface made. This survey updates that undertaken in 2012, which had identified 273 existing road defects. These were repaired prior to the construction of the Ebberston Moor 3 Wellsite in 2013 and monitored throughout works. As road condition has been monitored since 2012, few defects were noted in 2016 and in general, the route is well maintained.
- 6.3 This photographic survey acts as a baseline of the condition of the passing places and road condition in 2016.
- 6.4 It is proposed to carry out an independent route condition survey at the start and finish of the abandonment and restoration phase. This could be attended by a representative of the Highway Authority and Third Energy. In addition, the site operators would monitor the route condition weekly throughout the life of the site. Should there be an accelerated deterioration in the route condition a further detailed independent assessment would be carried out. Any repairs necessary would be made as requested by the Highway Authority within a reasonable time frame, or within 24 hours if the highway is deemed to be in a condition dangerous to road users.
- 6.5 Following completion of the works, Third Energy would restore the highway to a condition at least equal to its condition prior to the commencement of works.
- 6.6 Approximate locations of the photos are shown in Figure AC2 at the end of this section.

Ebberston Moor 3 Wellsite Retention

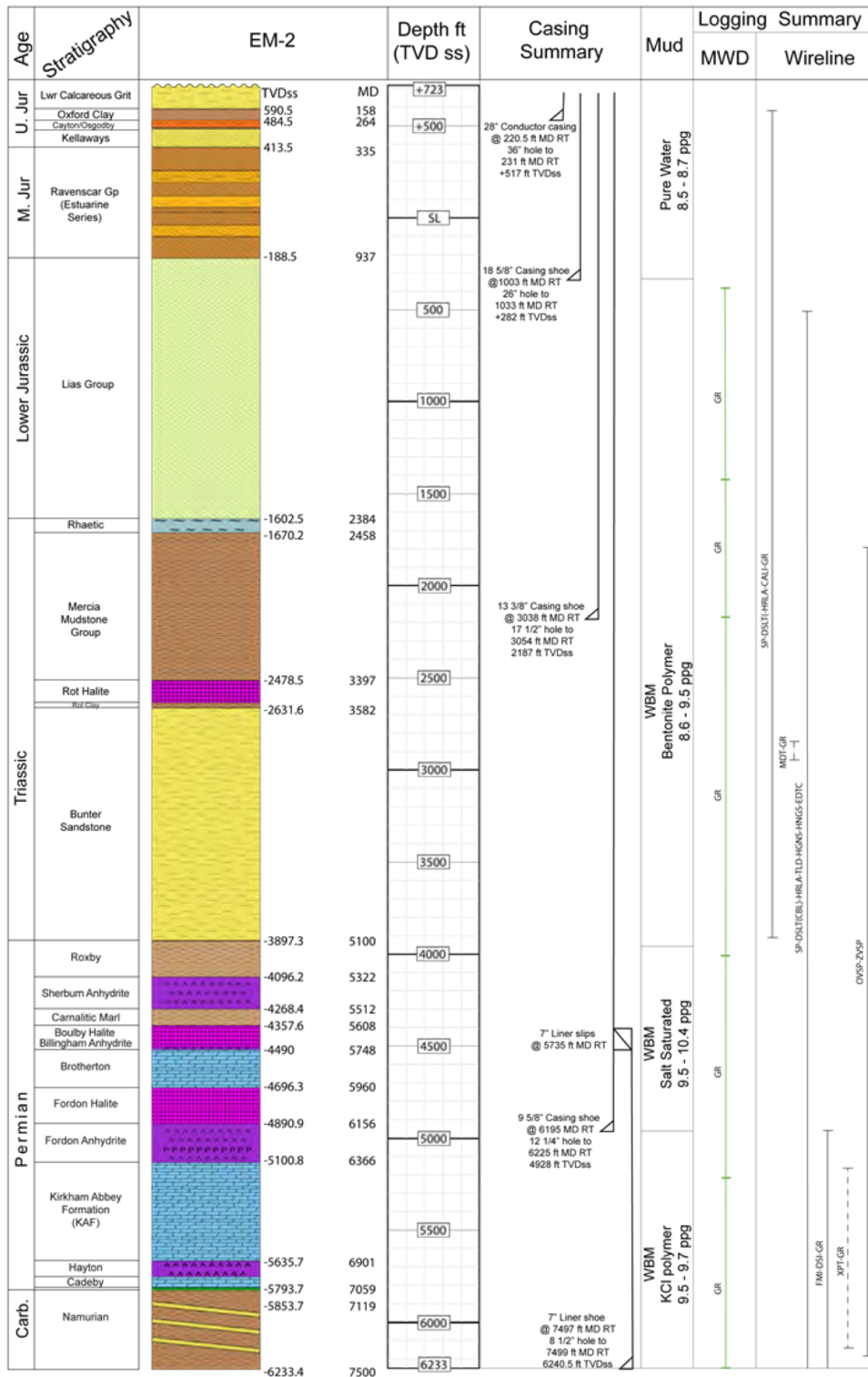


Figure 2.2: Indication of Stratigraphy and Casing of Ebberston Moor B1 well

3 Description of Proposal

3.1 Summary

- 3.1 The Ebberston Moor 3 wellsite in Wykeham Forest, was constructed in 2013 in accordance with North York Moors National Park Authority Consent NYM/2012/0475/FL. An amendment to this, relating to HGV movements was granted as NYM/2013/0501/FL. The appraisal well (Ebberston Moor B1) was drilled in Summer 2013.
- 3.2 Condition 1 of the planning consent NYM/2013/0501/FL states the permission granted is valid for three years from the date of the permission. The development requires to be removed from the site before the consent expires and the site restored to its former condition before that date.
- 3.3 Third Energy wishes to apply for the retention of the wellsite while further assessment of the regional geology is undertaken. The application is not to carry out further drilling works on the site. The appraisal well is suspended and the wellsite is safe and secure. Operational works would comprise solely maintenance of the site and visits to the well to ensure it is in safe condition, in line with requirements associated with Health and Safety regulations.
- 3.4 An extension of the life of the wellsite for a further three years is requested.
- 3.5 At the end of three years, the well would be plugged and abandoned and the site would be restored to a condition to allow appropriate continued management by the original landowner (in this case the Forestry Commission).
- 3.6 It is possible that a further application may be made to drill and test an additional well at the Ebberston Moor 3 wellsite within the extended period. Evidently such an application would be subject to further survey and assessment with relevant information provided alongside the planning application, and would be determined on its own merits in accordance with the Development Plan at the time.
- 3.7 However, this application is for:
- Retention of the existing Ebberston Moor 3 wellsite for three years;
 - Access onto the site to undertake routine monitoring and maintenance of the well;
 - Plugging and abandoning the Ebberston Moor B1 well in accordance with Oil and Gas UK guidance within the consented three year period; and
 - Restoring the wellsite to its pre-development condition in accordance with requirements of the landowner.
- 3.8 Works associated with abandonment and restoration of the site are estimated to take five weeks. A period of aftercare would be carried out to ensure successful restoration.

3.2 Justification and Need for the Development

- 3.9 It is acknowledged that the proposed development would not produce gas. However, it would retain the capacity of the wellsite for potential production in the future, should Third Energy's appraisal of reserves in the area indicate extraction is viable. Any application for gas production

or drilling of additional wells would be subject to further permitting and planning consent as described in Section 1.4.

- 3.10 This section outlines the justification for the proposed development (i.e. why an extension is required), and the need, at a national and local level, for the site and its potential gas reserves.

Justification

- 3.11 Third Energy is committed to the exploration and development of indigenous gas resources from its licenced areas. Appraisal of gas reserves in the area around the Ebberston Moor 3 wellsite is ongoing – in part from information gathered from the Ebberston Moor B1 appraisal well. However, it is not yet known if reserves would be commercially or technically feasible to extract. As with other forms of mineral applications, there is local and national policy support for knowing the nature and scale of the nation’s mineral resources including energy minerals.
- 3.12 In addition, Third Energy is assessing the potential to increase production from existing wells, as part of the “Bypass Gas Recovery Pilot” (BGRP). The BGRP programme aims to increase gas recovery from the field by lowering the water table to reduce water production from the existing wells, and injecting this produced water into the Sherwood Sandstone formation into specially modified wells.
- 3.13 A trial of this process is consented at Pickering 1. If this is successful then the concept would be used Ebberston South and if that is successful, then the Ebberston Moor 3 site could feature in the much longer term.
- 3.14 At present the wellsite (with the currently suspended appraisal well) is serviced by Third Energy’s existing employees based at Knapton, also using local contractors where possible. This would continue if the wellsite were retained.
- 3.15 Should the application not be granted the well would require to be plugged and abandoned and the wellsite restored. If ongoing appraisal then indicated gas reserves were present, and could be extracted from the wellsite location, or the location would be suitable to use within the BGRP programme, any application would require restoration to be undone, the entire wellsite to be re-established, and the abandoned well to be drilled out or a new well drilled. This would inevitably create more disturbance to the local area than delaying restoration of the existing site until its future use is clarified.
- 3.16 As such, it is suggested that there is justification to extend the timescale of the temporary development which, if no viable gas is found and no further application made, would be returned back to agricultural/ forestry use.

Need

- 3.17 Should gas be produced in the future (either from the Ebberston Moor 3 wellsite, or from other wellsites as a result of water-lowering from the Ebberston Moor 3 site) it would feed into the local gathering system and be transported to Knapton Generating Station. This generating station, established in 1995, is supplied from gas produced from the Kirby Misperton, Malton, Pickering and Marishes fields within Third Energy’s licenced areas in the Vale of Pickering. It provides a source of power across North Yorkshire and is currently the largest generating station in the UK to use onshore produced gas, avoiding the need for locally produced gas to

be fed into the National Transmission System. Since 1995 it has generated over 2,000,000 MWh of electricity with an excellent safety and environmental record.

- 3.18 The Ebberston Moor South development, consented in 2015, would link the Ebberston Moor gas field to the Knapton Generating Station via a new 14km pipeline. Therefore, any gas produced from Ebberston Moor 3 would require minimal additional infrastructure to transport it to the generating station to produce locally sourced power.
- 3.19 As well as this defined local need, continued gas supply is of critical importance to the UK as a whole. National policy, as indicated in Section 4.2, is supportive of establishing indigenous sources of gas to meet our needs. As outlined in the supporting statement accompanying the original application, UK demand for gas will continue for the foreseeable future.
- 3.20 Figure 3.1 overleaf indicates that while demand for renewables, nuclear electricity and other electricity grows steadily whilst demand for solid fossil fuels like anthracite declines rapidly, primary energy demand for oil and gas stays relatively static over the projection period to 2035.
- 3.21 National Grid has forecast four energy scenarios predicting gas (and electricity) demand up to 2030 in their “Future Energy Scenarios”⁷ (FES) document. Gas use varies depending on which assumptions are made. However, in 2030 the UKs annual gas demand varies from 602 TWh (in the “Gone Green” scenario) to 851 TWh (in the “Consumer Power” scenario) compared to approximately 773 TWh in 2014⁸.
- 3.22 In 2014, UK net imports of gas totalled approximately 350 TWh – approximately 45% of our consumption. This is predicted to increase as gas production from the North Sea declines over the next decade (with a short term rise in production predicted until 2018) yet our reliance on gas remains relatively steady, especially in domestic heating and in industry, even as reliance on gas in electricity production falls. The FES predictions vary, with import dependency rising to between 61% and 88% by 2030 in three of the four scenarios (the fourth scenario allows for significant UK shale gas production meaning import dependency would fall).
- 3.23 The combination of this national requirement for gas against a background of declining indigenous supplies and increasing imports, and an identified local need for gas in the Knapton Generating Station implies a need for the proposed development.

⁷ National Grid (2015) Future Energy Scenarios UK gas and electricity transmission <http://fes.nationalgrid.com/fes-document/>

⁸ DECC (2015) Digest of UK Energy Statistics 2015 - <https://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes>

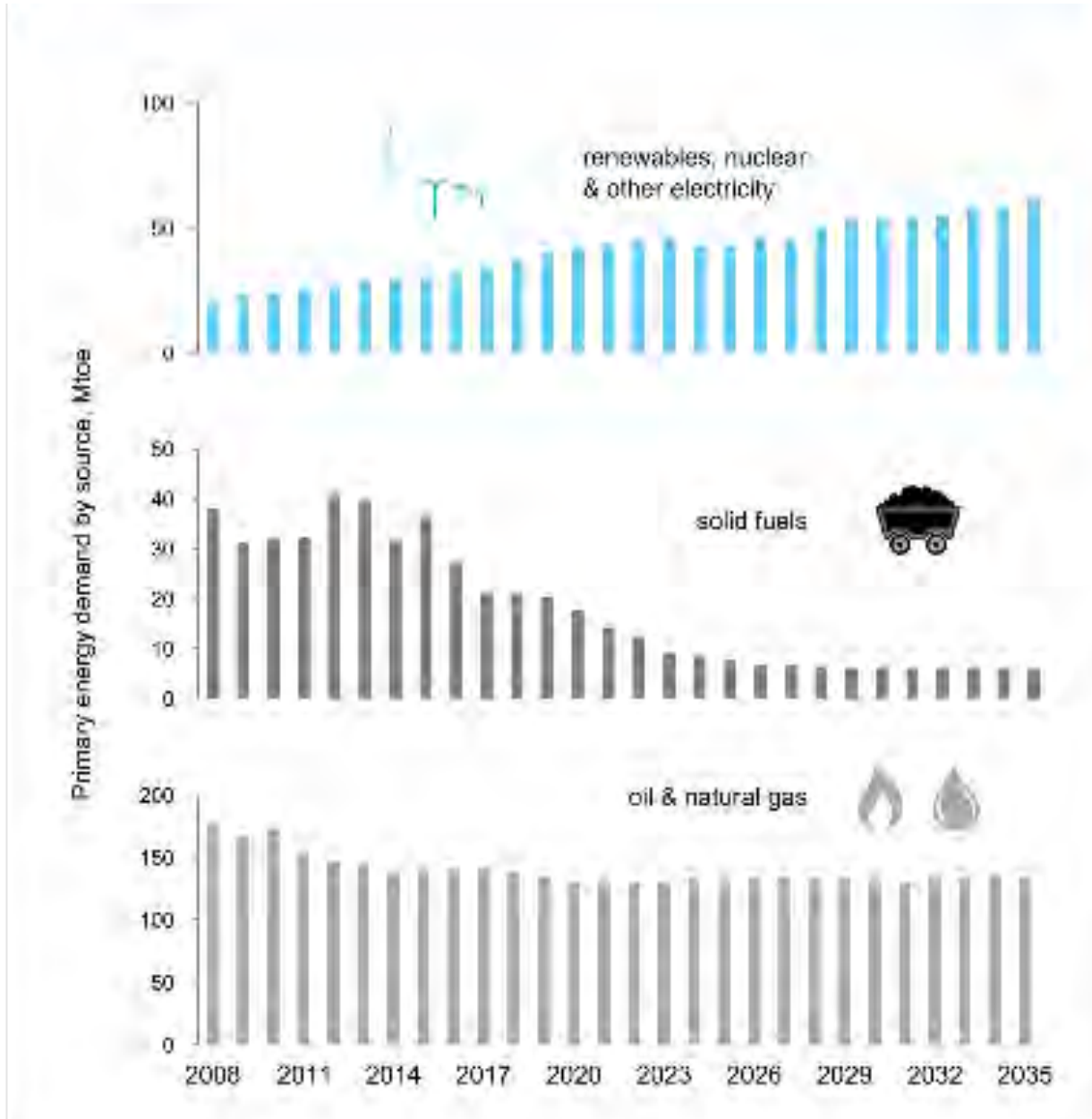


Figure 3.1 Predicted requirement for different sources of energy until 2035 (taken from DECC’s Updated energy and emissions projections 2015 - Figure 4.1⁹)

⁹ DECC (2015) Updated energy and emissions projections 2015 (revised February 2016) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501292/eepReport2015_160205.pdf

3.3 Planning History

3.24 Planning Consent NYM/2012/0475/FL involved:

- felling of coniferous commercial trees to create a clearing some 110 metres by 85 metres with access from Cockmoor Road;
- stripping soil and storing for reinstatement;
- development of wellsite with a pollution membrane installed, bund created and hardcore laid and fence erected; this would take up to six weeks;
- development of cellars and conductors on the wellsite in advance of the main drilling operations, using a small scale geotechnical drilling rig;
- installation of drilling rig (up to 49m); up to two weeks;
- drilling up to two appraisal wells (only one was drilled), each taking six to 12 weeks to drill;
- demobilisation of drilling rig; up to one week;
- extended flow test of well for up to 13 weeks (this was not undertaken);
- restoration of wellsite if no gas was found; estimated to take up to five weeks.

3.25 Construction and testing were consented 07.00 – 18.00 hours six to seven days a week and drilling for 24 hours a day seven days a week. Construction works involved 10 personnel and approximately five car/ LGV and six HGV movements per day. Additional movements were consented during the drilling stage.

3.26 Consent was given for abandonment, restoration and aftercare in accordance with a Restoration Plan.

3.27 The three-year temporary permission was granted in recognition of the requirement to schedule rigs, and recognised that other temporary permissions had been granted in the forests at Ebberston Moor (Ebberston 1 and Ebberston 2).

3.28 It was noted in the Officer's report that any further boreholes or extraction would need to be the subject of other permissions, though the potential was raised that any gas produced would be piped to Knapton Generating Station or the gas national grid which runs south of the A170. An option to pipe gas to the Thornton-le-Dale gas plant (subject to commercial negotiations) was also raised¹⁰.

3.29 Conditions relating to timescales, noise attenuation measures, a programme of archaeological work, and various works associated with highway maintenance and improvement (including junction widening, drainage works, development of passing places and a pre-development road condition survey and highway verge reinstatement) were attached to the consent.

¹⁰ This gas plant, consented on appeal, will not now be constructed and any gas in the area would be delivered to Knapton.

- 3.30 The amended consent NYM/2013/0501/FL allowed additional HGVs to access the site, with the same restrictions in place (having regard for several conditions attached to the earlier consent having been discharged).

3.4 Pre application consultation

Pre application consultation for 2012 application

- 3.31 Consultation was undertaken in 2012 as part of the pre application process, and during the planning process of the original application. Key consultees and their comments are summarised below:

- North York Moors National Park Authority – Planning: Identified that application must include assessments of ecology, noise, archaeology and hydrogeology.
- North York Moors National Park Authority – Ecology: Identified that there were vulnerable bird species breeding in the forest which must be taken into account. Assuming works are undertaken outside the breeding season (breeding season is September to March inclusive) no conflict would be predicted.
- North York Moors National Park Authority – Archaeology: Requested that a desk-based archaeology study was completed.
- North York Moors National Park Authority – Public Rights of Way: Identified proximity of the Tabular Hills Walk and Moor-to-Sea cycle route to the site.
- North York Moors National Park Authority – Woodland Officer: Indicated that the site was in a thinned Sitka spruce plantation with no records of particular woodland interest or sensitivity.
- North Yorkshire County Council – Highways: It was anticipated that there could be a significant increase in the numbers of large vehicles on the road network at certain phases, and an assessment of the types and numbers was requested. In addition, an assessment of the current condition of the highways and an inspection regime was requested. Details of highways works required, a consideration of alternative routes and a schedule of proposed traffic management during the different phases was requested.
- Environment Agency: Requested a Hydrogeological Risk Assessment and indicated that the site was due to be designated as a Zone 2 Groundwater Source Protection Zone (GWSPZ).
- Natural England: No objections or specific comments due to nature and scale of proposal.
- English Heritage: Assessment of heritage assets should be undertaken.
- Yorkshire Wildlife Trust: Indicated that site was close to Living Landscape and areas of Ancient Woodland, though no specific comments made.

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- Yorkshire Water: Requested that site considered as being within GWSPZ due to sensitivity, and that a hydrogeological risk assessment was completed.
 - Northern Power Grid & Sabic UK: No utilities were identified which could be affected by the development.
- 3.32 Reports submitted with the 2012 application included an Ecological Phase 1 study; Noise Assessment; Hydrogeological Risk Assessment; Archaeological study; Road Safety Audit, Route Condition Report and Transport Management Plan; and Restoration Plan. These reports were taken into account in determination of the original application, and establishment of planning conditions.
- 3.33 These conditions included submission of a Written Scheme of Investigation for archaeological work, an application for drainage works, provision of wheel washing facilities and provision of a series of passing places on Moor Road passing through Wykeham forest. All relevant conditions were discharged in advance of operations starting on site in 2013.

Pre-application consultation for current application

- 3.34 Pre-application consultation with North York Moors National Park Authority Planning department was undertaken in June 2016 for this proposed development.
- 3.35 The above issues were considered and although the receptors would remain, it was considered that impacts on archaeology, hydrogeology, public rights of way, landscape, ecology and noise would have occurred primarily with the original development of the site and drilling the appraisal well. No further measures to preserve these were proposed other than maintenance of measures in the original application.
- 3.36 The key issues were considered to be justification for the proposed time extension of the consented development, and retention of mitigation to ensure minimal impacts on surrounding receptors (for example, in relation to screening of the site from the road, retention of passing places, and good practice measures to protect receptors including groundwater and surface water). Updates of the ecology (and ornithology) and road condition assessments were addressed.
- 3.37 The principle of a condition of consent requiring proportionate insurance to cover restoration and remediation in the event of an accidental pollution event was agreed as acceptable. The potential to update the restoration plan taking account of any additional ecological sensitivities was also discussed.

Screening for Environmental Impact Assessment

- 3.38 Under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (EIA Regulations) Section 4, it is necessary for all developments to be screened. The 2012 application received a screening opinion that the development was not EIA development having regard for its nature, size and location.
- 3.39 Given that the proposed development is to retain an existing consented site, the NYMNPA accepts that the proposal is not EIA development.

3.5 Proposed Works

Operational Phase (Well Maintenance)

- 3.40 The site is currently screened from the road by a perimeter fence with two access points: the main gate from which all vehicles would access the site and an emergency exit at the rear of the site. This fence and access points would be retained and maintained.
- 3.41 The site would be visited routinely to check the suspended well (including pressure monitoring) and occasionally pump out the cellar and drainage ditches. This forms a containment area from which the well was drilled, housing the wellhead. The cellar is constructed from concrete rings, approximately 2400mm nominal diameter. The impermeable membrane is incorporated into the cellar construction to maintain the integrity of the site.
- 3.42 Site visits would involve no more than 2 car/ LGV movements per day, 07.00 – 18.00 hours, on any day of the week.
- 3.43 Waste water from pumping would be removed from the site and discharged to a licensed waste facility.
- 3.44 All maintenance operations would be undertaken in accordance with Third Energy's requirements under The Borehole Sites and Operations Regulations 1995, The Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 (DCR 1996), The Management of Health and Safety at Work Regulations 1999, as well as Third Energy's Health, Safety and Environmental Management System.
- 3.45 In particular, DCR 1996 requires operators to ensure that a well is "...maintained, suspended and abandoned such that there is no unplanned escape of fluids from the well and that the risks to the health and safety of person from it or anything in it, or in strata to which it is connected, are as low as is reasonably practicable".
- 3.46 As part of the operations, a list would be maintained of all operatives onsite. This helps to ensure there is no unauthorised access and is used should an emergency incident occur.

Abandonment and Restoration Phase

- 3.47 Assuming no further application is brought forward the well would be abandoned and the site restored to its previous condition, followed by aftercare. A restoration plan is included in Appendix A. All abandonment works would require to be notified to the HSE and OGA prior to commencing any operations.
- 3.48 It is anticipated that abandonment and restoration works would be completed within five or six weeks, with work carried out Monday to Saturday, 07:00 to 18:00. It is anticipated it would involve approximately 10 personnel (20 two-way staff movements) with on average approximately five additional car/ LGV and six HGV movements per day. However, this would not be evenly spread over the period, with the busiest period being weeks 4 and 5 of the abandonment and restoration phase, with up to 116 movements of large vehicles per week (20 per day over a six-day week). The remainder of the period would be much quieter, with approximately 16 HGV movements per week.

Ebberston Moor 3 Wellsite Retention

Abandonment

- 3.49 The well would be abandoned in accordance with industry best practice and guidance set out by Oil and Gas UK. At present the well is suspended with a “kill string” to stop any gas from flowing to the surface.
- 3.50 The following equipment would be brought onto site for the abandonment period (and subsequently removed):
- Storage facilities and cabins (welfare cabins etc.)
 - Fire water tank
 - Abandonment/ workover rig – this would be smaller than that consented to drill the appraisal borehole, with less ancillary equipment.
- 3.51 Mechanical plugs and cement plugs would be set in the well bore and within the steel casing. The casing would then be cut at approximately 1.5 metres below ground level and a steel plate welded to the remaining casing stub. The wellhead and current metal guard around the wellhead would be removed for use on another wellsite. The cellar and conductor would also be removed.

Restoration

- 3.52 The restoration phase would be the reverse of the original construction phase and would involve construction vehicles such as low-loaders, small cranes and dozers. The following site equipment and infrastructure would be removed.
- Security wooden fencing and metal gates;
 - Hardcore Type 1; and
 - Impermeable Membrane
- 3.53 Hardcore would be removed from the site before removal of the membrane so any contaminants which had come into contact with the site surface could not be washed or otherwise enter the soil underlying the site. The restoration would include the replacement of the soils, which were stored in earth bunds around the perimeter of the site. This would be carried out in accordance with best practice guidance.
- 3.54 Where possible, waste arising from the abandonment and restoration process would be recycled, however where this is not possible waste would be disposed of at a licensed waste disposal facility.

Aftercare

- 3.55 Following completion of the restoration phase, the MPA would be invited to inspect the site operations to ensure that the work meets with their approval. An aftercare programme would be undertaken over a period of five years, as outlined in Appendix A. This would ensure the successful restoration of the land to its previous condition.

Good Site Practice

- 3.56 Third Energy is committed to carrying out its operations according to best practice standards, as well as meeting statutory legislation.
- 3.57 The following good practice measures would be employed by workers and contractors on site to minimise disruption during the operation (maintenance) stage.
- All mitigation and environmental protection measures put in place (for this proposal or for the 2012/2013 consent) would be inspected regularly and suitably maintained to ensure they remain fully operational and effective. Where failures or shortfalls within mitigation measures are noted, these would be recorded, suitable action identified and undertaken within a suitable timeframe.
 - Insurance cover would be held for the lifetime of the site, for its remediation, and the remediation of any off-site affected areas, in the event of a significant accidental pollution event.
 - Contingency Plans would ensure that emergency equipment would be available on-site i.e. spill kits and absorbent materials, information on where and from whom to seek advice, and who should be informed in the event of a pollution incident.
 - Any necessary chemicals on site during operation would be stored according to recommended guidance and legislation (e.g. Control of Substances Hazardous to Health Regulations 2002 (COSHH), Control of Pollution (Oil Storage) (England) Regulations 2001 and Environment Agency guidelines including GP3 (Groundwater Protection Policy and Practice))
 - Any complaints would be handled promptly and courteously.
 - Method statements for all activities that pose a risk to the water environment have been produced as part of Third Energy's Environmental Protection Plan, and clearly state what mitigation measures and monitoring requirements should be in place prior to and while the activity is underway. In particular, spill kits would be placed around the site. Any spills would be cleaned up and disposed of via a licenced waste carrier.
 - Any vehicles would be refuelled and maintained off site to minimise the potential for leaks.
 - Works would only take place in the day time between 0700 and 1800. Any necessary deliveries would take place in these hours. No lighting would be required as works would only take place in daylight.
 - A Traffic Management Plan (presented in outline in Appendix C as an update to the consented plan in the 2013 consent) would be put in place to ensure proper usage of the local road network, ensure drivers are sensitive to the local road conditions and local residences. Designated passing places would be used where available.

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- Access to the site would only be by the approved access route (Application Plan 4) except if this is blocked or access is prevented for some other reason. An alternative emergency route is presented in Appendix C.
- Any manoeuvring would take place within the wellsite and not on the public road.

3.58 At the abandonment and restoration stage the following additional measures would be put in place, as well as continuing the measures above.

- All site works would be carried out by a fully qualified ground work contractor.
- Works would only take place between 07:00 and 18:00 Monday to Saturday.
- The timing of the works would be planned to avoid groundwork during periods of high rainfall, as far as reasonably practicable, when the risk of fine sediment being transported from earth works is significantly increased.
- Restoration works would be undertaken to ensure that drainage patterns and water quality are maintained. Silt management would be practiced with nearby watercourses checked during periods of high rainfall or construction activities with potential for significant run-off. Additional mitigation would be implemented if required
- All surface runoff during the abandonment and restoration phase would use the existing drainage and settlement system on site to provide settlement and separation of solids from surface water run-off during wet periods. Any flows from the wellpad or from vehicle areas would be separated through an oil and silt trap for removal of all silts and grits.
- All fuel, oil and lubricant storage would be in impervious, double bunded areas and storage would be at an appropriate distance from watercourses and field drains. Standing machinery would have drip trays placed underneath to prevent oil and fuel leaks causing pollution. Drip trays would have minimum capacity of 110% of the fuel tank. These measures would comply with the requirements of the Control of Pollution (Oil Storage) (England) Regulations 2001.
- Cement batching on site if required would be undertaken only in a designated area, away from watercourses, private water supplies, areas of standing water and on an impermeable surface. Batching and pouring would not be undertaken during adverse weather.
- All waste (including waste from temporary and permanent welfare facilities and all construction waste) would be stored securely and removed regularly by a licensed contractor and disposed of offsite at a licenced waste facility. In accordance with the operator's "Duty of Care".
- Where possible waste would be separated for recycling, prior to removal from site by a licenced contractor. Records of waste would be kept.

- Any welfare facilities provided onsite would be provided in self-contained cabins. These would be emptied on a regular basis by a licenced waste carrier and disposed of at suitably licenced facilities.
- Dust and airborne debris would be limited by watering down of surfaces when conditions require, to prevent wind scouring the dust. Skips would be covered to prevent wind blow.
- Dust emissions would be minimised by preventing vehicles from idling, vehicle cleaning and specific fixed wheel washing on leaving site and ensuring loads entering and leaving site are covered.
- Roads would be maintained to pre-activity standard with any mud or debris removed as required.
- All abandonment and restoration plant would be fitted with silencers where appropriate. All plant would be mounted so as to eliminate vibration and misalignment. All units would be tested to confirm no intermittent or tonal noise.
- Use of audible vehicle reversing alarms would be minimised.
- Where possible, abandonment and restoration works would be avoided in the bird breeding season, or following a survey by a suitably qualified ecologist to ensure no damage would be caused to any birds using nearby trees or vegetation. If nesting birds were detected, then a suitable stand-off would be marked out around the area and work in that area would be delayed until the birds and their young have dispersed.
- Restoration would be carried out to best agricultural/forestry practice taking account of existing site specific considerations at the time.
- Any temporary lighting (if needed for safety reasons) for abandonment and restoration works would be angled inwards to the wellsite floor and be designed not to spill into the surrounding environment. Such lighting would be low intensity (e.g. sodium lamps) as bats and invertebrate prey items are less sensitive to this lighting than high pressure sodium or mercury lamps.
- The Transport Management Plan would be reviewed at the time to ensure it is appropriate for the proposed abandonment and restoration works.
- Where vehicle movements are required to take place on soft ground during restoration, these would be limited to the absolute minimum to prevent damage to the newly laid soil and creation of sediment laden runoff.

Safety Considerations

- 3.59 Measures to ensure the health and safety of all operations would be undertaken as required by The Borehole Sites and Operations Regulations 1995, The Management of Health and Safety at Work Regulations 1999 and Third Energy's own Health, Safety and Environmental Management System.

4 Planning Context

- 4.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 and section 70(2) of the Town and Country Planning Act 1990 set out that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise.
- 4.2 In submitting this planning application, Third Energy has considered the proposals in relation to the development plan and material considerations including national planning policy and guidance and emerging local policy.
- 4.3 Although the proposed development is not for hydrocarbon exploration, it is to retain a site which has historically been used for hydrocarbon exploration. There is also the potential for a further application to be submitted (which would be determined on its own merits) for further hydrocarbon exploration or to increase production of other wells elsewhere in the field. If this potential did not exist, there would be no requirement for the proposed development. Therefore, policies relating to mineral and hydrocarbon exploration are considered the most applicable.
- 4.4 The statutory development plan for the site has not changed since the original applications were determined in 2012/ 2013. However, national policy and other material considerations have evolved.

4.1 Development Plan

- 4.5 The development plan for the Ebberston Moor 3 wellsite comprises the Core Strategy and Development Policies document of the North York Moors National Park. This sets out the policies which guide where new development will take place in the National Park and to determine planning applications up until 2026. The Helmsley Local Plan and Whitby Business Park Area Action Plan also form part of the development plan, but these do not cover the area in which the site is located. The Core Strategy and Development Policies document was adopted by the National Park Authority in November 2008.
- 4.6 At the time of adoption, the Core Strategy and Development Policies document sat alongside the Regional Spatial Strategy (Yorkshire and Humber Plan Regional Spatial Strategy to 2026). However, this was revoked in 2010.
- 4.7 Core Policies relevant to the proposed development are summarised below, and an assessment of the proposed development against them provided in Paragraph 4.11 onwards:
- **Core Policy A – Delivering National Park Purposes and Sustainable Development:** This seeks to further the National Park purposes and duty by encouraging a more sustainable future for the Park and its communities whilst conserving and enhancing the Park's special qualities. Priority will be given to:
 - Providing a scale of development and level of activity that will not have an unacceptable impact on the wider landscape or the quiet enjoyment, peace and tranquillity of the Park, nor detract from the quality of life of local residents or the experience of visitors.

- Providing for development in location and of a scale which will support the character and function of individual settlements.
 - Maintaining and enhancing the natural environment and conditions for biodiversity and geodiversity.
 - Conserving and enhancing the landscape, settlement, building features and historic assets of the landscape character areas.
 - Applying the principles of sustainable design and energy use to new development.
 - Strengthening and diversifying the rural economy and providing tourism based opportunities for the understanding and enjoyment of the Park's special qualities.
 - Enabling access to services, facilities, jobs and technology whilst minimising the environmental impacts of transport.
- **Core Policy C – Natural Environment, Biodiversity and Geodiversity:** The quality and diversity of the natural environment of the North York Moors National Park will be conserved and enhanced. Conditions for biodiversity will be maintained and improved and important geodiversity assets will be protected. Protected sites and species will be afforded the highest level of protection with priority also given to local aims and targets for the natural environment. All developments, projects and activities will be expected to:
 - Provide an appropriate level of protection to legally protected sites and species.
 - Maintain, and where appropriate enhance, conditions for priority habitats and species identified in the North York Moors Local Biodiversity Action Plan.
 - Maintain and where appropriate enhance recognised geodiversity assets.
 - Maintain and where appropriate enhance other sites, features, species or networks of ecological or geological interest and provide for the appropriate management of these.
 - Maximise opportunities for enhancement of ecological or geological assets, particularly in line with the North York Moors Local Biodiversity Action Plan, Tees Valley and North East Yorkshire Geodiversity Action Plans and the regional Habitat Enhancement Areas.
 - Mitigate against any necessary impacts through appropriate habitat creation, restoration or enhancement on site or elsewhere.
 - **Development Policy 1 – Environmental Protection:** To conserve and enhance the special qualities of the North York Moors National Park, development will only be permitted where:

- It will not have an unacceptable adverse impact on surface and ground water, soil, air quality and agricultural land.
- It will not generate unacceptable levels of noise, vibration, activity or light pollution.
- There will be no adverse effects arising from sources of pollution which would impact on the health, safety and amenity of the public and users of the development.
- Land stability can be achieved without causing unacceptable environmental or landscape impact.
- There is or will be sufficient infrastructure capacity to accommodate the demand generated by the development.
- **Development Policy 2 – Flood Risk:** Development will only be permitted where:
 - It complies with the sequential approach as set out in Planning Policy Statement 25.
 - It will not lead to an increase in flood risk elsewhere.
 - A site specific Flood Risk Assessment is submitted where required.
 - In the case of flood defences, they form part of a Catchment Flood Management Plan or other approved programme of flood management.
- **Core Policy E: Minerals:** Minerals extraction in the National Park or the re-working of former quarries will be permitted where:
 - There are no suitable sources of previously used materials to meet the identified need.
 - Any waste materials from extraction will be re-used or recycled wherever possible.
 - A scheme for restoration and after-use of the site based upon protecting and enhancing the special qualities of the National Park forms an integral part of the proposal.
- All minerals developments (except development which would compromise the future extraction of important building stone at existing or former quarries) will be considered against the major development tests.

(This policy will eventually be replaced by the emerging Minerals and Waste Joint Plan. However, this is not yet adopted).

- **Development Policy 7: Archaeological Assets:** Proposals for development that would have an unacceptable impact on the integrity or setting of a Scheduled Monument, or other sites or remains considered to be of national archaeological importance will not be permitted. In the case of sites or remains of regional or local importance, development proposals

will only be permitted where the archaeological interest is capable of being preserved in situ. Where this is not justifiable or feasible, permission will only be granted where provision is made for appropriate assessment and evaluation will be required to be submitted as part of the planning application in areas of known or potential archaeological interest.

- 4.8 Section 6.31 of the Core Strategy and Development Policies consider oil and gas specifically and states:
- As with other minerals developments, the extraction of oil and gas should only take place in the Park in exceptional circumstances and will therefore be subject to rigorous examination. Proposals for oil and gas exploration, appraisal and production will be considered against the policy in Annex 4 of Minerals Policy Statement 1¹¹.
- 4.9 The policies in the Core Strategy and Development Policies were assessed against the National Planning Policy Framework (NPPF), following its introduction in March 2012. In particular, the NPPF's emphasis on sustainable development was tested against the Core Strategy. It was noted that the several NPPF policies relating to Minerals are not reflected in the existing Core Strategy and Development Policies, which do not contain detailed criteria for assessing minerals applications as this was contained in Minerals Policy Statements, which were replaced by the NPPF. The assessment concluded that in this case, effects would need to be considered against Development Policy 1 Environmental Protection.
- 4.10 The NPPF does not contain a specific presumption against major minerals development in National Parks although paragraph 116 of the NPPF states that planning permission should be refused for "major developments" in National Parks except in exceptional circumstances. A "major development test" is provided in the NPPF, which includes "national considerations".

Assessment of Proposed Development against Development Plan

- 4.11 In relation to Core Policy A, the proposals would not have an unacceptable impact on the setting of the National Park, due to the short duration and temporary nature of the development. The retention of the existing site would not create any new feature in the National Park, and there would be no aspects of the proposed development which would be incongruous in the setting. No proposed aspect of the development (including transport impact) would result in a greater impact than consented in 2013.
- 4.12 It is concluded that the continuation of activities would not impact on biodiversity or the landscape or the quiet enjoyment, peace and tranquillity of the Park, and would not affect the special features of the National Park or its sustainable management.
- 4.13 In relation to Core Policy C mitigation has been incorporated into the proposals to minimise any effects. An independent ecological study considered local biodiversity and the existing conditions on and around the proposed development location. No protected species were identified that would be adversely affected by the proposed development. On completion of the proposed temporary operations, the site would be restored to its pre-development condition for appropriate management.

¹¹ Minerals Policy Statement 1 was replaced by the NPPF in 2012.

- 4.14 In relation to Development Policy 1, there would be no adverse impacts on soil or agricultural land as the site is an existing wellsite. Impacts on groundwater would be avoided through the good practice and mitigation outlined in Section 3.5 and 5.7, having regard for the hydrogeology risk assessment completed in 2012 for the site. Air quality impacts would be restricted to emissions from vehicles entering and servicing the site and possible dust emissions during the abandonment and restoration phase, which would be minimised through the good practice outlined in Section 5.9. The proposed development would not produce gas so there would be no significant climate change impacts arising. Similarly, noise and vibration impacts would be restricted to the abandonment and restoration phase, which would also result in the most activity on the site (as previously consented) and controlled through good practice.
- 4.15 Development Policy 2 was addressed in the 2012 application. It was concluded that the development was not at risk of flood due to its location and elevation, and would not lead to an increase in flood risk elsewhere. A flood risk assessment is not required to be submitted as it is not within an area at risk of flooding and is less than 1.0 hectare in size.
- 4.16 In relation to Core Policy E, it should be noted that the proposed development is not for mineral extraction, and the site's acceptability for mineral extraction was confirmed with the 2012/2013 consents. Notwithstanding, the Major Development Tests (outlined in paragraph 116 of NPPF) which must be applied for minerals developments according to Core Policy E are considered to be met:
- Need for the development is outlined in Section 3.2. The retention of the wellsite would have potential future benefit in terms of meeting national need for gas either from the site itself, or elsewhere in the field. However, in the short term, the proposed retention of the wellsite would minimise local disruption caused by restoration and subsequent reestablishment of the site if ongoing appraisal indicated further exploration would be beneficial. Retention of the wellsite would also provide ongoing work for employees and local contractors servicing the site.
 - The site is in its current location as the understanding of the local geology indicated that there was good potential for gas. Third Energy's PL77 is located wholly in the National Park. Hydrocarbons (as with any minerals) can only be extracted where they are found and there is therefore no potential for the site to be located outside of the National Park.
 - The impacts associated with this development can be removed or reduced through careful consideration of mitigation. This application sets out the mitigation which has been incorporated into the proposals to minimise any impacts.
- 4.17 It is noted that the waste hierarchy would be applied, and waste arising from the proposed development would be reused where possible. For example, during restoration it is proposed to reuse fencing and infrastructure on other sites. Where waste cannot be reused it would be recycled or disposed: for example, wastewater would be disposed of by a licensed contractor. A scheme for restoration and afteruse of the site is held in Appendix A, which would allow the site to be restored for management towards its pre-development use, in accordance with the requirements of the landowner.

- 4.18 Development Policy 7 was addressed in the 2012 application, and it was noted that the site was located in an area which had some archaeological interest. A desktop study was completed to inform the application, identifying there were no known archaeological records on the site and low archaeological potential given the forested nature of the site, and past ground disturbance. A programme of archaeological works was secured and undertaken as a condition of consent. The proposed development is to retain the existing wellsite developed following this programme of works, followed by abandonment and restoration (using similar plant as used to develop the site). Therefore, no direct impact on any archaeological interest would occur. Although there are some scheduled monuments in the vicinity, associated with historic settlements in the area, the forested nature of the area, and small scale, temporary nature of the wellsite means their setting would not be impacted. There are no listed buildings in the area that could be impacted in terms of their setting.
- 4.19 It is also noted that in 2012 the application was assessed against Development Policy 23, indicating that road improvements should complement the locality and be the minimum needed to achieve safe access. Although no road improvements are proposed as part of the current proposal, Third Energy has committed to make good any damage to the road caused by site vehicles and a road condition survey is held at Appendix C. Improvements introduced as a planning condition (and those beyond that requirement) have benefitted the area and improved safety along the access road.
- 4.20 Therefore, it is considered that the proposed development does not conflict with any relevant policies in the development plan.

4.2 Material Considerations

- 4.21 This section outlines material considerations relevant to the proposed development. In national terms this includes the National Planning Policy Framework (NPPF) and other statements of National Policy. In local terms, material considerations include adopted guidance, including the National Park Management Plan, and emerging policy: in particular, the draft policies for consultation in the Minerals and Waste Joint Plan.
- 4.22 An assessment against material considerations is provided at the end of this section (page 36).

National Material Considerations

National Planning Policy Framework

- 4.23 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It must be taken into account in the preparation of local plans and is a material consideration in planning decisions.
- 4.24 At the heart of the NPPF is the principle of sustainable development, running through both plan making and decision making. There is an overarching presumption in favour of sustainable development.
- 4.25 NPPF highlights that the planning system must perform a number of roles to lead to sustainable development, that is:

- *An economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;*
- *A social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community’s needs and support its health, social and cultural well-being; and*
- *An environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.*

Mineral development

- 4.26 Paragraph 142 of NPPF recognises that minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However, since minerals are a finite natural resource, and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation.
- 4.27 Therefore, local plans should identify and include policies for extraction of mineral resource of local and national importance in their area. Paragraph 143 recognises the benefit of sourcing minerals supplies indigenously, while having regard for the benefit of reusing and recycling existing minerals where possible.
- 4.28 The NPPF stresses that when determining planning applications, local planning authorities should give great weight to the benefits of the mineral extraction, including to the economy, while ensuring that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety. Cumulative effects from individual sites and/or from a number of sites in a locality should also be taken into account. Restoration and aftercare to high environmental standards should be provided for at the earliest opportunity.
- 4.29 Paragraph 147 of NPPF relates to planning for on-shore oil and gas development. It indicates that planning authorities should distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production.

Development in National Parks

- 4.30 NPPF identifies the importance of National Parks and specifying that they are to be given the highest level of protection and great weight should be given to conserving the landscape and scenic beauty (paragraph 115). The conservation of wildlife and cultural heritage are also important considerations and should be given great weight in National Parks.
- 4.31 Paragraph 116 states that major development should only be permitted in exceptional circumstances demonstrated by the need for the development, the potential to develop outside

the designated area and minimising any detrimental effects on the environment, the landscape and recreational opportunities.

Technical Guidance to NPPF

- 4.32 Additional guidance in support of the NPPF, specifically considering flooding and mineral extraction is provided by this Technical Guidance. It highlights that any proposals must not have an adverse effect on the natural or historic environment or human health. Furthermore, the siting of equipment must take into consideration proximity to local residencies, factoring in any operational considerations.
- 4.33 The guidance highlights the effects of dust and how this must be controlled and mitigated. Mitigation measures, including dampening affected areas can be initiated. Noise is highlighted as an area that should be assessed to ensure that any unavoidable noise emissions are controlled, mitigated or removed at source and to ensure that noise limits are established in proximity to properties.
- 4.34 Technical advice to ensure that there is provision for restoration and aftercare at the earliest opportunity, undertaken to high environmental standards. This provides assurance that sufficient provision has been made.

Other Statements of National Policy

- 4.35 Since the publication of the NPPF in 2012, further statements have been made indicating a strong support for the development of indigenous supplies of onshore gas in the UK as a means to increase energy security and reduce carbon emissions as renewable technologies develop. Although emphasis is currently placed on the role shale gas and other unconventional resources can play, conventional resources are also important. Indeed, the emphasis on the safety of shale gas in the UK regulatory system is based on the experience of over 50 years of regulation of onshore conventional gas reserves¹².
- 4.36 In an Autumn 2012 Statement the Chancellor set out the Government's overall strategy for gas to ensure that the best use is made of gas power, including new sources of gas under the land.
- 4.37 In October 2014 the Government published planning practice guidance for onshore oil and gas including unconventional sources, to give more certainty to the industry and local authorities taking planning decisions on onshore oil and gas about the sorts of considerations they should take into account. Amongst other matters, the guidance indicates that hydrocarbons remain an important part of the UKs energy mix whilst the country transitions to low carbon energy supplies.
- 4.38 In August 2015, the Government announced plans to ensure that proposals for hydrocarbon development are determined within the 16-week statutory timeframe. In addition, changes to the Town and Country Planning (General Permitted Development) (England) Order 2015 now mean that much of the early exploration work for new hydrocarbon developments in locations outside designated areas can take place without the requirement for planning permission.

¹² e.g. DECC Guidance on fracking: developing shale oil and gas in the UK (April 2016) <https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking>

Ebberston Moor 3 Wellsite Retention

- 4.39 In November 2015, the Energy and Climate Change Secretary outlined a “new direction for UK energy policy”¹³ including increasing emission reduction in electricity by replacing coal-fired power stations with gas by 2025, as long as the shift to new gas can be achieved within these timescales, alongside investment in nuclear power and offshore wind.
- 4.40 The Oil and Gas Authority (OGA) was established in 2015, and was given new powers as an independent regulator in the Energy Act 2016 (given Royal Assent in May 2016) to help the oil and gas industry attract investment, support jobs and remain competitive for the future¹⁴.

Local Material Considerations

North York Moors National Park Management Plan

- 4.41 National Park Authorities’ key statutory duties are to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park and to promote opportunities for the understanding and enjoyment of its special qualities by the public. In pursuing these two purposes there is also a duty on National Park Authorities ‘to seek to foster the economic and social well-being of local communities’.
- 4.42 National Park Authorities must produce a National Park Management Plan setting out the vision, aims and policies for the management of the National Park. Although this is not part of the statutory development plan, National Park Management Plans may be material considerations when determining planning applications.
- 4.43 The North York Moors National Park Management Plan was adopted in 2012. Within the context of delivering the statutory National Park purposes, the plan focuses upon the Park’s ecosystem services, setting out a strategy to conserve and enhance the National Park’s special qualities and improve habitat networks whilst at the same time supporting new woodland, increased agricultural production, more visitors and renewable energy generation.
- 4.44 The Plan aims to protect the Park’s landscape, biodiversity, natural and historic environment and tranquil areas, provide opportunities for enjoying and understanding the Park’s special qualities, promote the North York Moors brand and support the local economy. It contains a policy which aims to reduce the amount of waste generated and increase the amount of waste which is re-used or recycled.

Emerging Local Plan

- 4.45 A new Local Plan is at an early stage of preparation to cover the period 2017-2035. When completed it will replace the 2008 Core Strategy. This was subject to key stakeholder consultation in May 2016, and the Main Issues and Options Report is anticipated to be published for consultation in October 2016. Following further rounds of consultation, it is anticipated that the Local Plan will be adopted at the end of 2018.
- 4.46 The contents of the new Local Plan will be informed by various technical reports and studies.

¹³ <https://www.gov.uk/government/news/new-direction-for-uk-energy-policy>

¹⁴ Greater security for North Sea Oil and Gas as Energy Bill becomes law (12 May 2016) - <https://www.gov.uk/government/news/greater-security-for-north-sea-oil-and-gas-as-energy-bill-becomes-law>

- 4.47 At present there are no policies that could be used to determine the current planning application.

Emerging Minerals and Waste Joint Plan

- 4.48 The North York Moors National Park Authority is producing a minerals and waste joint plan in collaboration with North Yorkshire County Council and City of York Council. This will also form part of the Development Plan for the National Park and will cover the period up to 2030.
- 4.49 The Preferred Options Consultation Document was published in November 2015 with consultation until January 2016. Consultation responses are being incorporated into a revised Draft Plan which will be made available for further comment before it is submitted for an independent public examination. It is anticipated to adopt the Minerals and Waste Joint Plan in early 2017.
- 4.50 The overarching vision and priorities for the Plan is to move towards the more sustainable provision of minerals and waste infrastructure and services, maintaining a careful balance between meeting future needs whilst protecting and enhancing the Joint Plan area's environment, protecting and supporting its communities and strengthening its economy.

Assessment of Proposed Development against Material Considerations

- 4.51 It must be noted that the proposed development is not for hydrocarbon development. However, the original purpose of the wellsite was to develop an appraisal well for hydrocarbon exploration, and the justification for the retention of the site is to allow further appraisal of gas reserves in the area to be undertaken (Section 3.2). Therefore, it is considered most appropriate that the development is considered against minerals and oil and gas policies. Should a further application be made for further exploration, appraisal or production be made, this would need to be assessed on its own merits given the clear steer in Government guidance to distinguish between the three different phases.

Assessment against NPPF and National Policy

- 4.52 The emphasis of NPPF on delivering sustainable development through three overarching roles for planning can be supported by the proposed development. The development delivers economic benefit, through the potential to identify hydrocarbons with national need, a social benefit in continuing to provide employment for local contractors and staff to service and maintain the site, and an environmental benefit through avoiding the requirement to re-establish the site in future if ongoing appraisal indicates viable quantities of gas could be extracted.
- 4.53 Section 3.2 of this Statement in Support discusses the national importance of identifying indigenous petroleum resources and maintaining security of supply. The importance of indigenous sourcing of minerals (where they cannot be sourced through reuse) is recognised in Paragraph 143 of NPPF as well as in the statements of National Policy outlined above. As highlighted in the NPPF and other policy, minerals can only be worked where they are found. Given the location of the Wellsite, it is not possible for the proposed development to be outside the National Park.
- 4.54 NPPF places great emphasis on protection of the special qualities of the National Park, and also having regard for the natural and historic environment, human health and aviation safety.

Potential impacts associated with the location and nature of the site were addressed through the original planning process in 2012. For example, mitigation was applied to minimise the visual impact of the site within the Park. This included the use of existing trees to screen the site from the road and from nearby receptors, and using wooden site fencing. The site was also located over 400m from the closest residential receptor, with trees screening direct views. To ensure the protection of the environment and in accordance with industry best practice, a number of measures were incorporated into the wellsite construction to mitigate any harm. This included laying an impermeable membrane across the site and installing a drainage ditch around the perimeter. Flood risk was avoided through developing the site outside an area of flood risk, and the small size of the site (<1ha) meant flood risk was not considered a constraint.

- 4.55 Noise considerations were addressed through the use of a planning condition restricting noise to acceptable levels, impacts of traffic through the requirement of a Traffic Management Plan and creation of passing places on the local road network, and potential impacts on the historic environment through the implementation of a programme of archaeological works prior to development.
- 4.56 The vast majority of impacts associated with the physical development of the wellsite in its chosen location, and the drilling of the appraisal well were therefore addressed with the original application and were assessed to be in accordance with the NPPF.
- 4.57 Remaining impacts associated with the retention of the wellsite and its continued servicing, and eventual abandonment and restoration are addressed in Chapter 5 of this Statement in Support.
- 4.58 An updated ecological survey (Appendix B) indicates that retention of the site would not adversely affect habitats or protected species in the vicinity, assuming good practice measures as outlined in Section 3.5 are followed. Similarly, the traffic numbers would not adversely affect the local road network or road safety, due to the retention of the passing places established for the original application. Good practice on the site would minimise impacts during routine maintenance operations.
- 4.59 The greatest impacts in terms of noise, traffic and disturbance would arise during the abandonment and restoration phase at the end of the three-year extension. Reinstatement of land and undertaking of aftercare to high environmental standards is of key importance in NPPF. Impacts of noise, dust traffic and lighting (as highlighted in the Technical Guidance to NPPF) would be managed through good practice and use of appropriate management plans, as outlined in Chapter 5: Environmental Review.
- 4.60 Overall, no impacts would arise of a greater magnitude or timescale than those already undertaken or consented. The development proposed is temporary in nature and of short duration. On completion of operations the site would be reinstated to its pre-development condition with a five-year period of aftercare put in place.
- 4.61 It is therefore considered that the proposed development does not conflict with any relevant policies within the NPPF, and is supported by the general emphasis in National Policy on retaining and expanding our indigenous gas resources.

Assessment against North York Moors National Park Management Plan

- 4.62 The Management Plan focuses upon the Park's ecosystem services, setting out a strategy to conserve and enhance the National Park's special qualities, protecting landscape, biodiversity,

natural and historic environment and tranquil areas, and supporting the local economy. It contains a policy which aims to reduce the amount of waste generated and increase the amount of waste which is re-used or recycled.

- 4.63 As indicated above, the issues indicated above were addressed within the 2012 application and would not be impacted by the proposed development. There is not anticipated to be any impact on the management of the National Park as a result of the proposed temporary development.

Emerging Minerals and Waste Joint Plan

- 4.64 This Joint Plan is at an early stage of development, and largely considers new minerals development rather than the relevant issues for the proposed time extension. Therefore, an assessment against the draft policies in the Joint Plan has not been made.

4.3 Summary

- 4.65 It is concluded that the proposed development does not conflict with the development plan (Core Strategy and Development Policies document of the North York Moors National Park) or with other Material Considerations, including national policy and emerging development plan documents.

- 4.66 It is considered that the proposal meets the relevant requirements for need, given the potential importance of the wellsite to provide a hydrocarbon resource of national importance in future (subject to further application) and ongoing resource appraisal in the North Yorkshire region (within and outside the National Park). There is no potential to locate the site outside the National Park due to the extent of Third Energy's PEDL and the fact that the wellsite is already a feature of the Park, is well screened and creates no substantial disturbance to residents, tourists or the environment due to mitigating measures incorporated into the scheme. The retention of the wellsite would not create further disturbance, as outlined in the assessments undertaken in Chapter 5: Environmental Review. It is also noted that the most potentially disruptive aspect of the proposed development (abandonment and restoration) forms part of the currently consented development, with the impact having been considered acceptable under planning policy on consent in 2013.

5 Environmental Review

5.1 Summary

- 5.1 This Chapter outlines potential environmental effects associated with the proposed operations. Where applicable, information presented in support of the 2012/ 2013 application is repeated. However, the baseline environment is now different (although similar sensitivities remain) and the proposed development is different compared to that proposed in 2012, as the wellsite is now in place and the appraisal well drilled.
- 5.2 Mitigation put in place as part of the wellsite construction to minimise environmental impacts is still in place in several cases, and would still serve to protect the surrounding environment. In addition, good practice as outlined in Section 3.5 would be followed to minimise impacts to the environment, users of the National Park and local residents.

5.2 Ecology

Current Baseline

- 5.3 An independent Phase 1 Habitat Survey was undertaken on 13 June 2016, assessing the site and local area. This is held in Appendix B. This updated the survey and assessment undertaken in February 2012, identifying any ecological constraints to be taken into account during the development.
- 5.4 The site is located within the North York Moors National Park, but no other statutory designations are present within 2km of the site. There are three non-statutory sites (areas of ancient woodland), all of which are more than 1 km from the Site: Backleys Wood, Beedale Wood and Keld Wood. The site itself is located within conifer plantation managed by the Forestry Commission. Potential waterbodies in the vicinity of the site were dry.
- 5.5 The site is currently hardstanding with some common herb and grass vegetation around the edges, as outlined in Appendix B. Similar species are found on the road verges adjacent to the site. A water retention ditch around the northern and eastern boundaries of the site has large flocs of filamentous algae present within the water. At the time of the site visit a number of toad tadpoles were observed within this ditch, together with smooth newt and palmate newt. Some of the newts were displaying.
- 5.6 Given the presence of some newt species, tests for Great Crested Newt presence were made, although the site is considered poor for this species as it is dominated by compacted crushed stone, which provides no sheltering opportunities. The adjacent woodland provides much better quality terrestrial habitat. A Habitat Suitability Index of the retention pond waterbody was undertaken, which indicated the retention pond to be of below average suitability for the species. In addition, water samples were analysed for Great Crested Newt "eDNA", which returned a negative result. It is therefore considered there is low potential for the species to be present.

- 5.7 No invasive species were identified during the site visit. No signs of any protected species using the site were observed. However the adjacent forest is considered potentially suitable for badgers and foraging bats, and also may be used by hedgehogs.
- 5.8 The site has limited potential to support breeding birds with most activity likely to be confined to the conifer plantation adjacent to the site. No evidence of raptors was seen during the site visit though it is understood that the surrounding woodland is suitable for nesting raptors, so these are assumed to be present in woodland close to the site.

Mitigation Proposed

- 5.9 As this proposal is temporary and of short duration, no enhancement measures have been proposed as the site would be restored on completion of operations. There would be no additional habitat loss, and the nature of the site means there is very limited potential for the site to support protected species which would require protection from the proposed activities.
- 5.10 Good practice would include measures to avoid disturbance of birds using the adjacent woodland, including avoiding work during the breeding season where possible. Activities taking place during the bird breeding season would not commence until the area had been checked for nesting birds by a suitably qualified ecologist. If nesting birds were detected then a suitable stand-off would be marked out around the area and work in that area should be delayed until the birds and their young have dispersed.
- 5.11 Any lighting required during evening or early morning periods would be kept to a minimum and directed to avoid light spillage into the woodland. Such lighting would be low intensity (e.g. sodium lamps) as bats and invertebrate prey items are less sensitive to this lighting than high pressure sodium or mercury lamps.

Potential Impacts

- 5.12 The report concludes that the development is unlikely to have a significant adverse impact on the ecological integrity of the National Park. There would be no further loss of habitat and negligible impacts on flora and fauna.
- 5.13 The development is therefore considered acceptable in relation to ecology, subject to the above mitigation.

5.3 Traffic and Transport

Sensitivities Raised in Previous Application

- 5.14 An independent highways assessment was completed to support the 2012 application, including reports on traffic management, swept path analysis and route condition.
- 5.15 It was assessed that although the public roads leading to the site were not a popular through route, they were narrow and some access difficulties were identified. Liaison with the Highways Agency was undertaken to minimise disruption. Particular care was required at the junction with the A170 at Wykeham, where there was a narrow junction with a church to the east, pub car park to the west and a school to the south. The road was narrow and wooded in places, restricting visibility.

- 5.16 A number of procedures were introduced to control the movement of vehicles to the wellsite. These included using a defined access route to access the wellsite (Application Plan 4) and improving and creating passing places along the route. Eleven passing places were created or upgraded by Third Energy along Wykeham Lane, Moor Road and Cockmoor Road. In particular, a layby was created just south of the junction to Cockmoor Road which allowed drivers to park and await instruction from the wellsite to minimise conflict between oncoming vehicles on Cockmoor Road during busy periods. Temporary signage was also provided.
- 5.17 There was also an indication that, depending on the rig selected, some temporary verge protection measures would be required.
- 5.18 During development of the wellsite and drilling of the appraisal well in 2013, it is understood that access to the site resulted in minimal conflict with other road users, subject to following the Traffic Management Plan and adhering to general good practice.

Current Baseline

- 5.19 The passing places and site access constructed as part of the 2012/2013 consent remain in good condition. Although there is some evidence of potholing to the road and some verge disturbance in places this is minor. A summary of the current condition of the road is provided in Appendix C.
- 5.20 The access road to the site is not heavily used, other than for local access to the few residential houses along Wykeham Road/ Moor Lane, and to the scenic viewpoint at the junction with Cockmoor Road.

Mitigation Proposed

- 5.21 An updated outline Transport Management Plan and Route Condition Survey is provided as Appendix C. It is proposed that this is followed to ensure safe use of the road network and minimal damage to the infrastructure. It is proposed that a further route condition survey is undertaken just prior to the abandonment and restoration phase to identify any works-related damage at this busiest time.

Potential Impacts

- 5.22 It is concluded the proposals can be undertaken with negligible impacts subject to the procedures detailed in the Transport Management Plan being applied.

5.4 Public Rights of Way and Recreation

Sensitivities Raised in Previous Application

- 5.23 The nature of the National Park is such that it attracts people undertaking recreational activities including walking, riding and cycling within its boundaries. Consultation with the National Park Authority and viewing Ordnance Survey maps indicated that there were a number of public rights of way adjacent to the proposed site location. This included the Wykeham Forest Trail, Tabular Hills walk and Moor to Sea Cycle Route. None of the public rights of way crossed any part of the site or access.

- 5.24 In addition to these public rights of way, there was a public car park to the east of the site. This provided parking and access to the Raptor Viewpoint; a local scenic viewpoint marked on Ordnance Survey maps.

Current Baseline

- 5.25 The same sensitivities apply as in the previous application. The existing wellsite is located adjacent to a forestry track and approximately 50m east of the Wykeham Forest Trail network of tracks at its closest point.
- 5.26 The site is adjacent to but not within “access land” which people can access for walking, running, climbing or wildlife watching, without having to use paths.

Mitigation Proposed

- 5.27 No additional mitigation is proposed as there would be no impact on the ability of the public to use the surrounding area including rights of way for recreational purposes. As outlined in Section 5.3, the Transport Management Plan would ensure that vehicles accessing the site would have full regard for other users of the roadways, including pedestrians, riders and cyclists in the area around the site and along the access road to the site.

Potential Impacts

- 5.28 The existing wellsite would not impact on recreational opportunities by taking up additional land, and proposed operations would have regard for people undertaking recreational activities through careful transport management.

5.5 Noise

Sensitivities Raised in Previous Application

- 5.29 An independent noise survey was commissioned to assess the potential impacts associated with the 2012 application. This involved a background noise assessment of the local environment (March 2012) at the nearest noise sensitive property, Brompton Moor House; approximately 480m south west from the site. There was a very low background noise level (LA90 22 dB(A)) given the rural nature of the site.
- 5.30 An assessment of the construction phase of the development (establishing the wellsite) using data from BS 5228 indicated that activities would typically produce an LAeq (1hour) contribution of 50dB(A). This was considered to be within a typical range of acceptability for these types of works (daytime LAeq 60-65dB(A)). Any adverse impact was therefore considered minor.
- 5.31 During drilling, the predicted noise level at Brompton Moor House was relatively low (LAeq 36dB(A)). Although exceeding the guidance level of “background noise level + 10dB(A)” this was well within the absolute level in NPPF guidance of LAeq(1 hour) 42dB(A) for night time works.
- 5.32 It was concluded that there would be a temporary, minor adverse impact on the nearest residential property during operations.
- 5.33 A condition was attached to the planning consent relating to noise as follows:

Noise attenuation measures shall be incorporated into the site compound design and construction in such a manner that noise measured at the curtilage boundary of any local dwelling shall not exceed 42dB LAeq, 1hour.

- 5.34 This reflected the guidance for drilling works (which would take place over 24 hours), but not for temporary construction works.

Current Baseline

- 5.35 No update of the noise survey or assessment has been undertaken due to the nature of works proposed. It is assumed that the low night time noise levels of 22dB(A) LA90 is still applicable.

Mitigation Proposed

- 5.36 No mitigation is proposed other than good site practice. No drilling is proposed as part of the development. Abandonment and restoration of the site (as already consented) is a temporary “construction” activity so it is anticipated that higher noise limits would be appropriate in accordance with BS5228 and Planning Practice Guidance. This latter states:

Increased temporary daytime noise limits of up to 70dB(A) LAeq 1h (free field) for periods of up to eight weeks in a year at specified noise-sensitive properties should be considered to facilitate essential site preparation and restoration work and construction of baffle mounds where it is clear that this will bring longer-term environmental benefits to the site or its environs...

Within this framework, the 70 dB(A) LAeq 1h (free field) limit referred to above should be regarded as the normal maximum.

- 5.37 It is proposed that a condition is attached to any consent reflecting this temporary increased noise level for abandonment and restoration activities.

Potential Impacts

- 5.38 It is anticipated that there would be a temporary, minor adverse impact on the nearest residential property during the abandonment and restoration phase. However, during operations (maintenance of the wellsite) there would be no noisy work undertaken so no noise would be audible at the nearest residential properties.

5.6 Landscape and Visual, including Lighting

Sensitivities Raised in Previous Application

- 5.39 Key sensitivities identified in the 2012 application related to the drilling rig derrick, at a height of approximately 49m high, constructed from a lattice frame, present on site for between six and 12 weeks. The upper section of this would be visible above surrounding trees.
- 5.40 Mitigation outlined included the guaranteed retention of trees around the wellsite (the lease covered a greater area than that covered by the red line planning boundary) to ensure ongoing management of the forest did not remove the screening provided. Fencing and bunding of the site was also undertaken to screen the site from the adjacent road.

Current Baseline

- 5.41 The site is located on top of a plateau which forms part of the Tabular Hills. It is located within Wykeham Forest, within the North York Moors National Park. The area consists of predominantly pine and conifer trees. To the south and west of the sites are agricultural fields used for the cultivation of saplings.
- 5.42 There are very limited views of the wellsite due to its position within Wykeham Forest. Natural screening is provided by the surrounding forest, which is significantly taller than the site fencing. A soil bund around the perimeter of the site provides additional screening.

Mitigation Proposed

- 5.43 No additional mitigation is proposed for the majority of the proposed development, other than maintenance of the existing site screening. During the operational phase, work would be undertaken in daylight only, and where possible this would also apply to the abandonment and restoration phase. If lighting were required during the abandonment and restoration phase it would be sensitively located and angled onto the floor of the site to avoid spill into the surrounding area.
- 5.44 As this proposal is for the retention of the wellsite and maintenance of a suspended temporary appraisal well, it would not be reasonable to initiate landscaping of the site at this stage. If, following further work, a planning application were submitted for the production of petroleum, then a comprehensive landscape plan would be included as part of the development of the site.

Potential Impacts

- 5.45 As the wellsite is an existing feature of the landscape, there would be no change to its appearance as a result of the proposed development. On restoration the site would be returned to a condition suitable for reuse as commercial forest.
- 5.46 During the abandonment and restoration phase there may be some temporary impact on the landscape as a result of plant required to abandon the well, construction vehicles and change to the site as the fencing is removed and earthworks are undertaken. There may require to be temporary lighting brought onto the site if any work takes place outside daylight hours. However, effects on local residents and members of the public would be very limited due to the short term and temporary nature of the abandonment and restoration phase.
- 5.47 It is considered that the development is acceptable in terms of landscape and visual effects.

5.7 Hydrology, Hydrogeology and Flood Risk

Sensitivities Raised in Previous Application

- 5.48 An independent hydrogeological risk assessment was carried out to support the application for the original wellsite. This addressed potential impacts on groundwater resources, groundwater quality and surface water features.
- 5.49 The site is located at the northern boundary of the Ruston Beck catchment (tributary of Derwent) in the Upper Derwent Operational Catchment. This catchment covers approximately 2168ha, joining the Derwent south of Brompton by Sawdon, south of the A170. However,

Ebberston Moor 3 Wellsite Retention

although surface water is likely to flow into this catchment, it is possible that groundwater may flow into the Troutsdale Beck catchment to the north or Derwent catchment to the east, depending on groundwater levels, depth to groundwater, flow direction and hydraulic gradient.

- 5.50 The site is located in an area that was classified as a primary aquifer. It overlies the Corallian (Upper Jurassic) and Ravenscar¹⁵ (Middle Jurassic) aquifers which form part of the local drinking water supply and are considered highly vulnerable to any potentially polluting activity. The Sherwood Sandstone and Magnesian limestone at greater depth are also principal aquifers. At the time of the application the site was not located within a Groundwater Source Protection Zone (GWSPZ), though during consultation it was noted that it was intended to be classed as a Zone 2.
- 5.51 Various abstractions of groundwater and surface water were identified in the vicinity of the site. The nearest public water supply (Yorkshire Water) was recorded as being 6km south east of the site at West Ayton. These abstraction points were the primary basis for inclusion of the site within the Zone 2 GWSPZ. An update of the abstraction data is provided in Table 5.1 below.
- 5.52 The site is located in a nitrate vulnerable zone which is an indication that there is high aquifer vulnerability to leachate pollution.
- 5.53 Historic land use in the area included sand quarrying (approximately 1.1km north of the site). Recorded discharges included agricultural site drainage, (920m south west of the site). No recorded pollution incidents to controlled waters were noted within 1 km of the site.
- 5.54 The risk assessment identified the following potential sources of pollution:
- Spillage of pollutants prior to the creation of a sealed site surface;
 - Loss of drainage from the site via surface water flow to surface water features or via permeable soils to groundwater;
 - Leakage from the perimeter drain due to faults with its construction;
 - Loss of any chemicals or fuel that exceeds the storage capacity in the drains;
 - Loss of drilling fluids into the fractures during drilling in the Corallian/ Ravenscar aquifers;
 - Loss of cement or grouting into fractures in the underground strata;
 - Loss of drilling fluids while constructing the well below the top of the Lias group by leakage through or around the casing and cement seal;
 - Loss of drilling fluids or produced water that may collect in the cellar through failure in the cellar integrity;
 - Leakages or spills to ground or surface water from construction or waste removal vehicles;
 - Flushing of contaminated surface retained pollutants into the ground during abandonment and restoration phase.

¹⁵ In Figure 2.2 the “Estuarine Series” corresponds to the Ravenscar group secondary aquifer system.

5.55 The risk assessment identified the following potential receptors:

- Corallian aquifer – this principal aquifer is highly fractured and extensively used as a water supply. The aquifer extends from the west-east scarp slope to Troutdale Beck to the Vale of Pickering (Helmsley/ Ebberston/ Filey fault). It underlies the site to a depth of approximately 40m. Due to its fractured nature, groundwater levels and the springs fed from it respond rapidly to rainfall events. Most discharge from the aquifer occurs downhill of the site, in the Vale of Pickering. It is anticipated that the major flow of groundwater is to the south/ south east. The receptor was considered of Very High importance.
- Secondary Aquifers (Ravenscar Group and other mudstones, sandstones and limestones in the Middle Jurassic). These have some potential to form aquifers of local importance, though groundwater flow is restricted by impermeable mudstones.
- Sherwood Sandstone. This is classed as a principal aquifer of regional importance, though is located at approximately 1km depth beneath the site, though nearer to the surface at other points in the region. Although permeable, the water is not considered to be economically usable due to its depth, salinity and poor quality.
- Magnesian Limestone and Carboniferous Millstone Grit aquifers. Again, these aquifers can form principal (Magnesian limestone) or secondary (Carboniferous) aquifers of regional importance where they are located near the surface. However, these strata are not economically useable due to their significant depth, salinity and poor quality.
- Surface water features including:
 - the River Derwent and its tributaries including Troutdale Beck (approximately 700m north of the site).
 - numerous small unnamed streams and springs on the slopes of the Derwent Valley. The nearest spring to the site was approximately 750m west of the site. The nearest stream was approximately 450m to the north of the site on the scarp slope to Troutdale Beck.
 - numerous small unnamed streams on the south facing dip slope. The nearest was a tributary of Beedale Beck called Long Grain, approximately 750m south east of the site.
 - pond approximately 125m south west of the site. This was dry at the time of the risk assessment.

However, the primary impact on these receptors would be their potential to infiltrate and impact on the Corallian aquifer, or for any impact on the Corallian aquifer to affect the baseflow into these features, rather than any direct contamination of them directly, due to the distance and topography of the site.

5.56 The risk assessment identified the following potential pathways:

- From the ground surface along fractures in the Corallian aquifer. The potential flow would depend on the saturation of the aquifer but could result in rapid movement of contaminants away from the site, likely in the direction of groundwater flow. This pathway could exist prior to the sealing of the site surface, through any failures in the impermeable membrane or through faults in the well cellars;
- Through a vertical pathway created by the well through the aquifer. This would be prevented by sealing with cement or grout;
- Through loss of the drilling fluids through walls of the well when drilling takes place through the Corallian and Ravenscar aquifers;
- Movement from depth of fluids, passing up through the casing of the upper borehole (if the base of the cement was unsatisfactory or set at too shallow a depth to seal off the aquifers).

5.57 It was considered that the greatest risk to the aquifers and surface water features came from drilling activities; namely the release of turbid waters and/or associated contaminants to groundwater. Mitigation put in place during the design of the borehole and use of water-based drilling fluids minimised the risk to the sensitive aquifers.

5.58 Other risks from surface operations included the potential for spills or leaks of chemicals, fuels or oils used on site, or release of contaminated water from the site into the surrounding soil or watercourses. Mitigation to avoid this included:

- Laying an impermeable site liner (HDPE) sandwiched between geotextile over the entire site, following removal and bunding of topsoil. This was installed by a specialist contractor and welded to ensure integrity. The liner ensured that any water falling onto the site would not soak into the soil or leave the site, and it would all be captured in the perimeter ditches around the site boundary.
- Ensuring drain capacity is sufficient to retain storm event site runoff. Pumping out any water gathering in cellar and gathering site runoff, followed by removal of collected fluids by a licensed waste carrier.
- Use of a pre-cast concrete cellar to drill the appraisal well and provide an additional sealed containment. The impermeable liner was integrated into this cellar. An integrity test was undertaken prior to commencing drilling from the cellar.
- Installation of surface casing to approximately 229m using a small “water well” rig to minimise the risk of drilling fluid being lost to the geology and aquifer. The rig drilled using a mixture of air and water based drill fluid.
- Deeper drilling used water based drilling muds (including a bentonite polymer to maintain the weight of fluid in the well) and not oil-based muds.
- Use of several layers of steel casing, cemented in place. As shown in Figure 2.2, the appraisal well was cased with several steel layers to prevent

loss to the formation. All casing was pressure tested prior to further drilling to ensure integrity and that no pathway between the wellbore and surrounding strata existed. This prevented loss of drilling fluid to the formation and provided a barrier between the different strata to prevent any possibility of ground waters mixing between different strata.

- Monitoring of the cement job to identify and remediate excessive losses.
- Removal of all potentially contaminated material from site (for example hardcore over impermeable membrane) prior to removal of membrane, to prevent any contaminants leaching onto the site surface.
- Good practice (as outlined in Section 3.5) was followed in relation to disposal of fluids and other waste by licensed contractors, and measures in place to prevent and, where necessary, contain spills (for example, use of double-bunded tanks).

5.59 The residual risk was considered low provided the integrity of the permeable membrane was maintained, integrity of the well and any pipes were tested and best available techniques were used throughout the life of the well.

5.60 Although the risk assessment did not specifically address flood risk, the site is not located in an area of flood risk and its elevated location, small size, temporary nature and surrounding land uses suggested flooding would not be likely. Drainage around the site was sized to provide capacity for a storm event without flooding.

Current Baseline

5.61 The same sensitivities as identified in 2012 apply, and the site is located in a GWSPZ Zone 2. However, since 2012 further analysis of surface and groundwater quality has been undertaken (as part of assessment under the Water Framework Directive).

5.62 As indicated above, the site is located in the Ruston Beck catchment (tributary of Derwent) in the Upper Derwent Operational Catchment. This catchment covers approximately 2168ha, joining the Derwent south of Brompton by Sawdon, south of the A170. In 2015 this was classed as of “bad” waterbody status overall, with “bad” ecological status and “good” chemical status. This is a decrease in quality since 2009 when the ecological and overall quality was recorded as “poor”.

5.63 As the site is located at the northern edge of the catchment, it is possible that groundwater hydraulic flow flows to the northerly catchment (Troutdale Beck from Source to River Derwent). This covers approximately 1,328ha. In 2015 this was classed as of “moderate” waterbody status overall, with “moderate” ecological status and “good” chemical status. This was an improvement since 2009 when the ecological and overall quality was recorded as “poor”.

5.64 Alternatively, groundwater could flow to the east (Derwent from Black Beck to River Rye) which is much larger (over 13,500ha) classed as of “moderate” waterbody status overall, with “moderate” ecological status and “good” chemical status in 2015. This classification had not changed since 2009.

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- 5.65 In the operational catchment the key reasons for not achieving good status were agriculture and land management and water industry works; suggesting that abstraction (especially in the south of the catchment) may play a part in depressing water quality. The Environment Agency is attempting to improve water quality to Good status in all catchments by 2027. Therefore particular care needs to be taken to protect the aquifer in the area; especially in the Ruston Beck catchment.
- 5.66 A review of groundwater abstractions within 6 km of the site was made to update that provided in the risk assessment in 2012. This data was provided by the Environment Agency (ref RFI/2016/16907). Scarborough Borough Council Environmental Health officers were contacted to update unlicensed abstractions, but no response was received. Abstractions are shown in Table 5.1.

Licence Number	Approx. grid ref	Use	Source	Max daily abstraction (m3)	Max annual abstraction (m3)	Approx. Distance from site (direction)
2/27/26/043	SE 898 877	Water Supply-Private	Groundwater – Spring - Corallian	45	16,425	3.75km (W/SW)
2/27/27/183	SE 945 899	Amenity - Private	Surface Water – Troutsdale Beck	63	6,800	1.45km (NW)
2/27/27/079	SE 906 852	Agriculture	Groundwater – Borehole - Corallian	45	16,639	4.6km (SW)
NE/027/0026/006	SE 962 899	Amenity – industrial/commercial	Surface Water – tributary of River Derwent near Hackness	54.6	19930	3.0 km (NE)
Unlicensed		Water Supply-Private	Groundwater	<20	-	4.2km (S)
West Ayton		Public Water Supply	Groundwater	-	-	6 km (SE)

Mitigation Proposed

- 5.67 No drilling is proposed as part of the proposed development; however, the appraisal well is suspended but not abandoned. Therefore, risks remain relating to potential spillage of any chemicals during maintenance operations or site runoff leaching into the subsurface. In addition, the identified risks in 2012 relating to abandonment and site restoration would apply.
- 5.68 The mitigation measures put in place as listed above would be retained. Of particular importance is the maintained integrity of the impermeable membrane, cellar and well. The cellar would continue to be pumped out and would be integrity tested. All fluids collected from the cellar or as site runoff in the drainage system would be removed from the site by a licensed waste contractor. Good practice (as outlined in Section 3.5) relating to prevention and containment of spills would continue to be followed.

- 5.69 At the end of the life of the wellsite, the appraisal well would be abandoned as outlined in Section 3.5. Oil and Gas UK guidelines would be followed. This would involve the setting of mechanical plugs and cement plugs across different strata, followed by pressure testing to confirm integrity.
- 5.70 On restoration of the site, all equipment would be removed and the site reinstated to allow management in accordance with the requirements of the landowner. Any potentially contaminated material (for example hardcore over the impermeable membrane) would be removed from the site prior to removal of membrane, to prevent any contaminants leaching onto the site surface.
- 5.71 A period of aftercare would follow to ensure its successful restoration (Appendix A).

Potential Impacts

- 5.72 It is considered that potential risks to groundwater and surface water would be low assuming the integrity of the site and well is maintained and the proposed mitigation relating to abandonment and restoration was followed.

5.8 Archaeology and Cultural Heritage**Sensitivities Raised in Previous Application**

- 5.73 An independent desk top study on archaeology in the area was completed. This considered a number of sources to identify local archaeological records. It identified that there were a number of archaeological features within the local landscape. This included a number of flint scatters and prehistoric cairns. There was an enclosed rabbit warren to the north east of the study area during the 18th Century. No significant impact on the setting of and scheduled monuments or listed buildings was predicted.
- 5.74 The study identified that there were no known archaeological records on the proposed site location. In addition, the development of the conifer plantation using deep ploughing was considered likely to have disturbed any buried archaeological resource.
- 5.75 Given the uncertainty of resource in the area, a planning condition requiring a full archaeology watching brief and recording was included as a condition of consent. No significant archaeological finds were recorded during this work.

Current Baseline

- 5.76 The archaeological baseline around the site has not altered since the 2012 application. The site is currently developed as the Ebberston Moor 3 Wellsite.

Mitigation Proposed

- 5.77 As the site is already developed and no further groundwork is proposed other than that already consented (to restore the site to allow management to its previous condition), no additional mitigation is proposed.

Potential Impacts

- 5.78 The proposed development would not create any impacts on the cultural heritage or archaeology on site or in the surrounding area.

5.9 Dust Management and Air Quality**Sensitivities Raised in Previous Application**

- 5.79 Although the site is located in a rural environment with few sensitive receptors in the vicinity, issues relating to dust management were addressed in the original application. These considered the potential for entrained dust from site construction works to be carried onto the highway, or for dust created to be blown in the wind.

Current Baseline

- 5.80 The site is an existing wellsite with very limited potential for dust to be created. There are no ongoing dusty works. In especially windy conditions care is taken that the bund of soil surrounding the site does not cause dust, though this is constructed in such a way to minimise this.
- 5.81 The only other emissions to air from the existing site arise from vehicles servicing the site. These emissions are minimal and would not exceed those from the surrounding road network. The appraisal well is suspended and monitored to ensure no emissions of methane are released from the well.

Mitigation Proposed

- 5.82 The proposed development would involve minimal potential to create dust or air quality emissions. Existing works, and existing emissions levels would continue if the site time extension were consented. The access road, entrance to the site would be maintained to minimise any debris being carried onto the highway, and swept where necessary. Should dust arise from the operations, Third Energy would instigate a scheme to mitigate this, which would include damping down dusty areas.
- 5.83 During the abandonment and restoration stage, mitigation outlined in the original application to minimise dust from construction works would be employed. This would include the use of wheelwash facilities, sheeting any lorries leaving the site and damping down any dusty areas. Emissions from vehicles servicing the site would be minimal, and would be controlled by good practice measures for construction sites, including prohibiting vehicles idling on the site, and using low sulphur diesel.
- 5.84 The process of abandoning the well (and the abandoned well itself) would not release methane, due to the regulatory requirements and best practices employed.

Potential Impacts

- 5.85 These measures would ensure that there are no adverse impacts from the proposed development in relation to dust or other air quality impacts.

5.10 Waste and Pollution

Sensitivities Raised in Previous Application

- 5.86 Although the Ebberston Moor 3 Wellsite was predicted to produce comparatively little waste, waste (including mining waste from drilling the appraisal well) was noted to require proper management. Five principal sources of waste were identified:
- drilling mud located in the mud tanks and drill cuttings;
 - sanitary waste collected in the cess tank;
 - site drainage collected in the ditches;
 - general waste - paper, timber, scrap metal – collected in skips;
 - waste fluids processed during drilling or testing operations and collected in storage tanks.
- 5.87 Prior to the start of the operations, procedures were documented and all personnel made aware of the measures in place for responding to an emergency situation, including fire and spills.

Current Baseline

- 5.88 As the appraisal well has already been drilled, waste arising from the operation of the proposed development would primarily comprise site drainage collected from the ditches and cellar, which would be removed by a licensed contractor. As the site is not continually manned, there would not be any sanitary waste or commercial/ office waste. Any waste generated by staff operations would be removed from the site by the staff for proper disposal.
- 5.89 During well abandonment and restoration, temporary cabins and welfare facilities would be brought onto site. Waste from these would be stored in secure containers, where possible segregated for recycling. Additional construction waste would include hardcore from the site surfacing, the impermeable membrane, the well infrastructure and fencing. It is intended that, where possible these would be reused, following cleaning if appropriate.
- 5.90 All waste materials, including wastewater and fluids (subject to prior analysis if required) would be removed by licensed operators and disposed of at authorised locations. Foul sewage would be collected in a cess tank which would be emptied periodically, with disposal to an approved location.

Mitigation Proposed

- 5.91 As with the previous proposal, good practice would be followed, including following Third Energy's standard site management procedures, but no additional mitigation is proposed in relation to waste. Measures to avoid pollution to groundwater and air are addressed in Section 5.7 and 5.9 respectively.

Potential Impacts

- 5.92 No significant impacts from the proposed development in relation to waste or other pollutants are predicted.

6 Conclusions

- 6.1 This application for planning permission under the Town and Country Planning Act 1990 is submitted to the North York Moors National Park Authority; the relevant MPA.
- 6.2 The proposal is to retain the wellsite at Ebberston Moor 3 at Wykeham, Cockmoor Road, for an additional three years. The justification for this extension of time (over the three years consented in the extant planning consent NYM/2013/0501/FL) is the continued appraisal of gas reserves in the area and work to improve production of existing reserves. If existing work ongoing elsewhere in Third Energy's licensed areas determines that there may be benefit in further work on the wellsite, a further planning application would be submitted to the MPA. Retention of the existing wellsite would avoid the requirement for a new site to be established if such an application were brought forward. Site construction creates unavoidable, though controllable, disturbance and environmental impact which would therefore be avoided by using an existing wellsite. It is considered too that the existing wellsite is in a good location within the National Park, being secluded, accessible and with very few sensitive receptors in the vicinity (the nearest residence is approximately 480 m distant, with separation by mature conifer trees).
- 6.3 If at any stage Third Energy determines that there is no further commercial prospect, the appraisal well (Ebberston Moor B1) would be plugged and abandoned in accordance with industry best practice, and the wellsite restored to allow management by the landowner (Forestry Commission).
- 6.4 The Ebberston Moor 3 wellsite was constructed and the appraisal well drilled in summer 2013. The site is located in Wykeham Forest (a commercial conifer plantation), screened from the road and receptors by mature conifer trees. The site is surrounded by wood palisade fencing and is a discreet feature in the surrounding environment. Access to the site uses the existing road network from the A170 at Wykeham, approximately 6 km to the south. Passing places along the access road (Wykeham Lane/ Moor Road/ Cockmoor Road) were established and improved as a condition of consent of the original application, and a new access junction into the wellsite was created from Cockmoor Road. The well targeted the Permian Kirkham Abbey formation, and other nearby formations, aiming to identify potential conventional gas reserves. It is currently suspended and visited frequently for maintenance checks. The cellar and drainage ditches are pumped out and water removed from the site for disposal.
- 6.5 The key factor in determining whether the application is acceptable, is its compliance with the development plan. The main issues for consideration are whether there is sufficient justification for the temporary development, and whether the scheme would have an unacceptable impact on the local environment if approval is granted. The location of the site within the National Park means it must meet the requirements for this sensitive area as outlined in the development plan and NPPF.
- 6.6 It is noted that as the wellsite is an existing site, the theoretical justification for it to be located within the National Park was addressed with the original application. This justification considered the national interest of gas production, and the fact that minerals can only be worked where they are found. Any impacts on landscape and recreation would be limited due to the short term and temporary nature of the proposals. These justifications are still considered relevant for the current proposed time extension for the discreetly located, small scale site.

- 6.7 Environmental impacts of the proposed development have been considered, building on assessments undertaken for the original application. An updated Phase 1 ecology report identified no protected species or notable habitats within the site. The report concluded that the development would be unlikely to have a significant adverse impact on the ecological integrity of the National Park. It also concluded that there would be negligible impacts on flora and fauna.
- 6.8 An update of the Transport Management Plan was undertaken, taking into account the existing passing places and road condition. The proposed development would produce minimal traffic movements during operation /maintenance with greater but still acceptable movements during abandonment and restoration. These movements were consented as part of the original application.
- 6.9 A key sensitivity of the site is its location above the Corallian aquifer which is highly sensitive to pollution and acts as a water supply to the region. Although no drilling or intrusive ground work is proposed, it is considered important to maintain mitigation installed as part of the original site construction; in particular ensuring the integrity of the impermeable site membrane and cellar, and capacity of the drainage ditches to prevent pollution of this aquifer (and other groundwater receptors). In addition, during the abandonment and restoration phase, measures would be put in place to minimise noise, dust and other disturbance to the nearby Brompton Moor House and other receptors, including ecological receptors.
- 6.10 Assuming the identified mitigation and good site practice is followed, any impacts associated with this proposal would be negligible due to the short duration, and limited and temporary nature of the operations. It is therefore considered that the proposal accords with the development plan and other material considerations (including emerging local policy and national policy) and is therefore acceptable.

Appendix B

Update to Ecological Phase 1 Study

Ebberston Moor 3 Well Site
Ecology Report

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1 Introduction

Site Description

- 1.1 The development site (the Site) is an existing appraisal well, drilled to establish the potential of the area to produce natural gas, located within Wykeham Forest, which is to the north of North Moor and to the north west of Scarborough. The Site is located immediately to the north of a tarmac surfaced access road and to the west of a public car park and viewpoint area. The central grid reference of the site is SE 93492 88791 (see Figure 1 in Appendix 1).
- 1.2 The Site comprises a compound that is enclosed by fencing on all sides. It is surfaced with compacted crushed stone and in the centre is the well head and a small open-sided structure that covers it. The crushed stone has been laid on top of a Bentonite liner and along part of the northern and western boundaries of the compound the liner has created a long water-filled ditch. The purpose of the ditch is trap water draining from the site. Outside of the Site there is coniferous plantation on all sides: to the south and west the trees are present as narrow belts and beyond these are open fields that are being used to grow young conifer seedlings.

Description of Project

- 1.3 The Site has been developed as an appraisal well site which has received planning permission for a temporary appraisal borehole. It is proposed to apply for an extension to the existing planning permission, which, if granted, will permit the continued operation of the Site in the same manner as it is currently operated.

Aims of Study

- 1.4 The aim of this study was to assess the ecological interest of the Site and to identify any ecological constraints that will need to be taken into account during the future occupation of the development. In particular, the study has focussed on the need to minimise impacts on protected species and habitats and any designated sites in the area. To achieve this, potential ecological constraints have been identified and guidance provided on the actions that might be required to mitigate ecological impacts to an acceptable level.

Personnel

- 1.5 The survey work and the reporting was completed by Steven Betts CEnv MCIEEM. He is a very experienced ecologist who has worked in the ecological sector for more than 20 years. Further details of his experience and qualifications can be found at <http://www.bsg-ecology.com/project/steve-betts/>.

2 Methods

Desk Study

- 2.1 A desk study has been undertaken using data obtained from the Defra's Multi Agency Geographic Information for the Countryside internet-based database (<http://www.magic.gov.uk>, accessed 16 June 2016) to establish the location and nature of any statutory designated sites of nature conservation interest located within 2 km of the centre of the Site. This includes Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites.
- 2.2 A 2 km search area has been adopted as it represents the maximum distance over which impacts (direct or indirect) might be expected to occur (CIEEM, 2012). Furthermore it is considered unlikely that most species that may be encountered within the site (based on an assessment of the habitats that are present) will travel more than 2 km when commuting or foraging. Consequently it is unlikely that there will be significant interactions with species using sites more than 2 km from the Site.
- 2.3 Reference has been made to the results of previous survey work that was carried out in support of the original planning application (URS, 2012).
- 2.4 The North and East Yorkshire Ecological Data Centre (NEYEDC) was contacted to obtain records of protected species and habitats within the 2 km search area. In addition, reference has been made to species and habitats listed in accordance with the requirements of Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and the North York Moors Biodiversity Action Plan (BAP), which identify species and habitats that are of conservation importance at the national and County levels.
- 2.5 An aerial photograph of the Site and its surroundings was examined to further assist in understanding the context of the Site and to identify and assess possible habitat linkages with other habitats or sites of ecological importance within the local area.

Field Survey

Phase 1 Habitat Survey

- 2.6 A Phase 1 Habitat Survey of the Site was undertaken on 13 June 2016 by Steven Betts CEnv MCIEEM. The vegetation and land use types present within the Site were classified according to the standard JNCC methodology (JNCC, 2010), and a habitat map was produced. During the survey the weather was still, cool and misty: the cloud cover was 8/8 oktas.
- 2.7 The survey was extended to include an assessment of the habitats present to determine their suitability for supporting protected species. The habitat assessment was also undertaken on 13 June 2016 at the same time as the Phase 1 Habitat Survey. During the Site visit any signs of protected species that were observed were recorded. Further details are provided below of the protected species assessment methods that were adopted. Given the size of the Site it was possible to carry out a thorough search for signs of protected species during the Phase 1 Habitat Survey.
- 2.8 During the surveys a record was made of any invasive species that were present, such as Japanese knotweed *Fallopia japonica*.

Habitat Assessment for Protected Species

Badgers

- 2.9 A detailed badger *Meles meles* survey was undertaken on 13 June 2016 by Steven Betts, at which time the habitats around the Site were searched for setts, dung pits, latrines, footprints, feeding signs, scratching posts and any other badger field signs (Harris *et al.* 1989). Any setts and field signs identified were recorded on a map.

2.10 The survey area included all land within the Site boundary and the adjacent forestry. Consequently the survey area included detailed inspection of a buffer area that extended at least 50m from the majority of the development footprint, i.e. any areas where disturbance of badgers could potentially arise. Whilst a much larger buffer area was surveyed, a detailed inspection of all habitat areas was not possible because of the density of the trees and ground level vegetation.

Bats

2.11 No buildings or structures with bat roosting potential are present within the Site. The Site is surrounded by semi-mature / mature conifer trees that were assessed to determine their suitability for roosting bats.

2.12 Overall the Site has been assessed as being of very low importance for bats, but the surrounding forest does have suitability for foraging and/or commuting bats. Due to the nature of the proposed development, the lack of any permanent structures within the Site that could be used by roosting bats, and the absence of lighting that could impact on nearby bat populations, there is considered to be no requirement for bat activity surveys.

2.13 The site was assessed on 13 June 2016 for its suitability for roosting, foraging and commuting bats by Steven Betts, who holds bat licence 2015-12420-CLS-CLS (CL18 Bat Survey Level 2). He is an experienced bat ecologist who has undertaken numerous site assessments and bat activity surveys.

Breeding Birds

2.14 During the Site visit on 13 June 2016 a note was made of all birds that were present at that time. A transect was walked around the Site and around the adjacent stands of conifer trees. Bird locations and behaviour were recorded using standard Common Bird Census (CBC) notations. Birds were considered likely to be breeding if singing, displaying, carrying nest material, repeatedly alarming, if adults were seen carrying food or if there were territorial disputes.

Great crested newt

2.15 The Phase 1 Habitat Survey revealed that there is a water-filled ditch located along parts of the northern and eastern Site boundary. At the time of the Site visit it was noted that this ditch supported populations of smooth newt *Lissotriton vulgaris* and palmate newt *Lissotriton helveticus*, both of which were visible during the survey. It was therefore concluded that this water feature has suitability for great crested newt *Triturus cristatus*.

Habitat Suitability Index

2.16 The waterbody within the Site was assessed to determine its suitability to support great crested newts using the following evaluation criteria (Oldham *et al*, 2000):

- Geographic location
- Pond area
- Pond permanence
- Water quality
- Pond shading
- Number of waterfowl
- Occurrence of fish
- Pond density
- Proportion of newt friendly habitat
- Macrophyte content

- 2.17 The evaluation method proposed by Oldham *et al* involves the calculation of a Habitat Suitability Index (HSI) by combining scores for each of the above variables. These are then combined to obtain an overall score for the pond between 0 and 1 with a score of 1 representing optimal conditions for breeding great crested newt.
- 2.18 Whilst this method provides a useful tool for evaluating a pond's suitability for great crested newt, the results need to be treated with caution as the method was derived using ponds from the English Midland's. However, when used in conjunction with other factors, the calculation of HSI scores provides useful supplementary information to help assess the potential value of a pond for great crested newts.

Water sample analysis

- 2.19 Steven Betts MCIEEM (Natural England licence 2015-17168-CLS-CLS) undertook eDNA water sample collection at the pond within the Site on 18 June 2016. Twenty water samples were collected from greater than 80% of the pond perimeter following the ADAS eDNA sample protocol (set out in Appendix 2). On-line weather forecasts were monitored during the fortnight preceding the eDNA sample collection, which confirmed that the weather had been suitable for great crested newt survey throughout this period (i.e. overnight temperatures generally above 5°C). A single eDNA sample collection kit was used.
- 2.20 The eDNA kit was received by ADAS on 24 June 2016 and analysis of the water samples was undertaken on 9 July 2016. Water samples were collected within the specified survey window for eDNA analysis, and in accordance with the published methodology (Biggs *et al*, 2014).

Other Species

- 2.21 During the walkover survey notes were made of any other notable or protected species that were identified or could potentially be present based on the habitats within the site. For example, both brown hare *Lepus europaeus* and hedgehog *Erinaceus europaeus*, which are species of principal importance listed in accordance with the requirements of Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, could potentially be present within or adjacent to the Site.

3 Results

Desk Study

Statutory Designated Sites

- 3.1 The Site is located within the North York Moors National Park. There are no other statutory designated sites located within 2 km of the Site.

Non-Statutory Designated Sites

- 3.2 There are no Local Wildlife Sites (LWS) present within 2 km of the Site. The desk study has identified three areas of ancient woodland, all of which are more than 1 km from the Site: Backleys Wood (plantation on ancient woodland site), Beedale Wood (plantation on ancient woodland site) and Keld Wood (ancient and semi-natural woodland site).

Protected Species

- 3.3 Historical records of protected species provided by NEYEDC are considered below in the relevant section for individual receptors.

Field Survey

Habitat Description

- 3.4 The range of habitat types present within the Site was limited. The majority of the Site consisted of an area of hard-standing enclosed by fencing on all sides. A small, open-sided structure with a pitched roof is located in the centre of the Site and this marks the location of the well head.
- 3.5 The Phase 1 Habitat Survey map is presented in Appendix 1 (Figure 2) and the associated Target Notes (TN) are provided in Appendix 3. Photographs of the site are presented in Appendix 4. Summary details of each habitat found within the Site are provided below.

Compound

- 3.6 The hard-standing is sparsely vegetated with commonly occurring herbs and grasses including colt's-foot *Tussilago farfara*, sow thistle *Sonchus* sp., cock's-foot *Dactylis glomerata* and dandelion *Taraxacum* agg. Around the edges of the compound are gorse *Ulex europaeus*, sorrel *Rumex acetosa*, heather *Calluna vulgaris* and soft rush *Juncus effuses*.

Tall Ruderal Vegetation

- 3.7 The road verges adjacent to the Site are vegetated with a range of commonly occurring grass and herb species including ribwort plantain *Plantago lanceolata*, meadow grass *Poa* sp, cow parsley *Anthriscus sylvestris*, hogweed *Heracleum sphondylium*, bush vetch *Vicia sepium*, meadow buttercup *Ranunculus acris*, broad-leaved dock *Rumex obtusifolius*, red clover *Trifolium pratense*, colt's-foot, bramble *Rubus fruticosus* agg, sow thistle, wild angelica *Angelica sylvestris*, red campion *Silene dioica* and common nettle *Urtica dioica*.

Plantation

- 3.8 Outside the Site there is coniferous plantation on all sides (mainly sitka spruce *Picea sitchensis*). To the south is a narrow strip of trees with a road beyond. Another belt of trees then separates the Site from open fields that are being used for growing conifer saplings. To the west is another small area of conifer trees and beyond this are further open fields that are being used for growing conifer saplings. To the east and north are areas of semi-mature / mature coniferous plantation.

Waterbody

- 3.9 An area of standing water is present along part of the northern and eastern boundaries of the Site where an artificial liner has created a lined depression along the edge of the hard-standing. Whilst there are no aquatic plants in this waterbody, there are large flocs of filamentous algae. At the time of the Site visit a number of toad tadpoles were observed together with smooth newt (2 male and 2 female) and palmate newt (4 male and 7 female). Some of the newts were displaying.
- 3.10 The Habitat Suitability Index for the area of standing water within the Site (see Table 1) was calculated to be 0.58, which is defined as 'below average' (ARG UK, 2010). The Site itself is extremely poor for great crested newt as it is dominated by compacted crushed stone, which provides no sheltering opportunities for this species. The adjacent woodland provides much better quality terrestrial habitat.
- 3.11 The results of the water sample analysis are negative for great crested newt eDNA. There is no evidence of sample degradation and all replicates returned a negative result and so the result is considered to be reliable.
- 3.12 A pond is shown on the 1:25,000 scale Ordnance Survey map of the area at a location approximately 120 m to the west of the Site. This was examined during the Site visit and it was found to be dry. This area is dominated by semi-mature and immature broadleaf trees and shrubs with no standing water present. Occasional soft rush indicates that damp ground conditions may persist for part of the year.
- 3.13 A dry ditch was identified alongside the road to the south of the Site.

Table 1: HSI assessment of the standing water feature within the Site

Criteria	Pond 1
SI1 – Location	1
SI2 - Pond area	0.2
SI3 - Pond drying	1
SI4 - Water quality	0.67
SI4 – Shade	1
SI6 – Fowl	1
SI7 – Fish	1
SI8 – Ponds	0.1
SI9 - Terrestrial habitat	1
SI10 – Macrophytes	0.3
HSI Index	0.58

Invasive species

- 3.14 No invasive species were identified during the Site visit.

Badger

- 3.15 During the survey no badger signs, including setts, were found anywhere within or adjacent to the Site. The forestry that surround the Site is considered to be suitable for badgers to establish setts, and so their presence cannot be ruled out.

Bats

- 3.16 There are no trees located within or adjacent to the Site that have any suitability to support roosting bats. The adjacent plantation woodland comprises blocks of semi-mature / mature conifer trees none of which are considered to have potential to support roosting bats. Nevertheless, the plantation woodland is likely to provide good foraging habitat for bats.

Breeding Birds

- 3.17 The Site is assessed as having very limited potential for supporting breeding birds. The hard-standing that dominates the Site offers little cover or shelter for birds and the occasional presence of maintenance personnel as part of the currently consented operations (and as part of the proposed operations, but no more so than at present) is likely to result in the disturbance of any birds that are present. The only bird recorded within the Site at the time of the Site visit was pied wagtail *Motacilla alba*. It is considered unlikely that this species is nesting within the Site but it may be nesting nearby.
- 3.18 An assessment of the habitats has led to the conclusion that most breeding bird activity is likely to be confined to the conifer plantation adjacent to the Site. During the Site visit the following species were recorded: chaffinch *Fringilla coelebs*, wren *Troglodytes troglodytes*, coal tit *Periparus ater*, woodpigeon *Columba palumbus*, pied wagtail *Motacilla alba* and blackbird *Turdus merulla*.

Other Species

- 3.19 No other protected or notable species were recorded within the site during the Phase 1 Habitat Survey.
- 3.20 The plantation woodland adjacent to the Site may be used by hedgehog *Erinaceus europaeus* but no evidence of hedgehog presence was noted during the survey.

4 Potential Impacts

- 4.1 The desk study and survey work that has been completed have identified various species and habitats, the presence of which will need to be taken into account during the various phases of the proposed development. No further construction is proposed so the assessment has focussed on the maintenance of the existing facility and ultimately its abandonment and restoration.
- 4.2 Some species and habitats are identified as being of conservation importance, for example through the provisions of Section 41 of the Natural Environment and Rural Communities Act 2006 or within the local Biodiversity Action Plan. These habitats and species are consequently afforded protection through the National Planning Policy Framework and relevant local plan policies. The legislation and policy relating to the habitats and species identified within the site is presented in Appendix 5.

Constraints on Study Information

- 4.3 All survey work has been carried out by a competent experienced ecologist at an appropriate time of the year and in accordance with published guidance. Consequently no significant constraints have been identified.

Impact Assessment

Designated Sites

- 4.4 All statutory or non-statutory designated sites are sufficiently distant from the Site that impacts arising from the development are very unlikely.

Habitats

- 4.5 All habitat loss has previously taken place during the construction phase of the development. No further habitat loss is likely during the development.

Protected Species

Badgers

- 4.6 No signs of badger activity were found during the Site visit and consequently no impacts on badgers are predicted. Whilst it is possible that this species may occasionally forage within the Site or commute across it, the absence of tracks, snuffle holes, latrines and other field signs suggests that this is infrequent at best.

Bats

- 4.7 There are no bat roosts within the Site and no suitable bat roost features are present. Consequently no impacts on roosting bats are likely.
- 4.8 The habitat preferences of foraging bats are well researched and understood. Bats are known to have very specific habitat requirements for foraging and, in broad terms, they tend to favour structured habitats, such as broadleaf woodland, whilst generally avoiding uniform open habitats, such as arable land and improved grassland (Walsh and Harris 1996a). Consequently there is a high degree of confidence in the conclusion that the Site is unlikely to provide good foraging opportunities for bats (see for example Ekman & De Jong, 1996; Walsh & Harris, 1996a,b; Altringham, 2003; Downs & Racey, 2006; Brandt *et al.*, 2007).

Breeding Birds

- 4.9 No suitable bird nesting habitat is present within the boundary of the Site and it is therefore concluded that nesting opportunities are limited.

- 4.10 Disturbance of birds using the habitats adjacent to the Site may occur during the maintenance and abandonment and restoration phases, particularly from the movement of machinery and personnel. This may result in the displacement of birds that nest close to the Site. Disturbance may arise as a result of noise and/or vibration from machinery, and also as a result of the movement of people and machinery, i.e. visual disturbance. However, disturbance is likely to be temporary and localised in nature as the Site is only visited on an occasional basis.

Hedgehogs

- 4.11 Very limited foraging opportunities for hedgehogs are present within the Site itself. Consequently, if hedgehogs are present they are likely to favour the woodland that surrounds the Site.

Great crested newt

- 4.12 There is no evidence that great crested newt is present within the Site. It is concluded that there is a high likelihood that this species is not present within the Site, and consequently no impacts on this species are likely.

5 Recommendations

Mitigation Measures

Designated Sites

- 5.1 No impacts are predicted on designated sites within 2 km of the site, and consequently no mitigation measures have been proposed for such sites.

Habitats

- 5.2 Existing trees and shrubs outside the Site will not be affected by the proposed development. If work needs to take place near the retained trees and shrubs, they will be protected by adopting appropriate measures as set out in BS 5837:2012 'Trees in relation to design, demolition and construction'.

Protected Species

Bats

- 5.3 The Site does not support any roosting bats but the surrounding woodland may be used by foraging bats. Whilst these trees and shrubs will be retained, their value for foraging and commuting bats may be compromised by light spillage, if lighting is required. No lighting will be required during the operation of the Site, however it is possible that temporary lights may be required during the abandonment and restoration phase (5-6 weeks).
- 5.4 It is recommended that if temporary lighting is required, it should be kept to a minimum and should be directed to avoid light spillage on adjacent woodland areas or use hoods or deflectors (in line with NPPF paragraph 125 – see Appendix 5).

Breeding Birds

- 5.5 All works involving the disturbance or destruction of any habitats capable of supporting breeding birds (i.e. abandonment and restoration) should take place outside of the breeding season, which generally extends from mid-March to August. However, it should be noted that some species can commence breeding earlier or continue breeding efforts beyond this period. Activities taking place during the bird breeding season should not commence until the area has been checked for nesting birds by a suitably qualified ecologist. This should include the adjacent woodland fringe.
- 5.6 If nesting birds are detected then a suitable stand-off should be marked out around the area and work in that area should be delayed until the birds and their young have dispersed. The stand-off distance will vary depending upon the sensitivity of the species.

Great Crested Newt

- 5.7 There is no evidence to indicate that great crested newt is present within the Site and it is considered unlikely that colonisation will occur during the life of the project due to the absence of suitable waterbodies in the immediate area. Notwithstanding this, it is recommended that a further checking survey is undertaken prior to Site restoration commencing.
- 5.8 The survey work carried out at the Site indicates that the ditch supports a range of common amphibian species. It is therefore recommended that the restoration of the Site includes the provision of a pond.

Hedgehogs

- 5.9 The habitats within the Site have been assessed as offering very limited foraging opportunities and shelter for hedgehogs. No mitigation measures are proposed for this species.

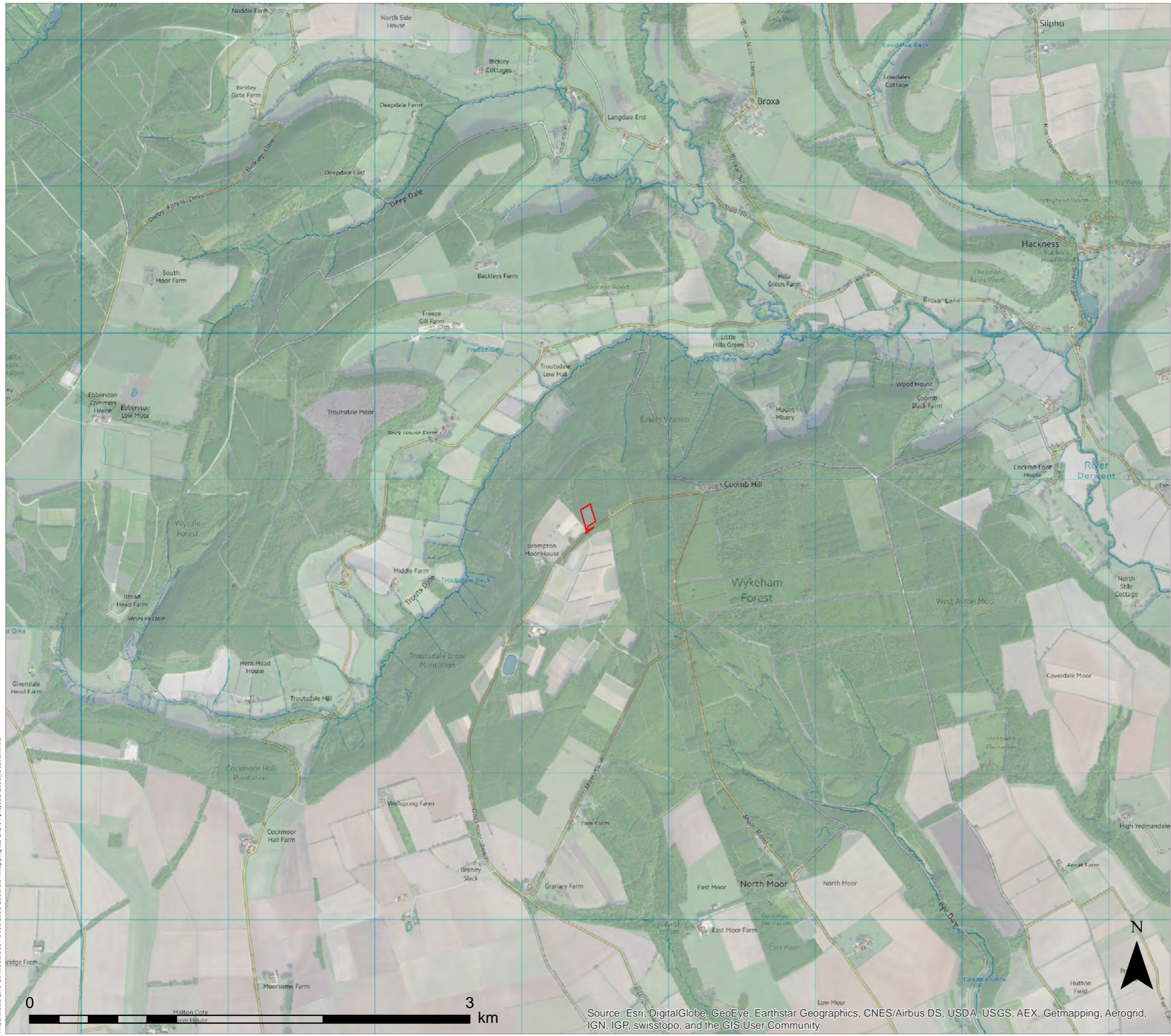
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Appendix 1: Figures

Figure 1: Location plan

Figure 2: Phase 1 habitat map



LEGEND

Site boundary



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 T: 0191 303 8964
 JOB REF: 8988.00

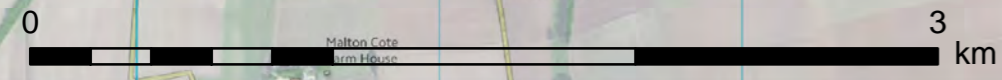
PROJECT TITLE
 EBBERSTON MOOR GAS WELL

DRAWING TITLE
 Figure 1: Location plan

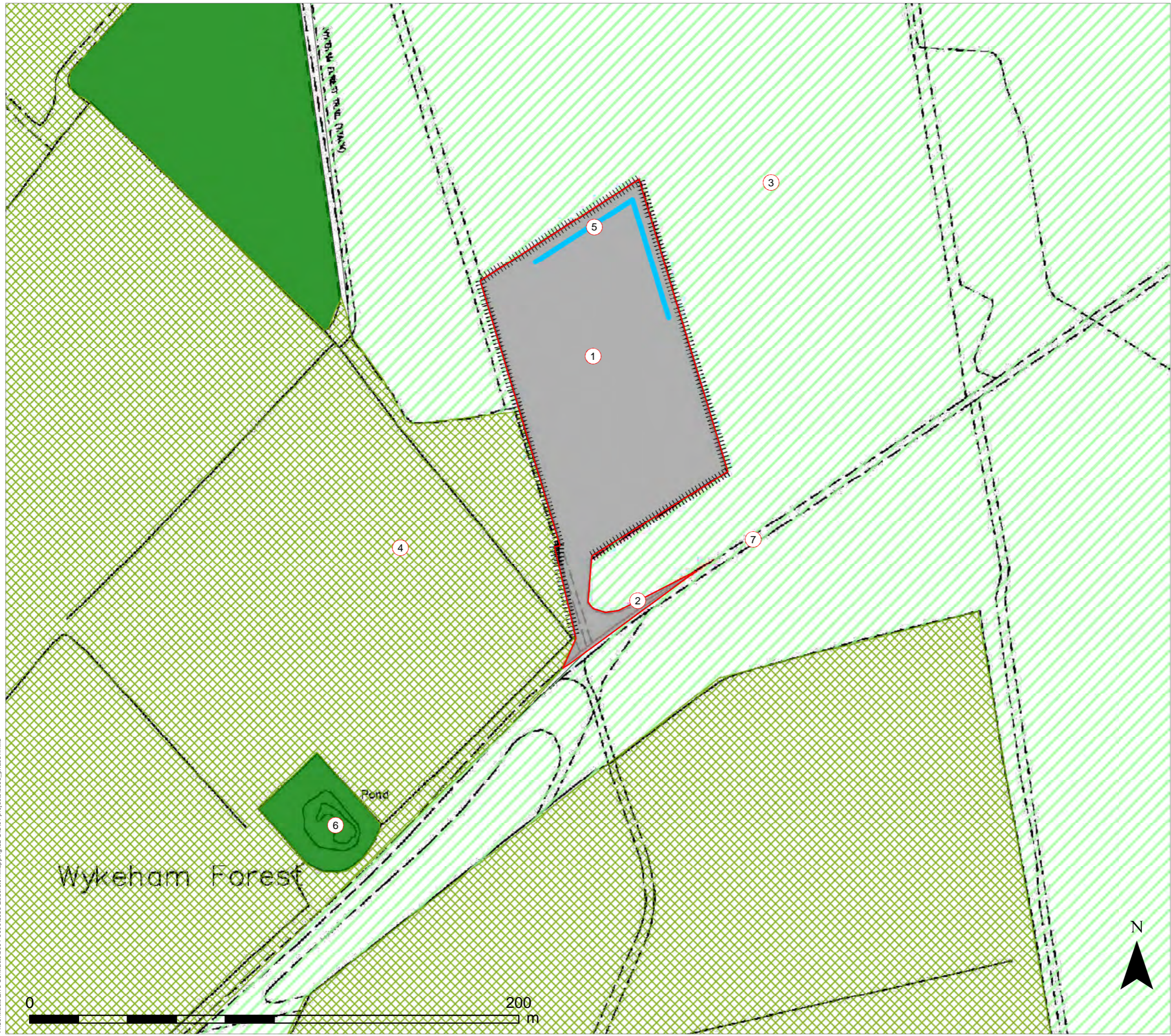
DATE: 15.07.2016 CHECKED: SB SCALE: 1:25,000
 DRAWN: COH APPROVED: SB STATUS: FINAL

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 Sources: BSG Ecology survey data

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LEGEND

- Site boundary
- Broadleaved semi-natural woodland
- Coniferous plantation woodland
- Hardstanding
- Tree nursery
- Standing water
- Fence
- 1 Target note

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PROJECT TITLE
EBBERSTON MOOR GAS WELL

DRAWING TITLE
Figure 2: Phase 1 Habitat Plan

DATE: 15.07.2016 CHECKED: SB SCALE: 1:1,500
DRAWN: COH APPROVED: SB STATUS: FINAL

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Sources: BSG Ecology survey data; basemap derived from Red Line Boundary Plan (PSSL/UK/EB3/PA/001) produced by PSSL

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Appendix 2: Water sample protocol for eDNA analysis

DNA Analysis Report - Commercial in Confidence



Customer: BSG Ecology
Address: Live Theatre
The Schoolhouse, 12 Trinity Chare
Quayside

NE1 3DF
Contact: Steve Betts
Email:
Tel:
Report date:
Order Number: GCN16-0240
Samples: Pond Water
Analysis requested: Detection of Great Crested Newt eDNA from pond water.

Thank you for submitting your samples for analysis with the Fera eDNA testing service. The details of the analysis are as follows:

Method:

The method detects pond occupancy from great crested newts (GCN) using traces of DNA shed into the pond environment (eDNA). The detection of GCN eDNA is carried out using real time PCR to amplify part of the cytochrome 1 gene found in mitochondrial DNA. The method followed is detailed in Biggs J., et al, (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

The limits of this method are as follows: 1) the results are based on analyses of the samples supplied by the client and as received by the laboratory, 2) any variation between the characteristics of this sample and a batch will depend on the sampling procedure used. 3) the method is qualitative and therefore the levels given in the score are for information only, they do not constitute the quantification of GCN DNA against a calibration curve, 4) a 'not detected' result does not exclude presence at levels below the limit of detection.

The results are defined as follows:

- Positive:** DNA from the species was detected.
eDNA Score: Number of positive replicates from a series of twelve.
Negative: DNA from the species was not detected; in the case of negative samples the DNA extract is further tested for PCR inhibitors and degradation of the sample.
Inconclusive: Controls indicate degradation or inhibition of the sample, therefore the lack of detection of GCN DNA is not conclusive evidence for determining the absence of the species in the sample provided.

DNA Analysis Report - Commercial in Confidence



CustomerReference	Fera Reference	GCN Detection	GCN Score	Inhibition	Degradation
-	S16-012901	Negative	0	No	No

The results indicate that eDNA for great crested newts was not detected in the sample submitted. Analysis was conducted in the presence of the following controls: 1) Extraction blank, 2) appropriate positive and negative PCR controls for each of the TaqMan assays (GCN, Inhibition, and Degradation). All controls performed as expected.

This test procedure was developed using research funded by the Department of Environment, Food and Rural Affairs, and was performed under the conditions of licensing arrangements with Applied Biosystems and patent rights owned by F. Hoffman-La Roche Ltd.

Issuing officer: Steven Bryce

Tel: 01904 462 324

Email: e-dna@fera.co.uk

Appendix 3: Phase 1 Habitat Survey Target Notes

1. Area of hard-standing sparsely vegetated with commonly occurring herbs and grasses including colt's-foot *Tussilago farfara*, sow thistle *Sonchus* sp., cock's-foot *Dactylis glomerata* and dandelion *Taraxacum* agg. Around the edges of the compound are gorse *Ulex europaeus*, sorrel *Rumex acetosa*, heather *Calluna vulgaris* and soft rush *Juncus effuses*.
2. Road verge vegetated with a range of commonly occurring grass and herb species including ribwort plantain *Plantago lanceolata*, meadow grass *Poa* sp, cow parsley *Anthriscus sylvestris*, hogweed *Heracleum sphondylium*, bush vetch *Vicia sepium*, meadow buttercup *Ranunculus acris*, broad-leaved dock *Rumex obtusifolius*, red clover *Trifolium pratense*, colt's-foot, bramble *Rubus fruticosus* agg, sow thistle, wild angelica *Angelica sylvestris*, red campion *Silene dioica* and common nettle *Urtica dioica*.
3. Coniferous plantation (mainly sitka spruce *Picea sitchensis*).
4. Fields that are being used for growing conifer saplings.
5. An area of standing water where an artificial liner has created a lined depression along the edge of the hard-standing. Large flocs of filamentous algae are present. A number of toad tadpoles are present together with smooth newt (2 male and 2 female) and palmate newt (4 male and 7 female). Some of the newts were displaying.
6. A dried up pond. This area is dominated by semi-mature and immature broadleaf trees and shrubs with occasional soft rush *Juncus effuses*.
7. A dry ditch alongside the road.

Appendix 4: Photographs







<p>Photo 1: Plantation woodland along the eastern boundary of the Site</p>	<p>Photo 2: Well-head structure</p>
	
<p>Photo 3: Raised earth bund along the western boundary of the Site</p>	<p>Photo 4: Fencing along the southern boundary of the Site</p>
	
<p>Photo 5: Ditch along the northern boundary of the Site</p>	<p>Photo 6: Ditch along the eastern boundary of the Site</p>
	

Photo 7: Western boundary of the Site



Photo 8: Southern boundary of the Site



Appendix 5: Summaries of Relevant Legislation, Policy and Other Instruments

6.1 This section briefly summarises the relevant legislation, policy and related issues that are mentioned in the main text of the report. The following text does not constitute legal advice.

National Planning Policy Framework

- 6.1 The government published the National Planning Policy Framework (NPPF) on 27th March 2012. The NPPF states that, “*the planning system should contribute to and enhance the natural and local environment by:*
- a. *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
 - b. *Recognising the wider benefits of ecosystem services;*
 - c. *Minimising impacts on biodiversity and providing net gains in biodiversity, where possible contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
 - d. *Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
 - e. *Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”*

Planning – land allocation and policies

- 6.2 The NPPF indicates that ‘*in preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework.*’
- 6.3 In paragraph 111, the NPPF refers to brownfield land as follows: ‘*planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value.*’
- 6.4 Local planning authorities are advised in paragraph 113 to ‘*set criteria-based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.*’
- 6.5 Local planning authorities are advised further to ‘*set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure...*’
- 6.6 In paragraph 115 the NPPF states that for National Parks, the Broads and Areas of Outstanding Natural Beauty ‘*the conservation of wildlife and cultural heritage are important considerations in all these areas and should be given great weight in National Parks and the Broads.*’ The accompanying Paragraph 116 sets out the assessment requirements should planning applications be considered in these areas although the default is that ‘*planning permission should be refused for major developments in these designated areas except in exceptional circumstances and where it can be demonstrated they are in the public interest.*’

- 6.7 The NPPF also states that, “to minimise impacts on biodiversity and geodiversity, planning policies should:
- a. Plan for biodiversity at a landscape-scale across local authority boundaries;
 - b. Identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;
 - c. Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets; and identify suitable indicators for monitoring biodiversity in the plan;
 - d. Aim to prevent harm to geological conservation interests; and
 - e. Where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.”

Planning applications and biodiversity

- 6.8 “When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:
- a. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - b. Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest features is likely, an exception should only be made where the benefits of the development, at this site clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
 - c. Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
 - d. Opportunities to incorporate biodiversity in and around developments should be encouraged;
 - e. Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and
 - f. The following wildlife sites should be given the same protection as European sites:
 - i. potential Special Protection Areas and possible Special Areas of Conservation
 - ii. listed or proposed Ramsar sites; and
 - iii. sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”
- 6.9 “The presumption in favour of sustainable development (paragraph 14 [of NPPF]) does not apply where development requiring appropriate assessment under the Birds and Habitats Directives is being considered, planned or determined.”
- 6.10 In paragraph 125 the NPPF stipulates that ‘by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.’

Species and Habitats of Principal Importance

- 6.1 The NPPF (paragraph 117) indicates that local authorities should take measures to “*promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species*” linking to national and local targets through local planning policies. Priority species are those species shown on the England Biodiversity List published by the Secretary of State under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Planning authorities have a duty under Section 40 of the NERC Act to have regard to priority species and habitats in exercising their functions including development control and planning.

Local Biodiversity Action Plans

- 6.2 The UK BAP is supported by a series of Local Biodiversity Action Plans (LBAPs), usually set up on a local authority administrative boundary basis. Each LBAP identifies those habitats and species considered to be most important in that area (usually referred to as priority habitats and species). Commonly, an LBAP will identify a number of habitats and species for which “action plans” have been prepared.

Hedgerows

- 6.3 The Hedgerows Regulations 1997 prohibit the removal of most countryside hedgerows without first submitting a hedgerow removal notice to the local planning authority. Local planning authorities are able to order the retention of ‘important’ hedgerows. The Regulations set out the criteria that should be used by the local planning authority in determining which hedgerows are important and which should therefore be protected.
- 6.4 In England, hedgerows are included on the Government’s list of habitats considered to be of Principle Importance. Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on the Secretary of State to publish, review and revise lists of living organisms and types of habitat in England that are considered to be of principal importance for the purpose of conserving English biodiversity.

Hedgerow Regulations 1997

- 6.5 The following summary of Schedule I, Part 2, of the Hedgerow Regulations is extracted from the DEFRA leaflet ‘The Hedgerow Regulations - Your Questions Answered’. To qualify as ‘important’, a hedgerow must be at least 30 years old and at least 20m long (although shorter hedges can be included if linked to other hedgerows) and meet at least one of 8 criteria below, which relate to the hedgerow’s archaeological, historical, wildlife or landscape value:
1. Marks a pre-1850 parish or township boundary.
 2. Incorporates an archaeological feature.
 3. Is part of, or associated with, an archaeological site.
 4. Marks the boundary of, or is associated with, a pre-1600 estate or manor.
 5. Forms an integral part of a pre-Parliamentary enclosure field system.
 6. Contains certain categories of species of bird, animals or plants listed in the Wildlife and Countryside Act or Joint Nature Conservation Committee (JNCC) publications.
 7. Includes:
 - a. At least 7 woody species, on average, in a 30m length.
 - b. At least 6 woody species, on average, in a 30m length and has at least 3 associated features.
 - c. At least 6 woody species, on average, in a 30m length including a black-poplar tree, or a large-leaved lime, or small-leaved lime, or wild service-tree.
 - d. At least 5 woody species, on average in a 30m length and has at least 4 associated features (see below).

8. Runs alongside a bridleway, footpath, road used as a public path, or a byway open to all traffic and includes at least 4 woody species, on average, in a 30m length and has at least 2 of the associated features listed at (i) or (v) below. The associated features are:
 - i. A bank or wall supporting the hedgerow.
 - ii. Less than 10% gaps.
 - iii. On average, at least one tree per 50m.
 - iv. At least 3 species from a list of 57 woodland plants.
 - v. A ditch.
 - vi. A number of connections with other hedgerows, ponds or woodland.

Bats

6.6 Bats are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under the Conservation of Habitats and Species Regulations 2010. Taken together, these make it an offence to:

- Deliberately capture or intentionally take a bat.
- Deliberately or intentionally kill or injure a bat.
- To be in possession or control of any live or dead wild bat or any part of, or anything derived from a wild bat.
- Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection.
- Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.
- Deliberately disturb any bat in such a way as to be likely significantly to affect;
 - the ability of any significant group of animals of that species to survive, breed or rear or nurture their young; or
 - the local distribution or abundance of that species.

6.7 A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, legal opinion is that a bat roost is protected whether or not the bats are present at the time. However, this has yet to be tested in law.

6.8 Although the law provides strict protection to bats, it also allows this protection to be set aside (derogation) under Section 53 of the Conservation of Habitats and Species Regulations 2010 through the issuing of licences. In England these licences are currently determined by Natural England (NE) for development works.



Breeding Birds

6.9 All birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take any wild bird or take damage or destroy the nest while in use or being built or take or destroy an egg. Certain species of bird that are listed in Schedule 1 of the Act receive additional protection. For these species it is an offence to recklessly disturb the bird while it is on its nest or to disturb the dependant young of such a species.



6.10 In addition, the EU Birds Directive, Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006 all provide protection to certain bird species and their habitats in the UK.

- 6.11 A number of birds of particular conservation concern have also been assigned priority status under the UK BAP. These are generally species which occur on the Birds of Conservation Concern Red List (Gregory et al, 2002) and usually belong to groups that are particularly influenced by unfavourable land management. Some species are also given priority within the local BAP, and these require action at the local level.



Ebberston Moor 3 TMP and Road Condition Survey

Photo		Comment/ feature
1		<p>Wykeham Lane just beyond A170 junction. Parking/ passing place on gravel to right outside church and in pub car park to left.</p>
2		<p>New passing place on Wykeham Lane (approx. 200m from junction with A170) widening narrow section of road just after bridge. Some minor damage to verge on left.</p>

Ebberston Moor 3 TMP and Road Condition Survey

3	 <p>A photograph of a narrow asphalt road winding through a dense forest of tall green trees. The road surface is dark grey with some lighter patches. The date '26/05/2016' is printed in orange at the bottom center of the image.</p>	<p>Looking south over bridge over Beedale and new passing place – approx. 200m north of junction with A170.</p>
4	 <p>A photograph of a narrow asphalt road in an open landscape under a cloudy sky. The road is flanked by green grass and some trees. The date '26/05/2016' is printed in orange at the bottom center of the image.</p>	<p>Retained passing place on Wykeham Lane (approx. 400m from A170). Some minor overrun on verges.</p>

Ebberston Moor 3 TMP and Road Condition Survey

5	 <p>A photograph of a paved road with a small pond of water on the surface. The road is flanked by green grass and trees. A date stamp '26/05/2016' is visible in the bottom right corner of the image.</p>	<p>Slight ponding at join of above passing place (retained) to carriageway.</p>
6	 <p>A photograph of a paved road curving to the right. The road is bordered by a grassy verge and a hedge. A date stamp '26/05/2016' is visible in the bottom right corner of the image.</p>	<p>Some overrun onto verge at left opposite retained passing place on Wykeham Lane (approx. 750m from A170)</p>

Ebberston Moor 3 TMP and Road Condition Survey

7





Some overrun onto verge at left – upgraded passing place at turnoff to Bedale Grange approx. 950m from A170. Monitor vegetation to left of carriageway, which may obscure bend in road to left.



Ebberston Moor 3 TMP and Road Condition Survey

8		<p>Poor visibility at informal (retained) passing place/ field entrance due to vegetation and road curve. May benefit from trimming of trees/ hedge to left. Some damage to verge and potholing. Approx 1350m from A170</p>
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Ebberston Moor 3 TMP and Road Condition Survey

<p>9</p>		<p>Upgraded passing place (1.8 km from A170)</p>
<p>10</p>		<p>Retained passing place with minor overrun of verge on left. (Approx 2 km from A170)</p>



Ebberston Moor 3 TMP and Road Condition Survey

<p>11</p>		<p>Retained informal passing place at field entrances, with minor overrun to verge. Good visibility round slight road curve. Approx 2.25km from A170</p>
<p>12</p>		<p>Retained formal passing place 2.5 km from A170. Past repair of road apparent.</p>

Ebberston Moor 3 TMP and Road Condition Survey

<p>13</p>		<p>Retained informal passing place at field entrance (approx. 2.65 km from A170). Past repair of road evident.</p>
<p>14</p>		<p>Upgraded passing place by existing curve in road. Well maintained hedges retain visibility at present. Approx 2.8km from A170</p>



Ebberston Moor 3 TMP and Road Condition Survey

<p>15</p>		<p>New passing place with visibility markers to prevent overrun into ditch. Approx 3 km from A170.</p>
<p>16</p>		<p>Existing informal passing place (at North Moor) with some overrun of carriageway. Approx 3.3 km from A170</p>



Ebberston Moor 3 TMP and Road Condition Survey

<p>17</p>		<p>Retained formal passing place on Moor Road, north of North Moor crossroads to Quarry Gate (approx. 3.75 km from A170)</p>
<p>18</p>		<p>Upgraded passing place at 4.3km from A170 near forestry access. Roadside vegetation permits relatively good visibility. Some overrun of verge on right.</p>

Ebberston Moor 3 TMP and Road Condition Survey

<p>19</p>		<p>Upgraded informal passing place at 4.85km from A170 near forestry access. Roadside vegetation permits relatively good visibility. Some overrun of verge on right. Past repair of road apparent.</p>
<p>20</p>		<p>Upgrade of informal passing place, with visibility marker to mark verge/ ditch. Approx 5.35km from A170.</p>

Ebberston Moor 3 TMP and Road Condition Survey

<p>21</p>		<p>New passing place with sign by forestry tracks. Approx 5.6km from A170 on Moor Road.</p>
<p>22</p>		<p>Upgrade of informal passing place by forestry track. Mud on road indicates some verge overrun. Vegetation on road curve well maintained, but to be monitored. Approx 5.85km from A170.</p>



Ebberston Moor 3 TMP and Road Condition Survey

<p>23</p>		<p>Overrun on verge on approach to junction with Cockmoor Road.</p>
<p>24</p>		<p>New passing place with kerb and visibility markers at junction with Cockmoor Road. Approx 6.35km from A170.</p>

Ebberston Moor 3 TMP and Road Condition Survey

25	 <p>A photograph of a paved road winding through a wooded area. The road is flanked by grassy verges and trees. A date stamp '26/05/2016' is visible in the bottom right corner of the image.</p>	<p>Verge markers at above new passing place. Some overrun onto verge on right.</p>
26	 <p>A photograph of a road junction. The road curves to the right, and a red and white marker is visible on the verge. The area is surrounded by trees and vegetation. A date stamp '26/05/2016' is visible in the bottom right corner of the image.</p>	<p>Some overrun onto verge at left at junction with Cockmoor Road. Visibility around junction partly obscured by trees.</p>

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27		Site from forestry track south of Cockmoor Road. New junction into site well maintained but damage to track evident.
28		As above, looking to west of site.

Ebberston Moor 3 TMP and Road Condition Survey

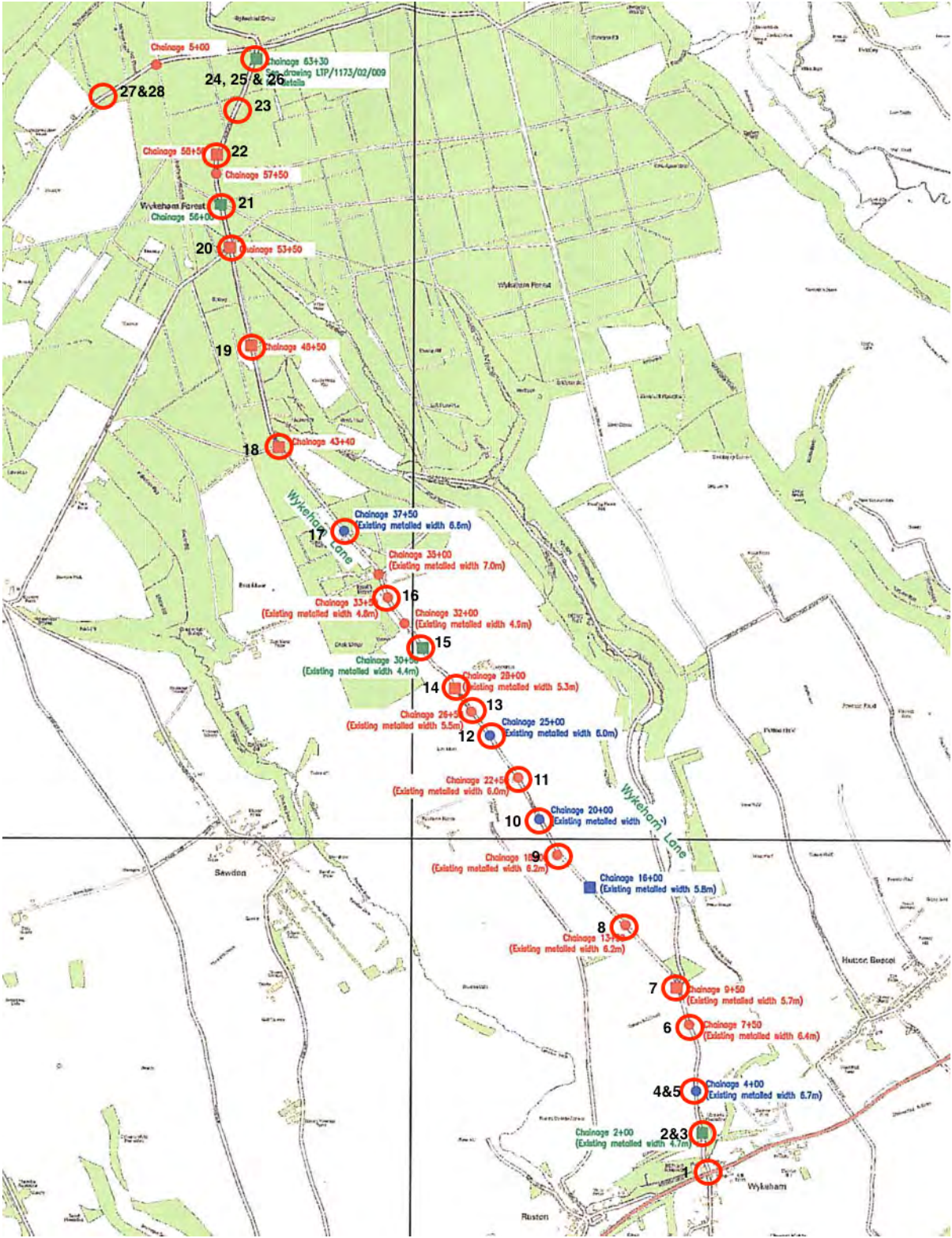


Figure AC2: Indicative Location of Photos