



Knapton Generating Station and Vale of Pickering Wells

Screening Requests under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017

Kirby Misperton-A Wellsite

To vary Condition 2 of North Yorkshire County Council planning consent C3/06/00625/CPO/C under Section 73 of the Town and County Planning Act 1990.

To vary Condition 3 of North Yorkshire County Council planning consent C3/12/00989/CPO under Section 73 of the Town and County Planning Act 1990.

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1 Introduction

1.1 Overview

- 1.1 Third Energy UK Gas Limited (Third Energy) intends to apply for planning consent to extend the lifetime of its gas and power infrastructure in North Yorkshire, which expires in May 2018. The infrastructure includes the following:
- Knapton Generating Station (KGS) – a facility including a gas-powered turbine, and overhead line (OHL) transmitting electricity produced to the National Grid
 - Six conventional wellsites producing natural gas – Kirby Misperton A (KM-A), Kirby Misperton B (KM-B), Malton A (MN-A), Malton B (MN-B), Marishes (MAR) and Pickering (PK); and
 - A pipeline network connecting the wellsites to KGS, transporting gas to KGS and condensates to KM-A for re-injection into a dedicated re-injection well.
- 1.2 It is intended to extend the lifetime of KGS and the OHL under Section 36C and Section 37 respectively of the Electricity Act 1989 (as amended), and the wellsites under Section 73 of the Town & Country Planning Act 1990 (as amended). The pipeline network is currently consented under several planning consents, and it is Third Energy's intention to combine these in a single consent, so an application for full consent would be made under the Town & Country Planning Act 1990 (as amended). The applications for consent relating to the wellsites and pipeline network would therefore fall to be considered by North Yorkshire County Council (NYCC). The applications relating to KGS and the OHL would be considered by the Department for Business, Energy and Industrial Strategy (BEIS).
- 1.3 A briefing note has been prepared, outlining the planning history of the infrastructure and the proposed strategy to extend its lifetime. This screening request should be read in conjunction with the briefing note.
- 1.4 This screening request is submitted to NYCC, to determine whether Third Energy's proposed applications under Section 73 of the Town & Country Planning Act 1990 to extend the lifetime of the existing KM-A wellsite and associated infrastructure therein¹, including the wells and plant (the "Proposed Development") constitutes Environmental Impact Assessment ("EIA") development. NYCC is the Relevant Authority ("RA") for the proposed development.
- 1.5 This report reflects the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ("EIA Regulations") and in accordance with Regulation 6 (2) and Schedule 3 of the EIA Regulations, this report contains:
- a plan of the site of the development (Appendix 1);

¹ Two planning applications cover the site – the "original" wellsite, as covered by a 2006 consent, and the 2013 extension. These now form a coherent single site ("KM-A"), but with separate planning consents covering the two halves. However, for the purpose of this screening report they are considered as a single site to ensure the obvious cumulative effect of each on the other is fully addressed. Two separate planning applications would be submitted, however.

- a description of the development (Chapter 2 and 3), including in particular:
 - a description of the physical characteristics of the development and, where relevant, of demolition works;
 - a description of the location of the development, with particular regard to the environmental sensitivity of geographical areas likely to be affected;
 - a description of the aspects of the environment likely to be significantly affected by the development;
 - a description of any likely significant effects, to the extent of the information available on such effects, of the development resulting from the expected residues and emissions and the production of waste, where relevant, and the use of natural resources, in particular soil, land, water and biodiversity;

- 1.6 In addition, other relevant EU assessments (including necessary assessments under the Habitats Regulations) are addressed.
- 1.7 A site plan of the KM-A wellsite is shown in Drawing ZG-TE-KMA-PA-01 in Appendix 1. Its location within the network of wells, pipelines and other infrastructure is shown in Drawing ZG-TE-PL-PA-01 in Appendix 1.
- 1.8 This report also outlines features of the existing development and existing mitigation measures already in place (and which would continue under the Proposed Development) to avoid or prevent what might otherwise be significant adverse effects on the environment. These are more particularly detailed in Appendix 2.

1.2 Requirement for EIA

- 1.9 In order to determine whether the Proposed Development is 'EIA development', regard must be had by the RA to the EIA Regulations and supporting Planning Practice Guidance ("PPG")².
- 1.10 EIA development falls into two Schedules of the EIA Regulations. EIA is mandatory for developments listed within Schedule 1. Schedule 2 developments require EIA if they would be "likely to have significant effects on the environment by virtue of factors such as its nature, size or location".
- 1.11 Regulation 5(4) states the RA must make a screening decision on the basis of the information provided by the developer, taking account, where relevant, of—
- (a) any information provided by the applicant;
 - (b) the results of any relevant EU environmental assessment which are reasonably available to the relevant planning authority or the Secretary of State; and

² *Planning Practice Guidance on Environmental Impact Assessment* - <https://www.gov.uk/guidance/environmental-impact-assessment> . This guidance refers to the *Town and Country Planning EIA Regulations 2017*.

(c) such of the selection criteria set out in Schedule 3 as are relevant to the development.

- 1.12 If the RA is of the opinion that the development is likely to have significant effects on the environment, the RA must make a screening decision that the development is EIA development.
- 1.13 In order to allow the RA to determine the need for EIA, this report provides a description of the site and Proposed Development (Chapter 2), a review of the EIA screening criteria based on the EIA Regulations and the PPG, a completed EIA Screening Checklist (Chapter 3), a site location plan in Appendix 1, and a summary of embedded mitigation measures within Appendix 2.

2 Site and Proposed Development

2.1 Site Context

- 2.1 The Kirby Misperton A Wellsite (KM-A) is located at Habton Road, Kirby Misperton, Malton, North Yorkshire, YO17 6XS. Its grid reference is SE 771 789 and it covers approximately 1.63 ha. The site was originally developed on a smaller footprint as “Kirby Misperton 1”, and was extended in 2013. Both halves of the wellsite are collectively termed KM-A. The site is located approximately 750 m south-west of Kirby Misperton, 6 km south-west of Pickering and 8 km north of Malton. It is accessed from an existing track to the south which runs off the Habton Road near Kirby-O-Carr.
- 2.2 The site is located within open countryside in the county of North Yorkshire, in the District of Ryedale and within the Parish of Kirby Misperton.
- 2.3 The ground around the KM-A wellsite drains to the south-west following local topography, and the majority of surface water runoff in the area is intercepted by a series of field drains draining towards Ackland Beck to the south and west and Costa Beck to the east. The Ackland Beck confluences with the Costa Beck approximately 3.5 km south-east of the KM-A wellsite, which then flows to the east towards the River Rye. The River Seven is located approximately 2.5 km to the west of the KM-A wellsite and flows to the south, joining the River Rye at Little Habton.
- 2.4 Surrounding land is primarily agricultural with pockets of woodland and interspersed hedgerows. The farmland upon which the KM-A wellsite is constructed has been given an Agricultural Land Classification (ALC) of three (3). The site is screened to the south by the existing mature landscaping associated with the original “Kirby Misperton 1” wellsite. This comprised bunding planted with trees to the east and south, and Sugar Hill drain to the west. The screening to the east and north (including soil bunds) was the subject of a landscaping scheme agreed with the MPA in 2013 and implemented in March 2014. Once mature, the screening will provide additional mixed woodland planting to the site boundaries.
- 2.5 The nearest electricity supply to the KM-A wellsite is located immediately adjacent to the northern perimeter of the wellsite. A 50kVA transformer is located on an electricity pole immediately adjacent to the north-eastern corner of the wellsite, which is connected to KM-A wellsite control room via an underground cable. This is sufficient to provide power to the existing production equipment and associated lighting. There is no mains gas or water supply or permanent sewage connection to the KM-A wellsite. A communications link to KGS is provided by an underground fibre optic cable.

Summary of Operations

- 2.6 KM-A is a “hub” in the pipeline network connecting the Vale of Pickering wellsites. The wellsite collects and separately co-mingles gas and produced water (water extracted alongside gas from the gas producing formation) from the connected production wellsites; Pickering (PK), Kirby Misperton B (KM-B), Malton A (MN-A), Malton B (MN-B) and Marishes (MAR)³.

³ Gas from MAR does not pass through KM-A, though produced water does, for re-injection into KM-3.

- 2.7 The wellsites in the area produce gas from the Kirkham Abbey Formation (KAF)⁴. At KM-A this formation is at approximately 1,500m below ground level. The gas produced from the wellsites is “sour”, having a hydrogen sulphide (H₂S) concentration of circa 600-800ppm/0.01%.
- 2.8 The PK wellsite produces gas alongside produced water, which are transported by the pipeline unseparated to KM-A. At KM-A, the gas is separated from the water in a separation vessel. Gas and produced water from the other wellsites are separated on the respective wellsites, and transported separately. Gas from all the wellsites (except MAR) is co-mingled and transmitted to KGS (via MAR) via an underground gas pipeline. Produced water from all the wellsites is co-mingled and re-injected into the producing formation (KAF) via the KM-3 re-injection well, which is a dedicated re-injection well.
- 2.9 In addition, KM-A receives hydrocarbon condensates from the gas conditioning process at KGS, which are also re-injected via KM-3 into the KAF, co-mingled with the produced water⁵.
- 2.10 The KM-A wellsite is currently not producing gas. On the site there are:
- two inactive production wells, KM-7 (suspended. This was drilled as a sidetrack to KM-1 in 2012) and KM-8 (underwent a workover in October 2017 and currently awaiting hydraulic fracture);
 - abandoned well (KM-1– drilled in 1985) – this is the KM-7 well at surface;
 - one active re-injection well for produced water and hydrocarbon condensate (KM-3 drilled in 1987)
 - five water monitoring boreholes
 - BHA, BHB and BHC are all shallow (11.5m below ground level)
 - Intermediate BHD (38m below ground level)
 - Deep (Corallian) BHE (222m below ground level)
 - Four further wells, KM-2, KM-4, KM-5 and KM-6 are on the KM-B wellsite approximately 750m to the west. (Only KM-5 and KM-6 are at surface).
- 2.11 These are addressed further in Section 2.4.

2.2 KM-A planning history

- 2.12 The KM-A wellsite was constructed in two phases. The southern section of the site was constructed in 1984 by Taylor Woodrow Energy Ltd, and was called the “Kirby Misperton 1 wellsite”.
- 2.13 KM-1 was drilled from this site in 1985. This was tested and suspended until 1994. In 1994 Kelt UK Ltd, brought KM-1 online as part of the “North Yorkshire Power Project”, and began producing gas from the Carboniferous sandstone. Production had declined markedly by 2008

⁴ KM-5 on KM-B produces gas from the KAF, but also is capable of producing from the Namurian formation in future, although this would require a workover.

⁵ For the purpose of this report, reference to “produced water” being re-injected into KM-3 is assumed to refer to hydrocarbon condensates as well, as both are transported in the liquid pipelines. The hydrocarbon condensates are originally present in the gas producing formation, extracted from the “gas” stream at KGS. Liquid pipelines refer to pipelines designed to carry both produced water and hydrocarbon condensates, and “liquids” refer to a mixture of produced water and hydrocarbon condensate.

- so a workover to re-perforate the reservoir section to improve recovery rates was undertaken. However, after the operation the well failed to recover hydrocarbons and the lower section was abandoned.
- 2.14 A sidetrack from KM-1 was drilled as KM-7 in 2012. This was also suspended following testing.
- 2.15 KM-3 was drilled by Kelt UK Ltd in 1987. This was drilled as a gas appraisal well, but was converted into a well for re-injection of produced water and hydrocarbon condensates from the gas treatment process at KGS.
- 2.16 This southern portion of the wellsite formed part of the “North Yorkshire Power Project” in 1993, and conditional planning permission was granted to Kelt UK Ltd for the installation of gas production and gas/liquid separation equipment, carrying out well maintenance operations and retention of the access road to enable the winning of underground gas reserves, for use in the generation of electricity. This was the outcome of a planning appeal under Section 78 of the Town and Country Planning Act 1990.
- 2.17 Condition 3 required the operations to be discontinued, buildings and plant ceased to be used and removed from the site, and the site to be restored, either by 1 April 2008, within six months of the cessation of gas production, or within six months of the cessation of electricity production at KGS, whichever is sooner.
- 2.18 This consent was extended in 2006, by an application from Viking UK Gas Limited⁶ to NYCC under Section 73 of the Town and Country Planning Act 1990. This was to vary Condition 3 of the 1993 consent, and extended the lifetime of the wellsite as a production wellsite until May 2018; ten years from the 2008 original end-date. (This time limit condition became Condition 2 in the varied consent).
- 2.19 In 2013, consent was granted by NYCC for an extension of the “Kirby Misperton 1 wellsite”. This extension covered approximately 0.5 ha to the north of the existing site, and was joined as part of the existing site, though at a slightly higher elevation. The KM-8 well was drilled from this extension in 2013 as a production well. A further well was also consented from this same extension, but has not yet been drilled.
- 2.20 In 2015, various planning consents were granted by NYCC for the entirety of the new wellsite (i.e. the old and extension wellsite), relating to security around the site, and installation of water monitoring boreholes. The lifetime of these applications acknowledged that there was potential for the site to be required beyond May 2018, so consent was granted until six months following cessation of gas production or following abandonment of the site.
- 2.21 Third Energy UK Gas Limited gained consent in 2016 for a workover of KM-8 followed by a stimulation of the unconventional section by hydraulic fracturing. As part of this consent, the lifetime of the well was extended beyond the “blanket” date of May 2018 for the other parts of the “North Yorkshire Power Project” (as extended in 2006) until May 2026.
- 2.22 At present the KM-A wellsite is not producing gas. It has mature landscaping around the edge of the wellsite (both around the original site and west of the extension site) and bunding to the northern and north-eastern edges, with immature landscape planting. The KM-7 well is capped with a wellhead valve assembly in the drilling cellar below ground level. The KM-3 re-

⁶ Viking UK Gas Limited changed its name to Third Energy UK Gas Limited in November 2013 – though is the same company.

injection well is in use, with a re-injection “tree” above ground level. The KM-8 well underwent a workover in October 2017, in preparation for hydraulic fracturing later in 2018, and associated water monitoring boreholes are in place for routine monitoring. Gas/ liquid separators are also in place, for the (suspended) KM-1/7 well, KM-3 and for the PK wells. Equipment including pressure relief valves, a glycol pump and tank are present on the site, alongside a control room that is linked remotely to KGS.

2.23 In summary, on KM-A, Third Energy has planning consent for:

- Retention of KM-1/ KM-7⁷ with appropriate maintenance subject to provision of additional information to discharge conditions for any workovers etc. (until May 2018);
- Continued use of KM-3 for re-injection (up to 1500m³ of produced water and hydrocarbon condensates per day from the satellite wellsites and KGS – as outlined in the relevant environmental permit), and appropriate maintenance of this well subject to provision of additional information to discharge conditions for any workovers etc. (until May 2018);
- Monitoring of groundwater from the five water monitoring boreholes on site (until cessation of gas production);
- Drilling of one further gas production well on the northern extension, subject to provision of additional information to discharge conditions (until May 2018);
- Cleaning KM-8 and stimulation of KM-8 by hydraulic fracturing (until May 2026); and
- Abandonment and restoration of the wells and wellsite (until May 2018).

2.24 Work associated with these is outlined in Section 2.5.

Environmental Permitting

2.25 There are currently three environmental permits for the site.

- EPR/DB3002HE – this was granted in April 2016 and permits the following activities that relate to exploration for and extraction of natural gas from an existing well (KM-8) by hydraulic fracturing. This permit addresses the “KM-8” operations only, which are not part of the Proposed Development:
 - The management of extractive waste, not involving a waste facility;
 - The management of extractive waste generated by well abandonment;
 - The management of extractive waste by way of a waste facility for non-hazardous waste; and
 - The injection of hydraulic fracturing fluid to ground via KM-8 well.

⁷ At surface it is KM-7.

- EPR/KB3098DE – this was granted in April 2016 and permits the following activities over the entire site:
 - Accumulation of radioactive waste on the premises arising from the Naturally Occurring Radioactive Material (NORM) Industrial Activity of the production of oil and gas; and
 - Disposal of radioactive waste on or from the premises arising from the NORM Industrial Activity of the production of oil and gas
- NPSWQD001330 – this was granted in February 2010 and permits:
 - The re-injection of produced water into the KM-3 well.

2.26 A variation to the latter environmental permit is under consideration by the Environment Agency, to address mining waste activities not associated with the KM-8 operations.

2.3 Proposed Development

2.27 The Proposed Development is the extension of the operating period of the existing KM-A wellsite from 2018 to 2035 (across two planning applications as indicated below). This covers “conventional” gas operations on the wellsite only and does not cover any activities associated with the hydraulic fracturing of the KM-8 well, or other “unconventional” operations.

2.28 It is requested that the lifetime of the wellsite is extended until December 2035, which is the date of the existing consent at the PK wellsite (PK-1), and the requested date of extension of KGS, the pipeline network and the remainder of the infrastructure. This would provide the following benefits:

- Ensure that the KM-3 re-injection well has the capability to be used to re-inject produced water and hydrocarbon condensates from other wells in the field;
- Ensure that the wellsite could potentially continue to be used as a “hub” in the pipeline network, including housing the gas/produced water separators for the PK wellsite; and
- Allow for gas to continue to be produced from the wellsite to fuel KGS, whether from existing wells, or from potential future wells drilled on the wellsite (with relevant planning consent and permitting being gained).

2.29 It is intended that the existing environmental permits, and associated inspections of the surface infrastructure at KM-A (and HSE regulation of the pipelines feeding to and from KM-A) will continue for this period. Any variations required by these regulators will be applied for by Third Energy, and relevant changes made to operations. Should these permits be surrendered in advance of 2035, the infrastructure will be decommissioned and the site restored in accordance with the planning conditions.

2.30 The applications will therefore be made as follows:

- To vary Condition 2 of North Yorkshire County Council planning consent C3/06/00625/CPO/C⁸ (itself extending the deemed planning consent granted in 1993 for the “North Yorkshire Power Project”) under Section 73 of the Town and County Planning Act 1990. This would amend the relevant operational time limit condition.
- To vary Condition 3 of North Yorkshire County Council planning consent C3/12/00989/CPO to construct an extension to the north of the wellsite, and drilling and testing two gas boreholes under Section 73 of the Town and County Planning Act 1990. This would amend the relevant operational time limit condition.

Activities on the wellsite that are not part of the Proposed Development

- 2.31 The planning consent for the hydraulic stimulation of KM-8 (C3/15/00971/CPO) restricts work to May 2026. It is not intended to apply to extend this deadline – though the footprint and infrastructure for the KM-8 well would be included within the extended consent for the northern extension. At present, the length of time this well will produce gas is unknown. Should it produce beyond 2026, an amendment will be sought at the time.
- 2.32 The planning consent for water monitoring boreholes (C3/15/00470/CPO) is valid “until the cessation of gas production”. Therefore there is no intention to extend this consent.

2.4 Site and Well Construction

- 2.33 KM-A is an existing wellsite surrounded by arable farmland, with natural screening around the boundary. The access track to the wellsite is off Habton Road opposite Kirby-o-Carr Farm, and then immediately to the north.
- 2.34 The KM-A wellsite consists of two halves, constructed immediately adjacent to each other and sharing the same access – these are covered by separate planning consents, but effectively comprise a single site.

Kirby Misperton 1 (1984)

- 2.35 The topsoil was carefully removed in accordance with best practice and relocated to the north and eastern boundary of the wellsite, where it has continued to be retained for subsequent wellsite restoration. The subsoil was then levelled, removing subsoil from the higher areas of the site and spreading them over the lower sections of the site thus creating a level plateau, upon which the site can be constructed. The site was then covered with a layer of low permeability clay, which was the technique at the time to provide an environmental barrier between the wellsite activities and the underlying subsoils. Above the environmental clay barrier, a layer of geotextile was laid to provide a physical separation membrane between the clay and site stone, which overlaid the site. A drainage channel was constructed along the perimeter of the wellsite, which captures surface run-off water from the adjacent land and diverts it around the perimeter of the site to a discharge point in to Sugar Hill Drain.

⁸ This extension would cover work undertaken under this consent later than 2006. For example, the re-entry and sidetrack of KM-1 (to form KM-7) consented in 2011 - reserved by conditions in 2006 consent C3/06/00625/CPO/C.

Production equipment located on the site is individually banded and connected to an interceptor via drainage pipes beneath the surface, which discharges water to Sugar Hill Drain.

- 2.36 Within the centre of the wellsite a drilling cellar was constructed, using reinforced concrete base and concrete walls, from which the KM-1 exploratory borehole was drilled in 1985. The well was successful in proving commercial quantities of natural gas in place and was subsequently completed as a Namurian gas producer. In 2012, the well was re-entered and sidetracked (KM-7) but was unsuccessful in producing gas. The well was suspended pending further evaluation of the Kirby Misperton Gas Field.
- 2.37 The KM-3 well was drilled in 1987. This was developed as a re-injection well for disposal of water from other wells in the Vale of Pickering.
- 2.38 The wells were constructed to prevent vertical migration of fluids between different hydrostratigraphic units; with each casing string cemented and pressure tested on completion. These casing strings provide a permanent physical barrier between shallow, groundwater used for potable and other supplies, and highly saline formation water and hydrocarbons that are present at >1000m depth.

Extension (2013)

- 2.39 Planning permission for the construction of an extension to the KM-1 wellsite and to drill and test up to two gas production boreholes followed by subsequent gas production was granted in January 2013. The extension was built and first well drilled in 2013. The planning application provided full details of the geological justification for the wellsite location and was accompanied by independent specialist consultant reports, which assessed the impact of the development upon ecology and archaeology. In addition, the original site selection process considered existing constraints, including proximity to sensitive buildings, environmental and heritage designations. The granting of planning permission showed that Third Energy had demonstrated the site presented the best available option.
- 2.40 Due to the level difference between the existing wellsite and the proposed extension wellsite, a gabion retaining wall and access ramp was constructed to minimise the volume of subsoil excavated. The topsoil was placed in a storage bund along the northern boundary of the wellsite. Subsoil was laid across the lower areas of the site to create a level surface.
- 2.41 Once the surface of the site was level and a perimeter ditch (for environmental containment) excavated, an impermeable membrane, constructed from 1mm fully welded HDPE, was installed across the entire site area and perimeter ditch. The impermeable membrane is protected above and below from a layer of non-woven needle punched geotextile, which protects the impermeable membrane from being damaged by subsequent operations. Inspections and testing of the impermeable membrane were performed during installation to confirm environmental integrity.
- 2.42 Within the centre of the site a concrete cellar was constructed, and a large diameter steel casing installed below the base of cellar to provide stability and protection of the soil during the initial stages of drilling. The impermeable membrane was integrated into the cellar walls to ensure that the integrity of the site is maintained. The cellar provides an additional containment and houses the wellhead. An integrity test was carried out following construction to confirm the cellar provided a sealed containment.

- 2.43 Geogrid was then laid across the site area and overlaid by a layer of Type 1 stone to provide a suitable working surface.
- 2.44 A surface conductor casing was drilled and set immediately following site construction and in advance of the main drilling operation. A larger oilfield drilling rig was then mobilised to site to drill the remaining sections of the borehole. Following the drilling of each hole section, steel casing was then installed, cemented into position and pressure tested to confirm pressure integrity.
- 2.45 On completion of the drilling operation the well was suspended pending analysis of the data gathered during the drilling operation.
- 2.46 The KM-8 well is currently prepared for the proposed hydraulic fracturing operation. Groundwater monitoring boreholes were installed in December 2015.

Site Water Management

- 2.47 Both halves of the KM-A wellsite have independent surface water drainage systems. Both have an impermeable (HDPE) or low permeability (clay) barrier separating site activities from the underlying subsoils.
- 2.48 The original Kirby Misperton 1 (KM-1) wellsite is lined with a low permeability clay liner above graded subsoil. A 300mm thick layer of crushed stone is emplaced above the clay liner to provide a hardstanding area. A perimeter filter drainage channel constructed along the perimeter of the wellsite, which captures surface run-off water from the adjacent land and diverts it around the perimeter of the site to a discharged point in to Sugar Hill Drain. This perimeter filter drain was installed to prevent surface water runoff entering and leaving the wellsite.
- 2.49 The clay liner at original KM-1 wellsite prevents surface water collecting at the wellsite infiltrating to ground. Several drainage pipes are present beneath the base of the original KM-1 wellsite to collect surface water runoff from gulleys located at positions near key infrastructure, e.g. vehicle hardstanding area. The drainage channels collect water from operational areas of the well pad and discharge water to the Sugar Hill Drain on the western boundary via an interceptor. This is checked daily for oil and grease.
- 2.50 The 2013 extension is underlain by a high density polyethylene (HDPE) membrane, incorporating the perimeter ditch and bunds. The membrane prevents surface water collecting at the wellsite infiltrating to ground. A covered perimeter ditch is installed around the perimeter of the well pad, to collect surface water runoff from the wellsite. Water collecting in the perimeter ditch at the 2013 extension discharges into the perimeter drains at the original KM-1 wellsite, where the interceptor is located.
- 2.51 Any discharge to the adjacent land drain is rain water only. The original KM-1 site has an inspection interceptor c/w isolation valve which remains closed during site project works and only opened once its contents are confirmed free from contamination.
- 2.52 The drainage system of the entire KM-A wellsite has been developed to allow discharge to the land drain to occur as required, depending on storage capacity within the perimeter filter drains and the hardstanding areas of the wellsite, and rainfall events. The earth banks/bunds and filter drains prevent overland flow to or from the wellsite.

- 2.53 During periods of activity, such as drilling or intervention activities, water collecting at the 2013 extension will be contained using the perimeter ditch and removed from wellsite by tanker to an accredited waste disposal facility. It would not be discharged to the original KM-1 wellsite perimeter filter drains. Areas of the original KM-1 wellsite containing plant, equipment and materials would be bunded and any runoff contained and removed from wellsite by tanker to an accredited waste disposal facility. Water from these areas would not be discharged to the original KM-1 wellsite perimeter drains.
- 2.54 When standard “maintenance” operations are taking place, areas of the original KM-1 and extension wellsite will not be subject to any special measures, and water management for these areas will continue as normal.

Welfare Provision and Utilities

- 2.55 There is no permanent welfare provision (toilets and washing facilities or permanent mains water or sewage connection) as the site is primarily unmanned. During extended maintenance periods or during drilling/workover operations, temporary welfare facilities are mobilised to the wellsite, each with its own sewage tank located underneath the welfare unit. Sewage is collected periodically throughout the period that the wellsite is manned and removed by licenced waste carrier to an Environment Agency permitted waste water treatment works for subsequent treatment and/or disposal.
- 2.56 During operations on the site, drinking water would be dispensed from drinking water fountains and water for washing stored in water tanks supplied within the temporary accommodation units
- 2.57 The nearest electricity supply to the KM-A wellsite is located immediately adjacent to the northern perimeter of the wellsite. A 50kVA transformer is located on an electricity pole immediately adjacent to the north-eastern corner of the wellsite, which is connected to KMA wellsite control room via an underground cable. This is sufficient to provide power to the existing production equipment and associated lighting. During operations on site additional diesel generators would be provided.
- 2.58 The nearest mains water and domestic gas supply to the KM-A wellsite is located on Habton Road, 650 m north-east of the wellsite, in the village of Kirby Misperton.
- 2.59 Natural gas and liquid pipelines are present in the site to receive gas and produced water from the satellite wellsites and KGS, and to transport gas to KGS. The natural gas pipelines are constructed of a steel 152mm (6”) nominal bore and the liquid pipelines are constructed of a steel 76mm (3”) nominal bore.
- 2.60 An underground fibre optic cable, installed alongside the natural gas pipeline and liquids line connecting the KM-A wellsite to KGS provides a telecommunications link between the wellsite and the control room at KGS.

Equipment on Site

- 2.61 The long-term equipment listed below is present on site. In January 2018, the site also has temporary equipment for operations associated with hydraulic fracturing proposed (and consented) at KM-8. However, the hydraulic fracturing elements do not form part of the proposed development.

- KM-7 – this is a suspended well. It is capped with a wellhead valve assembly in the drilling cellar below ground level;
- KM-3 – this is an existing re-injection well. It is capped with a wellhead valve assembly in the drilling cellar below ground level, and a re-injection tree above ground level. It is surrounded with a metal cage. Process pipework from the separators on site are also present;
- KM-8 – this is currently a non-completed well, awaiting hydraulic fracturing in early 2018. (As part of the hydraulic fracturing consent, once completed, a wellhead assembly and pipework transporting gas to KGS will be put in place);
- PK wellsite gas/liquid separator – this receives the co-mingled gas and fluid from PK and separates them;
- KM-7 gas/liquid separator – this separated gas and produced water from the original KM-1 well when in production. Now for use as KM-7 should it be brought on to production;
- KM-3 separator filters – this has the capacity to filter produced water prior to re-injection into KM-3, having received water from the satellite wellsites and the PK separator, though no filters are currently installed as there is no requirement for produced water filtration;
- KM-3 gas/liquid separator – this separates any remaining gas from the produced water and hydrocarbon condensates prior to re-injection into KM-3;
- Pressure relief valve on KM-3 separator;
- Pressure relief valve on KM-1/7 separator;
- Pig launcher to MAR wellsite, with pressure relief valve – this sends gas onwards to MAR and then to KGS;
- Pig receiver from KM-B, MN-B (and MN-A) and PK with pressure relief valves – this receives gas from the satellite wellsites;
- Glycol tank, glycol pump, corrosion inhibitor tanks and corrosion pump located on a skid – pressure relief valves are present and open to atmosphere vents are installed on the glycol tank and corrosion tank;
- Control room – this provides an electronic link to KGS, to monitor progress and operations at the wellsite. Open to atmosphere vents are installed on the hydraulic control unit in the control room;
- Groundwater filter process pit and drainage – the drainage system carries runoff from the site through the groundwater filter to Sugar Hill Drain;
- Choke valve – this cuts off the produced water flow to KM-3 if necessary; and
- Hardstanding – this allows vehicles to access the tanks and separators and for any skips/ waste storage etc.

- 2.62 Upgrade of equipment and infrastructure on site, such as containment and storage tanks will be undertaken as part of routine management of the site in line with the existing consent and relevant environmental permitting. This would continue in the proposed extended period, so it can be assumed that they would be relied on to continue to function as at present.

2.5 Consented Works on KM-A

Current routine activity on site - Retention of Wells and Monitoring of Groundwater

- 2.63 Routine consented operations at KM-A involve the receipt of gas and liquids onto the site from the wellsites⁹ and KGS, separation of gas and produced water, and re-injection of produced water and hydrocarbon condensates into KM-3 as permitted (following filtration). Gas is transported by pipeline to KGS.
- 2.64 The site is not permanently manned. However, it is visited routinely to ensure it is in good order, and the site surface, fencing, tanks and valves are checked for integrity. This involves a maximum of four to six light vehicle movements daily (generally staff cars/ vans). The site is not routinely lit at night, other than for security during any maintenance operations.
- 2.65 Monitoring of groundwater boreholes involves minimal work and no additional equipment is required other than portable pumps. A schedule of monitoring (Emissions Monitoring Plan – EMP) is agreed with the Environment Agency, which includes the five onsite boreholes and six offsite boreholes and three surface water features. Further monitoring was agreed as part of the requirements for the KM-8 hydraulic fracturing operations.

Consented, occasional activity on site - Workovers of KM-1/7 and KM-3

- 2.66 Workover operations consented (subject to additional information being provided to NYCC) include well maintenance, including wellbore treatments, tubing replacement and sidetrack drilling. This involves bringing a workover rig to the site, removing any existing completion and fluid in the well (for example, suspension fluid or brine) and re-entering the well for works, often circulating fluid into the well for tests or to clean the well. Equipment such as pumps can also be removed for maintenance.
- 2.67 Any equipment removed from the well would either be repaired on-site and replaced in the well, or cleaned (on or off-site) and removed from the site for repair, reuse or disposal, subject to consideration relating to odour. Washings from cleaning would be captured and removed from site. All wastes would be removed from the site by a licensed contractor for treatment, offsite recycling and/or disposal at an Environment Agency permitted waste treatment facility in compliance with the relevant environmental permit.
- 2.68 During maintenance/ workovers (and any future drilling/ well test as described in the following section) there may be more vehicles - including staff vehicles and light goods vehicles (LGVs) bringing in supplies during daylight hours. Heavy Goods Vehicles (HGVs) are occasionally needed if equipment requires to be taken offsite for maintenance. On average, there would be no more than twenty vehicle movements to and from the site daily – largely staff cars, with no

⁹ excluding MAR, which transports gas directly to KGS.

more than two or three LGVs (four to six movements daily) and occasional HGVs for maintenance.

Consented but non-current activity on site - Future Drilling, Testing and Gas Production

2.69 The consent for future drilling (as outlined in NYCC consent C3/12/00989/CPO granted in January 2013) is valid until May 2018. It involves several stages:

- Drilling;
- Well Test;
- Connection to existing production equipment
- Production of gas into the existing infrastructure

2.70 This section sets out these works which could be carried out in accordance with the existing consent.

Drilling

2.71 Prior to commencement of drilling, the applicant will be required to obtain approval from the Oil and Gas Authority and notify the HSE of the proposed drilling operations, 21 days prior to drilling commencing. A conductor will have been set prior to mobilisation of the main rig.

2.72 A drilling rig and associated equipment would be mobilised to site over approximately two weeks (consent is for a standard oilfield rig of up to 49m). Drilling is anticipated to last 6-12 weeks, and would target conventional formations, followed by a week of demobilisation.

2.73 Standard safety measures will be used including correct use of drilling muds to maintain the hydrostatic weight of the column to exceed any underground pressures, fitting of the rig with “Blow Out Preventers” to act as secondary well control measures if an unexpected increase in pressure occurs, and installing steel casing cemented into place to prevent the collapse of the borehole and the ingress of groundwater under pressure. The casing would be pressure tested.

2.74 During the drilling of the well, the progress of the operation would be monitored constantly and a range of analysis carried out. Well logging would be carried out to obtain information both on the borehole itself (including its precise depth and direction at any time) and on the rock strata through which it passes.

2.75 Upon completion of the drilling and preliminary testing, the drilling rig would be demobilised.

2.76 It is anticipated that initial sections of the well will be drilled with fresh water, and then a bentonite polymer. The final mud mix would be dependent on the approved well plan (subject to the existing planning conditions relating to oil based muds).

2.77 Drilling would involve import of water to make up drilling fluids while drilling the well and for any emergency contingencies. Diesel would also be required for the rig and generators which will be supplied by road tanker. This will be stored onsite in bunded storage tanks, in accordance with Environment Agency guidelines.

Well Test

- 2.78 Following removal of the rig a well test would be undertaken to test the flow of gas. Testing may be performed to allow certain information on the reservoir and well characteristics to be gathered.
- 2.79 The planning consent allows for gas to be released to atmosphere during the temporary test period¹⁰; however, this would not now be carried out, and any well test would transport the test gas to KGS following separation from the produced water.
- 2.80 This would require installation of pipework from the production tree into the tanks which are already in place on site and installation of ground level concrete supports to raise the pipework and chokes above ground level. In addition, there would be some basic monitoring and control systems in place to allow the Applicant to monitor the operations and gather data.
- 2.81 If the well is not commercially viable, it would be suspended pending further analysis of the data acquired during the drilling and testing phases and may be subject to further well intervention work.

Production of gas into the existing infrastructure

- 2.82 Following full commissioning, gas would flow to surface from the production formation (KAF) under pressure through the annular space between the production tube and the production liner. Water would be removed from the production and transferred to the KM-3 well via pipeline for re-injection. Gas would be flowed via the existing pipeline to KGS.
- 2.83 There may be a requirement for nitrogen to encourage lift from the well after a slow-down in production for maintenance. Nitrogen pumped into the well would be piped back out with gas (and produced water) for separation at KM-A.

Consented but non-current activity on site - Abandonment and Restoration

- 2.84 Once the wells at KM-A reach the end of production, or for any other commercial reason, they would be abandoned and the wellsite restored to its pre-development condition. This would consist of three principle phases, well abandonment (decommissioning), wellsite restoration and aftercare and monitoring.
- 2.85 During well abandonment, all production equipment would be purged clean and dismantled for offsite removal. All other equipment, which may include control lines, electric cables, monitoring equipment, pipe supports and storage containment would be dismantled for offsite removal. All distinct permeable zones penetrated by the well would be isolated from each other and from surface by a minimum of one permanent barrier (or two if any permeable zone is hydrocarbon-bearing or over-pressured and water-bearing). The operation involves the setting of cement barriers, extended above and below the permeable zone(s). Rubber cement retainers would be positioned within the internal casing string immediately below the required cement depth, which prevents the cement from moving or slumping during setting.
- 2.86 Once the borehole was abandoned and the equipment used to undertake the operation removed from the wellsite, the casing within the drilling cellar would be cut off at a depth of approximately 3m below the expected ground level post restoration. A steel plate would be

¹⁰ Note that this does not apply to the KM-8 well (hydraulic fracturing operations) but the consented conventional well.

- welded over the top of the casing to prevent soil from entering the borehole. The drilling cellar would be broken up, ordinarily leaving the lowest section in situ.
- 2.87 Surface aggregates would be inspected prior to removal. Areas where surface contamination was identified would be removed for subsequent offsite treatment and reuse. The remaining surface aggregate would carefully be removed for subsequent offsite reuse.
- 2.88 The clay and HDPE liners would be removed to expose subsoils, which would be inspected and soil samples tested for localised contamination. In this case, the contaminated area would be excavated for subsequent offsite treatment and/or disposal at an Environment Agency permitted waste facility. The subsoil would then be deep tine cultivated in strips, for restoration.
- 2.89 Condition of the stockpiled topsoils (bunds) would be assessed for any treatment required to improve soil condition or kill weeds. Application of such treatments, which, for example, may include nitrogen fertiliser application, would be applied during soil replacement. Topsoil would be back-tipped from the stockpile onto the subsoil to a uniform depth, and levelled. All topsoil areas within the site, would be ploughed and cultivated and large stones or other material removed.
- 2.90 Post-abandonment monitoring of the wellsite would be carried out in accordance with UKOOG (United Kingdom Onshore Oil and Gas Group) guidance on post decommissioning environmental monitoring (including methane monitoring and water quality monitoring). The purpose of the monitoring will be to ensure and demonstrate to the satisfaction of the Regulators that the decommissioning of the borehole(s) has been successfully completed and that the site has been restored to its pre-existing condition.

2.6 Proposed Changes

- 2.91 Other than the extension of the time proposed for operation of KM-A to 2035, there are no proposed changes to the footprint of the existing consent or operations at the KM-A wellsite as currently consented. Any future changes would be subject to relevant planning and environmental permitting controls.

2.7 Future Baseline Environment

- 2.92 For the purposes of this screening report and the planning application, the future baseline environment will include the retained infrastructure, operating as consented (and permitted).
- 2.93 The Proposed Development consists of the extension of the existing development until 2035, and the submission will therefore include a baseline including this pre-existing development. The assessment addresses the “difference” between the impact of the existing development and its retention until 2035.
- 2.94 It is arguable that the baseline environment for the assessments should assume that a decommissioned site is in place, as the “alternative” starting point. This exercise, however, would logically draw upon the pre-existing impacts in any assessment and would inevitably bring the process back to the baseline assumption made in this screening submission – that the impacts of the development will be assessed as a continuation of the pre-existing impacts.

3 Screening Assessment

3.1 Introduction

3.1 The following should be considered in determining whether the Proposed Development constitutes EIA development:

- If the Proposed Development is of a type listed in Schedule 1;
- If not, whether:
 - it is listed in Schedule 2; and
 - any part of it is located within a sensitive area; or
 - it meets any of the relevant thresholds and criteria set out in Schedule 2; and / or
 - it would be likely to have significant effects on the environment.

3.2 These points are explored further in this section with reference to the EIA Regulations and supporting PPG.

3.2 Schedule 1 Projects

3.3 EIA is mandatory for projects listed in Schedule 1 of the EIA Regulations. Schedule 1 developments are large scale projects for which significant effects would be expected.

3.4 In respect of the Proposed Development, Schedule 1 (para 14), applies for the following projects:

“Extraction of petroleum and natural gas for commercial purposes where the amount extracted exceeds 500 tonnes per day in the case of petroleum and 500,000 cubic metres per day in the case of gas”.

3.5 KGS is consented for up to 60MW, and would require as a maximum up to 13.5 million standard cubic feet of gas per day (the current turbine of 41.5 MW uses approximately 9 million standard cubic feet of gas per day). This would equate to approximately 382,000 m³ of gas per day to run the turbine at full capacity. There is no intention to exceed this 60MW consented capacity under the current planning applications. Therefore there is no potential for the Schedule 1 threshold to be met either by KM-A alone or in cumulation with other wellsites in the field.

3.3 Schedule 2 Projects

3.6 The development proposed is of a type listed in Schedule 2 development. Whether such development is EIA development depends on the location of the development (i.e. if it is within a sensitive area) and/or whether it meets any of the relevant thresholds or criteria in Column 2.

3.7 Sensitive Areas are defined in the EIA Regulations (Schedule 2(4)) as:

- Sites of Special Scientific Interest (SSSI), European Sites and Ramsar sites;
- National Parks, the Broads, and Areas of Outstanding Natural Beauty; and

- World Heritage Sites and Scheduled Monuments.

3.8 In certain cases, local designations which are not included in the definition of sensitive areas, but which are nonetheless environmentally sensitive, may also be relevant in determining whether an assessment is required. Furthermore, in considering the sensitivity of a particular location, regard should also be had to whether any national or internationally agreed environmental standards (e.g. air quality) are already being approached or exceeded.

3.9 KM-A is not located in a sensitive area, as it is not located in any of the designated areas listed above or in any locally designated areas.

3.10 Considering the relevant thresholds or criteria, KM-A falls under Schedule 2 (2(e)) of the EIA Regulations as follows:

Surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale (where) the area of the development exceeds 0.5 hectare.

3.11 In addition, Schedule 2 13(b) states:

Any change to or extension of development of a description listed in paragraphs 1 to 12 of column 1 of this table, where that development is already authorised, executed or in the process of being executed.

(when) Either—

(i) The development as changed or extended may have significant adverse effects on the environment; or

(ii) in relation to development of a description mentioned in column 1 of this table, the thresholds and criteria in the corresponding part of column 2 of this table applied to the change or extension are met or exceeded.

3.12 Additional drilling (as already consented) would fall under Schedule 2 (2(e)) of the EIA Regulations:

(d) Deep drillings, in particular—

(i) geothermal drilling;

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

(iii) drilling for water supplies;

with the exception of drillings for investigating the stability of the soil.

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

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

3.13 As the thresholds in Schedule 2 are met, the test for whether the Proposed Development is EIA development is whether the likely effects on the environment are significant.

3.14 There is therefore a requirement to assess if the extension of the lifetime of the wellsite (both by itself, and in cumulation with other development, including other wellsites) may have significant adverse effects on the environment, having regard for any mitigation that may be included to prevent such effects. Indicative screening guidance suggests that EIA is more likely to be required where a site is over 10 ha, or where production is expected to be more

than 100,000 tonnes of petroleum per year (this would equate to approximately 290,000m³ gas per day), though would depend on the scale of the development, emissions to air, discharges to water, the risk of accident and the arrangements for transporting the fuel.

- 3.15 Therefore, the extension would fall under Schedule 2, and the RA must consider the selection criteria set out at Schedule 3 of the EIA Regulations and the information outlined in Regulation 6.

3.4 Schedule 3

- 3.16 Schedule 3 of the EIA Regulations set out selection criteria which relate to specific matters, including: the characteristics of the development; the location of the development; and the types and characteristics of the potential impact. These factors should be taken into account as part of the screening process and are set out below.

Characteristics of development

- The size and design of the whole development;
- Cumulation with other existing and approved developments;
- The use of natural resources, in particular land, soil, water and biodiversity;
- The production of waste;
- Pollution and nuisances;
- The risk of major accidents and disasters that are relevant to the development, including those caused by climate change, in accordance with scientific knowledge; and
- The risks to human health (for example, due to water contamination or air pollution).

Location of development

- The environmental sensitivity of geographical areas likely to be affected by the development must be considered, having regard in particular to—
 - The existing and approved land use;
 - The relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;
 - The absorption capacity of the natural environment, paying particular attention to the following areas—
 - Wetlands, riparian areas and river mouths;
 - Coastal zones and the marine environment;
 - Mountain and forest areas;
 - Nature reserves and parks;
 - Areas classified or protected under domestic legislation or legislation of other EEA states;

- European sites (as defined in regulation 8(1) of the Conservation of Habitats and Species Regulations 2010);
- Areas in which there has already been a failure to meet environmental quality standards that are set out in European Union legislation and are relevant to the development, or in which it is thought that there is such a failure;
- Densely-populated areas; and
- Landscapes and sites of historical, cultural or archaeological significance.

Types and characteristics of the potential Impact

- The likely significant effect of the development on the environment must be considered in relation to the criteria above, with regard to the impact of the development on:
 - Population and human health;
 - Biodiversity (for example, fauna and flora), with particular attention to habitats and species protected under the Habitats Directive or the Wild Birds Directive;
 - Land (for example, land take), soil (for example, organic matter, erosion, compaction, sealing), water (for example, hydromorphological changes, quantity and quality), air and climate (for example, greenhouse gas emissions, impacts relevant to adaptation);
 - Material assets, cultural heritage (including architectural and archaeological aspect) and the landscape; and
 - The interaction between the factors above
- The assessment must take into account:
 - The magnitude and spatial extent of the impact (for example, geographical area and size of the population likely to be affected);
 - The nature of the impact;
 - The transboundary nature of the impact;
 - The intensity and complexity of the impact;
 - The probability of the impact;
 - The expected onset, duration, frequency and reversibility of the impact;
 - The cumulation of the impact with the impact of other existing and approved developments; and
 - The possibility of effectively reducing the impact.

3.5 Consideration of Cumulative Effects

- 3.17 The EIA Regulations require consideration of a proposed development cumulatively with other development. Guidance contained in the PPG regarding EIA Screening includes the topic ‘When should Cumulative Effects be Assessed?’ This states that:

“each application (or request for a screening opinion) should be considered on its own merits. There are occasions where other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development. The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development.”

- 3.18 As the Proposed Development is an existing facility, it forms part of the existing baseline environment of the area. It will therefore have been considered as a baseline feature against which other planning consents were assessed (albeit potentially with the assumption made that the baseline would alter in 2018 at the end of life of the infrastructure – as discussed in Section 2.7 of this report). This assessment would either have been made explicitly for EIA development, or implicitly, in that each development must be acceptable within the environment in which it is located.
- 3.19 The cumulative assessment for the Proposed Development will seek to assess the impact of the extension of the existing development until 2035 against “committed” development. This is in the context of all existing development within the vicinity of the project which would again be added to the baseline conditions leaving only the extension of the life of the (other) existing conventional gas operations, unimplemented approved development, and reasonably foreseeable other development to be assessed cumulatively.

Extension of life of existing conventional gas operations

- 3.20 These features include the other satellite wellsites and pipeline network (which will undergo a similar screening process to NYCC to extend their lifetime from May 2018 to 2035), and KGS, and the overhead line transporting electricity from KGS. These are consented and existing (baseline) features in the landscape and provide the existing physical context for determination of the potential impact of the planning application. Therefore, their cumulative effect to 2035 alongside the Proposed Development will be addressed in the planning submission, as part of the environmental report.
- 3.21 The determination of these renewal applications must be considered on their merits, and as the operational proposals remain unchanged from the existing conditions (other than the extended operational period proposed) the cumulative impact must be assessed to the proposed extension date of 2035. However, it is noted that these sites have been “cumulative” features in the environment since their construction and no significant cumulative effects are therefore likely given mitigation in place (such as outlined in Appendix 2 of this report).

Unimplemented, approved development

- 3.22 There are additional consents in place (but not yet constructed) for further infrastructure within the region, and in some cases within the red line boundary of the Proposed Development (and other proposed applications). These include:

- Construction of a pipeline from the Ebberston Moor South (EM-S) wellsite to KGS to support production of gas from the Ebberston Moor field which is not currently linked to KGS. This was consented by North Yorkshire County Council (C3/14/00970/CPO/ NY/2014/0275/ENV) where KGS is located, and also North York Moors National Park Authority (NYM/2014/0587/EIA) where EM-S is located. The consent was obtained by a joint venture between Moorland Energy Ltd (who owned and operated the EM-S wellsite at the time) and Third Energy. Works on KGS include constructing a gas reception facility in the south-west of the site to enable production. This is unlikely to affect the current planning application to extend the site's lifetime until 2035, given the scale of works proposed, but will be addressed in the environmental report.
- Construction of a pipeline from the Ebberston Moor A (EM-A) wellsite to KGS (NY/2013/0593/EIA in the North York Moors National Park Authority and C3/13/01195/CPO in North Yorkshire). This was for gas production from the EM-A wellsite, provision of a water storage tank, gas fired heater, pipeline pig trap area, fire water tank (50 cubic metres) and gas fuelled electrical generator, water separator building, storage tanks and construction of a 15.3km steel underground pipeline to KGS. This consent lapsed in December 2016, and a new application to instead direct the pipeline to EM-S, as part of the overall development above (i.e. pipeline from EM-S to KGS) is in preparation. This will assess cumulative impacts at the time.
- Consent to hydraulically fracture and produce gas from the KM-8 well on KM-A. Although a planning consent on the same wellsite as one of the conventional operations, it forms a separate permission, and must therefore be considered cumulatively. The majority of work is anticipated to be complete by the start of the Proposed Development, though gas test and production will continue, potentially up to 2026. This development will be addressed as a cumulative project with the extension of the conventional gas operations at KM-A, within the environmental report. The planning application for KM-8 took existing operations at KM-A into account in its assessment of environmental effects, so no significant additional cumulative impacts are foreseen.

3.23 A planning consent for a gas processing plant in Hurrell Lane, Thornton-le-Dale in the North York Moors National Park was upheld at appeal in June 2012 (C3/10/00529/CPO/ NY/2010/0159/ENV – North Yorkshire County Council and NYM/2010/0262 in North York Moors National Park). This involved gas production from the EM-S wellsite, alterations and the provision of new facilities at EM-S; the construction of two underground gas pipelines from EM-S to a proposed gas processing facility to be located off Hurrell Lane, Thornton Le Dale; the provision of a new vehicular access road between the A170 and the proposed gas processing facility; and the construction of a gas processing plant to include buildings, plant, and other associated works and infrastructure, and the construction of an export pipeline between Hurrell Lane to a proposed National Transmission System - Above Ground Installation to be located south of New Ings Drain, off Hurrell Lane. Condition 1 required development to start within five years of the date of consent, so it lapsed in June 2017. As the purpose of this consent (a use of gas from EM-S) has now been superseded by the

consent to join the wellsite to KGS, there is understood to be no intention to re-visit this application from the current owners of the EM-S wellsite; INEOS 120 Exploration Limited.

Reasonably foreseeable other development

- 3.24 Given the existing presence of Third Energy’s infrastructure in the baseline environment, it is reasonable to assume that “committed” development has taken its presence into account. Continued operation of the infrastructure will therefore have limited additional cumulative impact on the operation of such “committed” development – even if the assumption had been made that it would cease operating in 2018.
- 3.25 Although a “formal” EIA cumulative assessment may not have been made, it is reasonable to assume that the baseline environment (including Third Energy infrastructure) was appropriately characterised, and that therefore effects would continue for the proposed extended lifetime until 2035.
- 3.26 It is therefore considered that the proposed retention of the infrastructure and its continuing operation until 2035 would not create any additional cumulative effects with other reasonably foreseeable development as there would be no environmental impact that is not already in place (as part of the baseline), or having been assessed as being acceptable. Nevertheless, such developments will be scoped with the planning authority and addressed in the assessment.
- 3.27 EIA screening for any additional future sites would be required to take account of potential impacts, having regard to the prevailing environmental baseline conditions and developments that have previously been approved, or the applicant has in the planning stage, at the point in time when the exercise is carried out.

3.6 Planning Practice Guidance

3.28 Paragraphs 057 and 058 of PPG provide guidance to help determine whether significant effects are likely. In general, the more environmentally sensitive the location, the lower the threshold will be at which significant effects are likely. Table 1 sets out indicative criteria and thresholds identified in the PPG along with some of the issues that are most likely to need to be considered in determining the whether a development is likely to be EIA development.

Table 1: Planning Practice Guidance Indicative Screening Criteria			
Development Type	Schedule 2 Criteria	Indicative criteria and thresholds	Key issues to consider
(d) Deep drilling, in particular: (i) geothermal drilling; (ii) drilling for the storage of nuclear waste material; (iii) drilling for water supplies; with the exception of drilling for investigating the stability of the soil.	(i) In relation to any type of drilling, the area of the works exceeds 1 hectare;	Drilling operations involving development of a surface site of more than five hectares (ha).	Regard should be had to the likely wider impacts on surrounding hydrology and ecology. KM-A covers approximately 1.63ha. There are no sensitive areas in the vicinity, and there will be no physical extension of the existing wellsite or

			consented/ permitted operations.
(e) Surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale.	The area of the development exceeds 0.5 hectare.	Development of a site of 10 ha or more or where production is expected to be more than 100,000 tonnes of petroleum per year ¹¹	Scale of development, emissions to air, discharges to water, the risk of accident and the arrangements for transporting the fuel. KM-A covers approximately 1.63ha. Over the field there is no intention to produce more than 382,000 m ³ of gas per day to run the KGS turbine at full capacity. The site is subject to an environmental permit and there will be no physical extension of the existing wellsite or consented/ permitted operations.
13(b) Any change to or extension of development of a description listed in paragraphs 1 to 12 of column 1 of this table, where that development is already authorised, executed or in the process of being executed. (when)	(i) The development as changed or extended may have significant adverse effects on the environment; or (ii) in relation to development of a description mentioned in column 1 of this table, the thresholds and criteria in the corresponding part of column 2 of this table applied to the change or extension are met or exceeded.	(none provided)	The only extension is related to time. There will be no other changes to operations proposed and consented. The site and operations will be undertaken according to the site's environmental permit and planning conditions.

3.29 It is important to note that the Environment Agency currently permits operations at KM-A (under the Environmental Permitting (England and Wales) Regulations 2016), and is determining an application for a variation to this Permit. Also, the Health and Safety Executive (HSE) permits pipeline operations and requires the operator (Third Energy) to carry out routine maintenance under the Pipelines Safety Regulations 1996. The HSE would require to be content that operation of the pipelines could continue safely.

3.30 The existing development and consenting/ permitting regime form a significant part of the existing relevant built environment and as such the extent of any potential “significant adverse effects” will be restricted to land-use planning effects, such as noise, traffic and landscape effects related to the extension of operations until 2035. As addressed in Section 2.7, the future baseline environment will be influenced by the fact that the current baseline environment contains the infrastructure.

¹¹ 100,000 tonnes per year is equivalent to approx. 274 tonnes per day – approximately 274,000m³ per day.

- 3.31 Given that the operational effects have to date been adequately controlled since KM-A was developed (by means of planning conditions attached to the planning consent, and various management plans in place), there are not anticipated to be any significant environmental effects arising from retaining the existing, permitted infrastructure and it continuing to be operated until 2035.

3.7 Review of Screening Criteria

- 3.32 Table 2 sets out a review of all the above criteria and requirements and specifically addresses the Proposed Development at the site.

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
1. CHARACTERISTICS OF THE DEVELOPMENT	
(a) Size and design of the development	
Will the development as a whole be out of scale with the existing environment?	The development is part of the existing environment. The existing site at KM-A covers approximately 1.63 ha including access. The original KM-1 wellsite is well screened with mature vegetation, and there is immature planting on the northern and eastern boundaries (developed for the 2013 extension). Very limited visibility of the site is gained from nearby receptors due to the site’s location and screening, though the site is currently visible from the nearby footpath.
Will the design of the development as a whole fit within the existing environment?	The development is well integrated into the existing environment, due to existing and maturing screening by vegetation and bunding, though utilitarian in nature. The design incorporates measures such as fencing and security lighting that are necessary to satisfy health and safety requirements
Will it lead to further consequential development or works?	No – although there may be future applications for development within the grounds of KM-A, the wellsite is a discrete development, though dependent on other aspects of the surrounding network (and necessary for their operation) – namely the other satellite wellsites, KGS (which is connected to the re-injection well KM-3) and pipelines. Any wells other than the single well consented but not yet drilled (which is consented for conventional gas operations only) would be subject to further planning and environmental permitting requirements.
(b) Cumulation with other existing development and/or approved development	
Are there potential cumulative impacts with other existing development or development not yet begun but for which planning permission exists?	KM-A has been part of the environment since its construction (and extension in 2013). Planning applications for similar development (for example the application for KM-8 hydraulic fracturing operations) made cumulative assessments based on its presence within the environmental baseline. Any applications for similar development would require to take its presence into account.
Should the application for this development be regarded as an integral part of a more substantial project? If so, can related developments which are subject to separate applications proceed independently?	The network of KGS, OHL, pipelines and the satellite wellsites (including KM-A, covered in this screening report) are components of a project to produce power from the gas sourced from within the Vale of Pickering. The satellite wellsites and operations to produce gas from them are properly consented by the Mineral Planning Authority. Although the other components of the project are dependent on the existence of the satellite wellsites, their location or number is not critical. However, should KGS (and associated OHL and pipeline network) not exist, justification for the satellite wellsites, and another use of gas from them, would need to be made. Should KM-A (and specifically KM-3) not exist, an alternative method for disposal of produced water and hydrocarbon condensates would be required.

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
(c) Use of natural resources, in particular, land, soil, water and biodiversity	
Will construction or operation of the development use natural resources such as land, water, material or energy, especially any resources which are non-renewable or in short supply?	Although already constructed, the continued operation of KM-A will extract natural gas. There would be no additional landtake required. Workovers and the approved but unimplemented additional well would require water and energy (diesel) to drill. In addition, energy the well produces (in the form of gas) would be used to fuel the turbine at KGS, though this would generate electricity.
(d) Production of waste	
Will the development produce wastes during construction or operation or decommissioning?	<p>KM-A is an existing wellsite (though wells on it are not currently producing gas). Waste from routine consented operations includes:</p> <ul style="list-style-type: none"> ○ Wastes from cleaning tanks including glycol and corrosion inhibitor; ○ Minimal pipe scale; ○ Surface run-off water; and ○ Incidental/ staff waste during site visits (e.g. paper and cardboard, food waste) <p>In addition, the site receives and handles the following wastes:</p> <ul style="list-style-type: none"> ○ Produced water (excluding gas) from PK (once the gas has been separated), KM-B, and MAR Wellsites (and potentially other wellsites in the future should gas production restart), with trace amounts of glycol and corrosion inhibitor from the pipeline to KM-A – for re-injection into KM-3; and ○ Gas condensate and residual produced water – this arises from gas conditioning at KGS for re-injection into KM-3. <p>Waste from consented and possible future operations could include:</p> <ul style="list-style-type: none"> ○ Brine/ suspension fluid from workovers; ○ Waste hydrochloric acid (neutralised) from acid wash; ○ Waste fluid from injectivity tests; ○ Waste material/ equipment removed from the well for maintenance/ replacement (steel tubing/ production casing/ pumps etc. if they cannot be reused);

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
	<ul style="list-style-type: none"> ○ Drilling/ wash cuttings from well clean-up following workover; ○ Waste water and sewage; ○ waste engine, gear and lubricating oils, oil rags and absorbents; ○ Water or oil based drilling mud; ○ Drill cuttings; ○ Cement returns; ○ Waste from completion including spent perforation equipment; ○ Nitrogen to restart well production (if needed); and ○ Produced water separated from gas <p>Abandonment and restoration of the site would produce the following additional wastes:</p> <ul style="list-style-type: none"> • Waste from purging/ cleaning well (brine/ removal of completion, pumps etc.); • Excess cement from cement plugging; • Cut casing; • Broken concrete from cellar; • Site surface aggregates and clay/ HDPE lining; and • Stones etc. removed from stored topsoil <p>These wastes are all within the scope of the existing planning consent.</p> <p>Extractive wastes are addressed in the waste management plan (WMP) developed as part of the mining waste operation forming an ongoing variation to the Environmental Permit. Non-extractive wastes are managed in accordance with relevant regulations, as outlined in the WMP. NORM waste will be managed in accordance with the existing RSA permit which permits the operator to accumulate and dispose of radioactive waste (in the form of aqueous waste and solid waste) containing NORM arising from the production of oil and gas.</p>
(e) Pollution and nuisances	
Will the development release any pollutants or any hazardous, toxic or noxious	Emissions from the wellsite will be monitored for health and safety reasons. There are no planned emissions as the infrastructure forms a closed-loop system. During maintenance, emissions will be minimised through good practice, as

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
substances to air?	<p>outlined in Third Energy’s EMP and regulated by the HSE and Environment Agency. Where possible, gas will be flushed from the system to KGS prior to maintenance or cleaning tanks to avoid emissions and odour.</p> <p>The environmental permit (mining waste variation) ensures “waste” emissions are properly addressed through management and control.</p> <p>Minor emissions from site vehicles and temporary generators if required would produce NOx, SOx, PM10 and PM2.5, CO and VOCs, but would be temporary and localised. These would be similar to emissions on other industrial sites.</p> <p>The scale of the proposed activities is such that significant effects to air quality are not anticipated. There are no Air Quality Management Areas in the vicinity of KM-A.</p>
Is there a potential risk from leachates or escape of wastes of other products/by-products that may constitute a contaminant in the environment?	<p>The environmental permit requires that risk to groundwater and surface water is controlled appropriately. The site is covered with an impermeable (or low permeability) clay/ HDPE liner, and all tanks and pipework are required to be appropriately managed.</p> <p>Discharge to the adjacent drain is an active process, and would only take place if there is no contamination in the drainage ditches. Any contaminated water would be retained within the site surface water drainage network or interceptor and disposed of off-site by a licensed waste contractor. Containment bunding under equipment also prevents potentially contaminated water from being released into the drainage system.</p> <p>As outlined in Appendix 2 a number of embedded mitigation approaches have been included within the site to avoid impacts to surface water or groundwater.</p>
Will the development cause noise and vibration or release of light, heat, energy or electromagnetic radiation?	<p>Routine production/ maintenance operations at KM-A do not cause noise or vibration. However there is the potential for workovers or additional drilling to cause noise and limited vibration close to the site, but this is well controlled through distance from the nearest receptors and operational management. The planning consent also places restrictions on noise, including at the nearest receptor and requires a scheme of noise monitoring prior to works being undertaken.</p> <p>The site is lit during workovers/ drilling to satisfy health and safety requirements, but this is controlled to light the site interior only, and the site is screened. Lighting is controlled to ensure it is at the lowest level appropriate for safe operations.</p> <p>The effects of vibration of HGV traffic using the access track and road network for “day-to-day” operations on the wellsite will be no greater than currently existing operations, and of a similar magnitude to agricultural usage. During workovers, numbers will be higher, but within numbers consented in the existing consent. There are no residences along the access track and amenity effects on the wider road network will be controlled through hours of working, TMP and the generally low numbers of vehicles required.</p>

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
Will the development lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	<p>As indicated in relation to release of leachates from wastes, the environmental permit requires that risk to groundwater and surface water is controlled appropriately. An impermeable (HDPE) and low permeability (clay) liner underlies the site, and all tanks and pipework are sited to avoid leaching.</p> <p>Discharge to the adjacent drain is an active process, and would only take place if there is no contamination in the drainage ditches. Any contaminated water would be retained within the site surface water drainage network or in containment bunding under equipment, and disposed of off-site by a licensed waste contractor.</p> <p>As outlined in Appendix 2 a number of embedded mitigation approaches have been included within the site to avoid impacts to surface water or groundwater.</p>
(f) Risk of major accidents and/or disasters, including those caused by climate change	
Will there be a risk of major accidents and/or disasters during construction or operation of the development which would have effects on people or the environment?	<p>The site is an existing, operational wellsite. While the risk of a major accident exists, standard safety measures would be implemented to ensure that such as risk is negligible. The health and safety risks of the proposals would be managed by the Applicant's Safety Management System and the HSE has overall regulatory oversight, with independent well examinations and audits carried out.</p> <p>Risks as a result of climate change (such as potentially increased flooding) are addressed through the site design (drainage) and good site practice (for example, containment of chemicals on site in appropriate tanks and storage areas). In the event of a risk of flood, vulnerable equipment and staff can be removed from site, where appropriate.</p>
Will the development involve use, storage, transport, handling or production of substances or materials which could be harmful to people or the environment (flora, fauna, water supplies)?	<p>All chemicals, fuels and wastes from the proposals would be stored on site in suitable containers in accordance with regulations and best practice. An impermeable/ low permeability lining (clay and HDPE) underlies the site and all fuels and oils and other potentially harmful chemicals would be stored in dedicated areas and in bunded tanks, and fuelling would be undertaken by competent staff in areas with appropriate bunding in case of drips or spills. Spill kits would be in place.</p> <p>Waste would be disposed of in appropriately licenced waste facilities by licensed contractors. Likely significant effects are not anticipated.</p>
(g) Risks to human health	
What are the risks to human health such as from water contamination or air pollution?	<p>KM-A is currently consented under an environmental permit (currently under an application for variation), addressing management of waste and emissions to the surrounding environment (as part of the Mining Waste permit variation applied for in December 2016) and protection of groundwater (from the KM-3 operations, and also subject to amendment to reflect recent changes in regulations, as a groundwater activity permit).</p>

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
	<p>Levels set for these emissions, and operational controls in place to prevent emissions protect human health, while ensuring the facility can operate safely and efficiently.</p> <p>There are no Air Quality Management Areas in the vicinity of the Proposed Development – the nearest being in Malton, over 8 km to the south.</p>
(h) Other characteristics	
Potential physical changes (topography, land use, changes in water bodies etc.) from construction, operation or decommissioning of the development?	<p>KM-A is an existing operational wellsite and there are no proposed changes that have not already been consented. No physical changes to the site boundary are proposed.</p> <p>When decommissioning occurs, the site would be subject to a decommissioning plan, and restored to agricultural use.</p>
2. LOCATION OF THE DEVELOPMENT	
(a) Existing and approved land use	
Are there existing or approved land uses on or around the location which could be affected by the development, e.g. residential, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying?	<p>KM-A is located away from houses and other industry. The nearest residence is Alma Farm, located 300m north-west of the site, and Kirby-O-Carr Farm, located 210m south of the site. Sugar Hill Bungalow, located 170m from the KM-A wellsite, is not habitable. A caravan park is located north-east of the site, which provides static and touring caravan accommodation. The boundary of the caravan park is approximately 420m from the KM-A wellsite.</p> <p>Flamingo Land Leisure Park and Zoo, a regionally significant theme park and tourist attraction, is located 750m (park entrance) to the north of the KM-A wellsite and provides static and touring caravan accommodation.</p> <p>The wellsite is surrounded by mature trees to the south and west obscuring it from view at ground level in those directions, and immature planting to the north and east. The site is visible from the adjacent footpath to the north-east.</p> <p>The site is located within open countryside and use surrounding the Installation and dominating the whole of the Vale of Pickering is primarily agricultural, both arable and pasture land.</p>
Is the development located in a previously undeveloped area where there will be loss of greenfield land?	No. KM-A is existing infrastructure.

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
(b) Relative abundance, availability, quality and regenerative capacity of natural resources in the area and its underground	
<p>Are there any areas on or around the location which contain important, high quality or scarce resources which could be affected by the development?</p> <ul style="list-style-type: none"> • soil • land • groundwater resources • surface waters • biodiversity • forestry • agriculture • fisheries • tourism • minerals 	<p>KM-A is an existing consented and permitted wellsite with measures in place to prevent any significant effects on surrounding resources.</p> <p>Soil and land use is primarily agricultural. There are some environmental and countryside stewardship agri-environmental agreements in place on land in the vicinity of the existing site, though none on or adjacent.</p> <p>The site overlays superficial deposits of clay and sand, and the underlying Ancholme Group and Corallian Group aquifers. Overall, the Ancholme Group has a very low permeability and is classed as Unproductive, although it supports small local abstractions. The underlying Corallian Group is a Principal aquifer of regional importance and is used extensively for water supply around Pickering and Scarborough but on account of the thickness of the overlying Ancholme Group in the locality of the KM-A wellsite, is unlikely to be targeted locally. The water is likely to be highly mineralised and of poor quality due to limited recharge to the aquifer.</p> <p>No licensed abstractions, boreholes or springs have been identified within 1km of the site. There is one abstraction licence (surface water) within a 2km radius of the KM-A wellsite at Flamingo Land Zoo. The licence is located approximately 1.6km north-east on Costa Beck and is associated with agricultural use. The nearest potential private water supply is located approximately 300m north-west of the KM-A wellsite at Alma Farm.</p> <p>The site is not in a groundwater source protection zone, the nearest associated with the public water supply at Pickering, approximately 6km north-east of the KM-A wellsite.</p> <p>The area, including the surrounding area is a drinking water protection area for surface water.</p> <p>There are several small watercourses including Sugar Hill Drain and associated field drainage system adjacent to the site to the west. This flows to Ackland Beck and Costa Beck. The River Seven is located approximately 2.5 km to the west of the KM-A wellsite and flows to the south. Costa Beck is located approximately 1.5km east of the KM-A wellsite and flows to the south-east.</p> <p>The site is in Flood Zone 1, an area where flooding from rivers and the sea is very unlikely, with a less than 0.1% (1 in 1,000) chance of flooding occurring each year.</p> <p>The site is not located within or close to any statutory or non-statutory designations (see below).</p> <p>There is no ancient woodland or commercial forestry in the vicinity of the site, though there are strips of deciduous woodland in the surrounding landscape including the screening vegetation around KM-A.</p> <p>Flamingo Land is of regional tourist importance, and is located 750m (park entrance) to the north of the KM-A wellsite. North Yorkshire generally also has tourism importance.</p> <p>Interaction of the above factors is important, but the overall limited impact on each, and mitigation to avoid significant</p>

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	KM-A
	environmental impacts overall will ensure interactive effects are also minimised.
(c) Absorption capacity of the natural environment	
Are there any areas on or around the location which are protected under international or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the development?	<p>There are no sites protected for historic or ecological purposes on the site.</p> <p>The nearest SSSI is The Ings Amotherby which is approximately 3.7 km south of the site, to the south of the River Rye.</p> <p>The North York Moors National Park, boundary is approximately 5.8 km north-east of the site at its nearest point. North York Moors Site of Special Scientific Interest (SSSI) is further north, approximately 8.5 km north of the site and the North York Moors Special Area of Conservation (SAC) and Special Protection Area (SPA) still further north, being approximately 12.5 km to the north of the site.</p> <p>The River Derwent SSSI is approximately 5 km south-east of the site. This is not a Special Area of Conservation (SAC) at the nearest point but it is further upstream (approximately 6.8 km south-east of the site)</p> <p>The site is within the Impact Risk Zone for these SSSIs for developments involving oil and gas, though the nature of the development, and the fact that it is existing infrastructure means it does not present a risk of significant impacts in relation to Natural England’s “reasons for concern”¹² due to the protections in place relating to air emissions, water abstraction, treatment of waste drilling fluids, creation of dust, flaring, vibration and the development footprint. The planning application will include measures in place to prevent any impact on these designations.</p> <p>Low Carr Farm Site of Importance for Nature Conservation (SINC) is approximately 1.8 km east of the proposed development at SK 793 793, on the eastern side of Costa Beck. This is a Yorkshire Wildlife Trust (YWT) Reserve managed as a “wildlife friendly” farm. Meadow restoration through seeding, and hedgerow management operations are being undertaken. The site has been identified as having future potential for development of the wetter areas into important wetland habitats.</p>

¹² Natural England Guidance Document (Natural England’s Impact Risk Zones for Sites of Special Scientific Interest (For use by Local Planning Authorities to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites and determine when to consult Natural England) September 2017) - http://magic.defra.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf.

Oil and gas developments may involve water abstraction, which can affect local water supplies that designated sites depend on. Waste drilling fluids that are returned to the surface may contain gases and other contaminants, which may be treated and discharged either to the ground to filter away from the site, or into a nearby watercourse. If the treated water flows towards a SSSI, it has the potential to impact on water quality sensitive features. Site activities and spoil generation can create dust or particles, which can physically smother leaves or be toxic to habitats and species on SSSIs. Flaring may give rise to local elevated levels of particulates, local ozone formation and NOx emissions. The development footprint and site activities can result in loss or fragmentation of greenspace and loss or disturbance to functional habitat, which birds depend on for feeding. Vibration from drilling can affect geological features.

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	KM-A
	There are some listed buildings within the village of Kirby Misperton, but the existing site will not affect the setting of these. There are no scheduled monuments within 1km.
<p>Are there any other areas on or around the location which are important or sensitive for reasons of:</p> <ul style="list-style-type: none"> • wetlands; riparian areas; river mouths or coastal zones and the marine environment; • mountains and forest areas, or nature reserves and parks; • Special Protection Areas and Special Areas of Conservation, SSSIs, AONBs and National Parks; • areas in which there has already been a failure to meet the environmental quality standards laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure; • densely populated areas; • landscapes and sites of historical, cultural or archaeological significance. 	<p>KM-A is an existing wellsite, with few sensitive receptors in the vicinity. There are no recorded areas of wetland vegetation within 2 km of the site, though some coastal and floodplain grazing marsh (priority habitat) around Kirby-O’Carr approximately 300 m south from the site, and Little Barugh, to the west.</p> <p>Sugar Hill Drain runs adjacent to the site, which is subject to a scheme of monitoring as part of the environmental permit.</p> <p>There are no coastal zones, mountains or forest areas, nature reserves, national parks, Special Protection Areas or Areas of Outstanding Natural Beauty near to KM-A.</p> <p>SACs and SSSIs are addressed above.</p> <p>The site is not within any Air Quality Management Areas or areas where other EQSs have not been met. It is not located close to densely populated areas (Kirby Misperton, the nearest settlement is approximately 750 m to the north-east, with the boundary of a caravan park approximately 400m from the site).</p> <p>As no changes to the site are proposed, there will be no impact on landscapes or sites of historical, cultural or archaeological significance.</p>
<p>Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected?</p>	<p>The existing KM-A site is largely screened by woodland (and immature woodland) which could be used for bird or bat roosting. Beyond this screening, the site is surrounded primarily by agricultural land with limited ecological value, though with some potential for ground nesting birds and potentially bats in nearby barns. Field margins may also have some ecological importance as ecological corridors.</p> <p>The ecological report to be prepared to inform the application will provide an update to the ecological baseline around the site, and outline any mitigation that may be required. However, it is noted that there is no intention to extend the area or operations on the site from its existing state. It is anticipated that prior to decommissioning a further assessment would be</p>

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
	made to minimise ecological impact at the time, using good practice of the time.
Are there any inland, coastal, marine or underground waters on or around the location which could be affected?	<p>Sugar Hill Drain is the nearest watercourse to KM-A wellsite, adjacent to the site to the west, flowing to Ackland Beck and Costa Beck. Discharge of clean water from the site to Sugar Hill Drain is permitted under the Environmental Permit, with mitigation in place to ensure no unplanned discharge takes place from the site.</p> <p>The River Seven is located approximately 2.5 km to the west of the KM-A wellsite and flows to the south. Costa Beck is located approximately 1.5 km east of the KM-A wellsite and flows to the south-east.</p> <p>There are no groundwater dependent Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), Ramsar or other designated areas within a 2km radius of the KM-A wellsite.</p> <p>Groundwater receptors, including superficial deposits of clay and sand, and the underlying Ancholme Group and Corallian Group aquifers underlie the site, as addressed above (point 2(b)).</p> <p>No licensed abstractions, boreholes or springs have been identified within 1km of the site, though there could be unrecorded Private Water Supplies (PWS) at some properties within the area. The closest of the potential private water supplies is located approximately 300m north-west of the KM-A wellsite at Alma Farm. The nearest recorded abstraction licence is at Flamingoland approximately 1.6km north-east on Costa Beck.</p>
Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources?	The site is not in a groundwater source protection zone, the nearest (Zone 3) being approximately 6 km north-east, near Pickering.
Are there any areas or features of high landscape or scenic value on or around the location which could be affected?	<p>KM-A is largely surrounded by woodland (and immature trees and bunding to the north and east) and fencing with limited visibility from the surrounding area, including from listed buildings (all over 900 m from the site). It is part of the existing background environment.</p> <p>There are no areas designated for landscape importance in the site or within 5 km.</p>
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected?	<p>The nearest public right of way to the wellsite is Public Footpath 25.53/4/1 located north and east of the site. This was diverted in 2013 to allow for the construction of the KM-1 wellsite extension. Public right of way number 25.53/5/2 traverses a section of the existing access track, used to access both the KM- A and KM-B wellsites. Though the site is visible from the footpath as vegetation matures, to the Applicant’s knowledge, there have been no reported incidents or complaints associated with the public rights of way being adjacent to the KM- A and KM-B wellsite.</p> <p>Other footpaths and rights of way are present in the surrounding area. Local roads are also used by walkers, riders and cyclists.</p> <p>The existing traffic management plan to the site provides methodologies to ensure users crossing the access road, and</p>

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	KM-A
	<p>using other roads in the area are protected.</p> <p>There may be a requirement for temporary closure or diversion of footpaths for safety for temporary maintenance or repair of the access track or wellsite though these would be minimised by ensuring best practice is used, and would be authorised by NYCC.</p> <p>Traffic to and from the site includes staff vehicles and light goods vehicles (LGVs) bringing in supplies. Heavy Goods Vehicles (HGVs) are occasionally needed if equipment requires to be taken offsite for maintenance. On average, there are no more than six vehicle movements to and from the site daily – largely staff cars, with occasional increases should workovers/ restoration works be required, and occasional HGVs for maintenance.</p> <p>These transport movements would be made during the working day with all but essential deliveries being made during daylight hours. Only in exceptional circumstances which were operation or health and safety led, would deliveries be made at night. During workovers and abandonment and restoration, vehicle numbers would be greater, and there may be more requirement for nighttime movements (subject to agreement with NYCC), but within numbers consented.</p>
Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected?	<p>KM-A is connected to the local road network via the access track to Habton Road, and the A169 and the A64. These roads are well used by HGVs - the A64 connects York and Scarborough (bypassing Malton), and the A169 connects Malton and Pickering. Traffic associated with local farms also uses these roads.</p> <p>A private access track from Habton Road allows access to the KM-A wellsite. Traffic numbers associated with the site are low as indicated above, and there have been no significant issues relating to congestion on local roads as a result of the ongoing (conventional) operations at KM-A. The centre of Malton is an Air Quality Management Area, but the number of heavy vehicles passing through this area associated with KM-A are minimal (local traffic only, as other vehicles would use the A64 bypass) and part of the existing background.</p> <p>A review of the traffic-related conditions will be undertaken in the environmental report to ensure that vehicles associated with KM-A (and other parts of the infrastructure) use the most appropriate local roads.</p>
Is the development in a location where it is likely to be highly visible to many people?	<p>KM-A is currently screened by woodland to the south and west, and immature planting and bunding to the north and east. It is in a rural area with few residential properties within proximity to the site. Therefore it is not highly visible to many people.</p>
Are there any areas or features of historic or cultural importance on or around the location which could be affected?	<p>There are no listed buildings or scheduled monuments within 900 m of the site. There will be no additional expansion of the site to affect any unknown buried archaeology or similar in the surrounding area and no additional effect on the setting of any features in the surrounding area.</p>
Are there any areas on or around the location which are densely populated or built up,	<p>The site is located in a rural area, with no effect on any densely populated areas as a result of routine operations, and</p>

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
which could be affected?	effects during workovers/ drilling controlled by planning conditions.
Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected?	There are no Air Quality Management Areas in the vicinity of KM-A, though there is one approximately 8 km to the south of the site in Malton. This is declared in the centre of the town for nitrogen dioxide, along the B1248 and B1257. No other legal/ environmental standards are exceeded in the surrounding area. There have been no exceedances of emissions permitted at KM-A, with ongoing monitoring by the Environment Agency and management plans developed as the site had evolved.
Is the location of the development susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the development to present environmental problems?	KM-A and its access track are in Flood Zone 1, an area where flooding from rivers and the sea is very unlikely, with a less than 0.1% (1 in 1,000) chance of flooding occurring each year. Drainage around the site is controlled by the existing drainage strategy. The area does not have a history of earthquakes according to the BGS earthquake timeline ¹³ . The site is not considered susceptible to any other hazards mentioned.
3. TYPE AND CHARACTERISTICS OF THE POTENTIAL IMPACT	
(a) Magnitude and spatial extent of the impact	
Will the effect extend over a large area?	No. Any effect would be confined to the area surrounding KM-A. Possible impacts with wider potential such as air quality emissions, emissions to water or traffic, are included in existing management/ permitting, to ensure such effects are appropriately controlled.
Will many people be affected?	No - As above, the impacts will be mitigated by the existing measures in place (which will continue until 2035) to ensure the local population are not affected by the proposed time extension.
(b) Nature of the impact	
What will be the nature of the impact?	The nature of the impact will be as currently experienced, as there is no intention to amend operations (other than the extension of time) without appropriate further planning and permitting applications. No aspect of the impact on the local environment is considered to be significant, and can be mitigated to acceptable levels by management plans in place,

¹³ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html?mode=earthquakes>

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
	and relevant environmental permits and planning conditions.
(c) Transboundary nature of the impact	
Will there be any potential for transboundary impact?	No
(d) Intensity and complexity of the impact	
Will there be a large change in environmental conditions?	No – the site will continue to operate as at present with monitoring as a condition of the environmental permit to ensure that environmental conditions can be compared against the baseline.
Will the effect be unusual in the area or particularly complex?	No – KM-A is an existing site so effects will remain as in the current background.
Will many receptors other than people (fauna and flora, businesses, facilities) be affected?	KM-A is located in a rural area, primarily with agricultural fields in the surrounding area. An ecological report will be provided within the environmental report to update the current ecological background and identify any sensitive receptors. Similarly assessment of noise, landscape and transport will be undertaken. Other businesses and facilities in the area will not be affected to a greater extent than at present.
Will valuable or scarce features or resources be affected?	No - There are no valuable or scarce features or resources in close proximity to KM-A and the infrastructure will continue operating as presently permitted and consented.
Is there a risk that environmental standards will be breached?	No –As indicated above, there are no environmental standards that would be breached as a result of extending the lifetime of KM-A and existing permits, planning conditions and other safeguards will ensure emissions are maintained at levels where this will not be an issue.
Is there a risk that protected sites, areas, and features will be affected?	No - As indicated above, there are no designated areas or features in close proximity to KM-A that would be affected by continued operation of the infrastructure in accordance with the environmental permit and planning conditions.
(e) Probability of the impact	
Is there a high probability of the effect occurring?	As with all development, it is likely that some environmental effects will occur, although the nature, duration and scale will be limited as described herein. The effects of the extension of lifetime of the KM-A wellsite have been proven to be acceptable through nearly 25 years of operation, with monitoring of the baseline environment and emissions undertaken

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
	as required by regulators. Established and embedded mitigation and management techniques will continue to be used to reduce the probability of effects occurring.
Is there a low probability of a potentially highly significant effect?	As above, control measures and mitigation will be retained (or be implemented as consented for operations such as workovers or future drilling) to ensure that the possibility of a “highly significant effect” resulting from either routine operation of the infrastructure, or any accident will be avoided.
(f) Expected onset, duration, frequency and reversibility of the impact	
What will result in the onset of the impact?	KM-A will continue to operate according to its existing environmental permit (and permit variation) and conditions attached to the planning consent. Should consented workovers or further drilling be undertaken (subject to submission of further information to NYCC to discharge appropriate conditions in the planning consent) there may be different (but still mitigable and acceptable) effects arising.
Will the effect continue for a long time?	Any effects from routine operations will continue for the lifetime of the wellsite, subject to necessary maintenance and upgrades to meet necessary permitting requirements. Temporary effects may also occur during workovers/ drilling and restoration.
Will the effect be permanent rather than temporary?	As above, any effects will continue for the lifetime of the infrastructure, subject to necessary maintenance and upgrades to meet necessary permitting requirements.
Will the impact be continuous rather than intermittent?	Any routine effects will be continuous, when KM-A is operational, with occasional temporary, intermittent effects during workovers or additional drilling.
If intermittent, will it be frequent rather than rare?	Any intermittent effects would be as a result of contingency operations, for example, unexpected maintenance requirements, or planned workovers/ drilling which would be notified to NYCC and the Environment Agency. Such events would be rare.
Will the impact be irreversible?	No – any above-ground effects will be reversible through removal of plant, decommissioning of the wells, mitigation or environmental restoration measures. Sub-surface infrastructure will remain in the ground, as currently consented, with measures in place to prevent adverse environmental effects, as part of the decommissioning process.
Will it be difficult to avoid or reduce or repair or compensate for the effect?	No – the controls in place ensure that monitoring will identify any issues quickly, and measures undertaken to stop any harmful emission, and remediate any resulting effect.

Table 2: Screening Assessment for Proposed Development (extension of operational period to 2035)	
	KM-A
(g) Cumulation of the impact with the impact of other existing and/or approved development	
Will there be a cumulative impact arising from other existing and/or approved development?	<p>The impacts arising from KM-A are part of the existing background, and therefore any proposed future development will require to include the existing infrastructure within their assessment of potential cumulative effects.</p> <p>Other related features in the area are the other satellite wellsites (which will undergo a similar screening process to NYCC to extend their lifetime from May 2018 until 2035), and KGS, the OHL and pipeline network (also subject to screening). These are also consented and existing features in the landscape, and their cumulative effect with other planning applications being brought forward will be considered on their own merits.</p>
(h) Possibility of effectively reducing the impact	
What is the possibility of the likely impacts arising from the Proposed Development being effectively reduced?	<p>Mitigation is embedded into the design of the existing development (as outlined in Appendix 2), which will not be affected by the Proposed Development, and effects have previously been assessed as being acceptable in the surrounding environment. The original consents addressed effects arising from construction (which is no longer relevant, but which effects would be greater in terms of noise, traffic and other amenity issues) as well as operation. Mitigation such as screening by vegetation around KM-A provides more effective visual mitigation than when originally consented, and will continue to mature. Regulations surrounding the environmental permitting of the infrastructure have increased over time.</p>

4 Conclusion

- 4.1 This screening request has considered whether the Proposed Development is likely to give rise to significant effects on the environment.
- 4.2 The Proposed Development falls under Schedule 2 of the EIA Regulations as although not in a sensitive area, its footprint exceeds the legislative area thresholds. Although it exceeds indicative thresholds for EIA within the PPG this does not take account of the pre-existing nature of the development, and as the proposed application is only concerned with a time extension, additional environmental impact will be lower than a new development of the same size.
- 4.3 Table 2 sets out the baseline environmental conditions in the area on and adjacent to the Proposed Development. The potential exists for environmental effects on air quality, ground and surface water, transport, ecology views and noise. However, the site is existing infrastructure, located in an agricultural area with few adjacent sensitive receptors and therefore the potential for significant effects is considered to be unlikely. Standard proven mitigation measures employed on the current site will be employed as set out in Appendix 2.
- 4.4 Accordingly, the screening request has identified that significant effects on the environment are not considered likely either alone or in combination with other development and therefore the Proposed Development should not be considered to constitute EIA development as defined by the EIA Regulations.
- 4.5 An environmental report would be provided alongside the application. This would consider environmental issues arising from all wellsites, as well as the KGS/OHL and pipeline network infrastructure. Therefore it would address both the Proposed Development and other aspects of the Vale of Pickering conventional gas extension applications. Technical Appendices would address the impacts associated purely with the Proposed Development, and the main body of the report would outline cumulative effects associated with other aspects of the Vale of Pickering conventional gas extension applications.
- 4.6 In particular, the environmental report would identify the existing mitigation measures in place to prevent significant environmental impacts. It is acknowledged that, if consented, the existing infrastructure will continue to have a presence in the environment beyond that assessed in the original environmental information informing the planning consent. Therefore, there will be a requirement to update information where this has altered from 1993 and the extension in 2006, and to assess how the ongoing operation could have environmental impacts (including cumulative impacts with other developments) until the new end-of-life proposed. In addition, the need for any further mitigation for the extension of operations to 2035 will be identified.
- 4.7 No new operations are proposed as part of the Proposed Development or any other aspects of the Vale of Pickering conventional gas extension applications, and should material additional works be proposed on KM-A, these will be subject to their own planning consent, with appropriate consideration of environmental effects.
- 4.8 The scope of the environmental report will be discussed with regulators. In terms of the environmental impacts outlined in Schedule 3 of the EIA Regulations the following considerations have been made:

- Population and human health – There would be no assessment of these aspects specifically in the environmental report to accompany the planning application. The environmental permits associated with the wellsite (and other aspects of the infrastructure, including the other satellite wellsites and KGS) will ensure that emissions are set at a level to protect sensitive receptors, including the health of the local population. There is sufficient flexibility in the environmental permits, and the capability of the Environment Agency to vary conditions and levels in accordance with current scientific opinion to ensure safe operation of the wellsites and other infrastructure. This also applies to control of the pipeline network through HSE audits and associated requirements to upgrade and maintain the pipeline to meet the requirements of the relevant regulations. Any potential future works will be controlled by the relevant permits, and planning consent attached to any new wells. A **review of the noise conditions** would be included, providing certainty that acceptable levels can be met at the nearest receptor, and to identify any necessary secondary measures to mitigate noise arising at identified sensitive receptors from continued operations and associated noise at wellsites.
- Biodiversity (for example, fauna and flora) – An **ecology report** will be included in the Environmental Report, to provide an updated baseline of ecological interest around KGS, the OHL, pipeline network and around the individual wellsites including KM-A. Should any species or habitat be identified with potential to be adversely affected by the continuation of the operations, mitigation will be provided. Existing mitigation, such as emissions limits and operational controls (such as restrictions on lighting, hours of working, maintenance procedures etc.) will continue to be used, with modification as necessary.
- Land and soil – There will be no additional land take associated with the extension. Decommissioning and restoration of the infrastructure would take place according to the original proposals, though with regard to best practice at the time. Soil protection will be ensured through measures within the environmental permit and pipeline consents to prevent any release of potentially polluting material to the environment. Therefore, there is no intention to address the impact of the proposed extension on land/soil resources in the environmental report, as environmental protection measures will be included within the “operation” section.
- Water – Although the existing discharge to water will continue from the infrastructure, as outlined in the relevant environmental permits, there will be no additional discharge points to water as a result of the Proposed Development, and measures in place to protect nearby watercourses will be retained. The environmental permit will require necessary monitoring of any releases of surface water to the environment, and any waste arising from the operations will be exported from the site, either by the existing pipeline network (for re-injection into KM-3) or by licensed waste disposal contractors to a licensed facility. Runoff will not increase as there is no planned increase in land-take as a result of the Proposed Development. A brief assessment of the continued impact of the Proposed Development (and other aspects of the Vale of Pickering conventional gas extension

applications) on hydrological resources will be included in the environmental report, alongside any identified additional mitigation. A flood risk assessment will be provided as guidance relating to this has changed since 2006.

- Air and Climate – Emissions from the wellsites and pipeline network are minimised through the health and safety requirements on the wellsites and Pipelines Regulations, and procedures are in place to identify and prevent any unplanned releases to the environment, as part of Third Energy's requirements to the HSE. The emissions from KGS are permitted by the KGS environmental permit and monitoring takes place in accordance with the requirements of the permit. Modelling that was undertaken to inform the original permit at KGS indicated that there would be no exceedance of Environmental Quality Standards for nitrogen dioxide, either in the short or long term as a result of the worst-case emissions from KGS, and these limits have not changed since 2006 (though the emissions permitted from KGS have decreased). Other emissions were excluded from assessment, having been screened out due to their low levels as identified by the permit monitoring (carbon monoxide and sulphur dioxide). Details on **emission limits and monitoring data** as provided to the Environment Agency as a requirement of the permitting will be outlined in the environmental report. A brief assessment of emissions up until 2035 against existing air quality standards will be included in the environmental report. This will assume KGS would operate at current capacity (approx. 42MW) and full consented capacity (up to 60MW). Similarly, carbon emissions will be provided alongside mitigation to minimise non-combustion emissions and likely susceptibility of the infrastructure to climate change.
- Material assets – It is not anticipated that there will be any requirement for an updated transport assessment, as the traffic numbers will not alter from the existing status as outlined in the existing consents, and there will be no adverse material impact on the road network, given these form part of the baseline traffic (or would result in a small increase in the case of workover or additional drilling traffic). However, a **review of the traffic related conditions** to control traffic movements to the sites will be carried out and presented with the environmental report.
- Cultural heritage (including archaeology) – There is no intention to address this in the report. Impacts of setting on cultural heritage features will not change from the existing site, and there will be no extension of the currently consented sites that could affect archaeological features.
- Landscape – Although existing, the infrastructure is screened in the landscape by vegetation as well as bunds, fencing and other features. A brief **landscape and visual review** of the baseline including existing infrastructure will be carried out, assessing how it integrates into the landscape and where screening can be managed to ensure it provides an effective visual barrier until 2035.
- Cumulative/ Interactive Effects – The environmental report will address effects arising from all aspects of the Vale of Pickering conventional gas

extension applications (KGS, OHL, pipeline network and wellsites) – which are cumulative to the KM-A wellsite. In addition, cumulative effects from other existing development including the consented work on the KM-8 well, and committed development including the consented pipeline from the Ebberston Moor South wellsite will be considered. As all infrastructure is existing within the environment, or was consented against a baseline including the existing conventional gas infrastructure (the extension until 2035 of part of which forms the Proposed Development), cumulative and interactive effects are not anticipated to result in significant environmental effects.

- 4.9 The 2017 EIA Regulations have a requirement for a consideration of climate change, major accidents and human health. As it is not anticipated that the development will be EIA Development, these will not be addressed in detail. However, a brief justification of why the Proposed Development will not affect these will be included in the environmental report.
- 4.10 As there will be no significant environmental impacts arising from the Proposed Development, it can be ascertained that there will be no adverse effect on the integrity of any protected European sites or species, under the requirements of the Habitats Regulations (Conservation of Habitats and Species Regulations 2017).
- 4.11 It is considered that these assessments included alongside the planning application will provide sufficient information to allow the RA to consider the material matters pertaining to the future application.

Appendix 1

Site Location Plans

- Pipeline network and site locations (1:25,000) – ZG-TE-PL-PA-01
- KM-A (1:2,500) – ZG-TE-KMA-PA-01

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KEY:

- PLANNING APPLICATION RED LINE BOUNDARY (SURFACE WORKS)
- WATER FEATURES (PONDS, DRAINS)

NOTES:

REVISION HISTORY					
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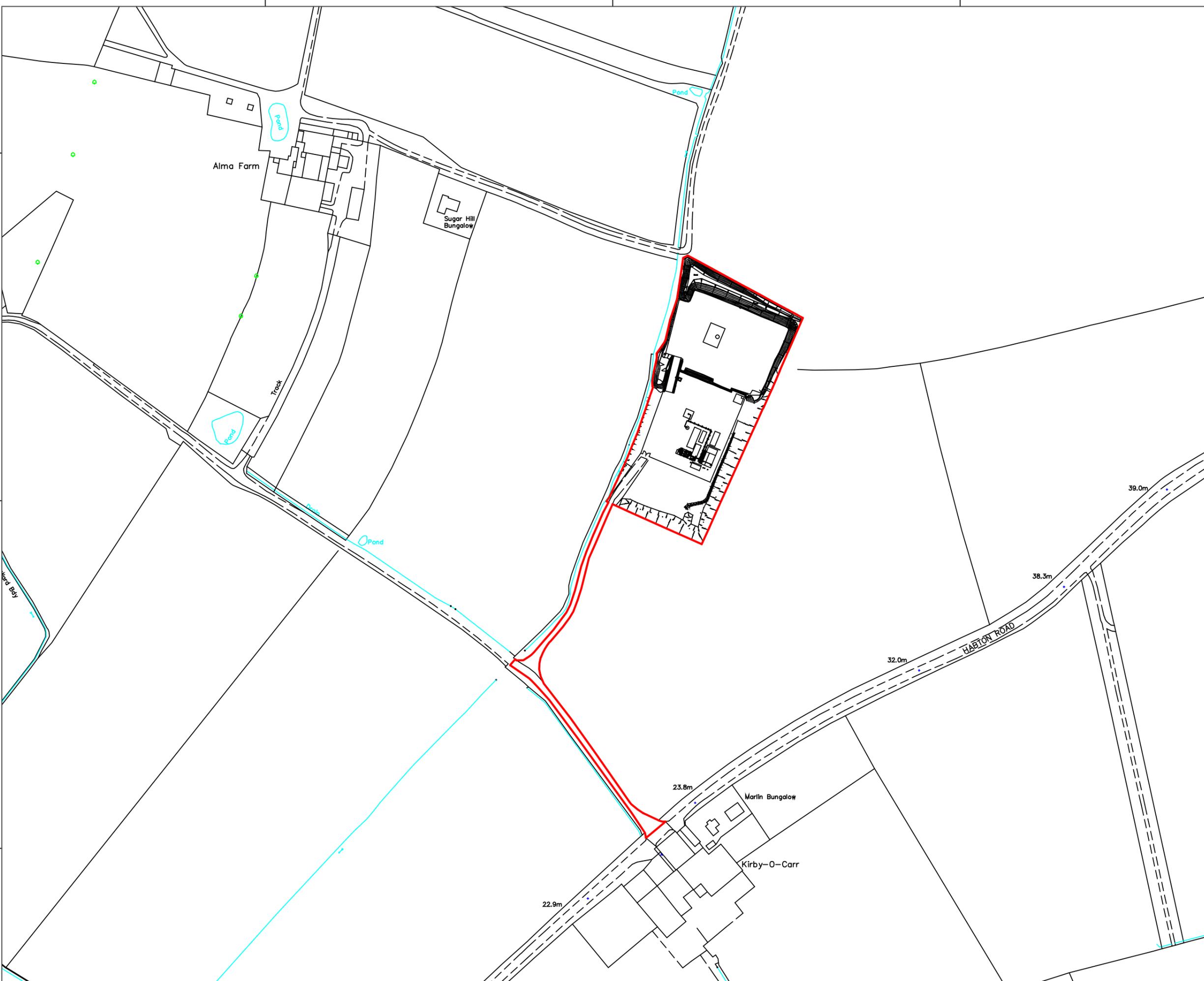
SITE: KMA WELLSITE, KIRBY MISPERTON, NORTH YORKSHIRE

PROJECT: RYEDALE GAS FIELDS EXTENSION TO PLANNING PERMISSION

TITLE: KMA WELLSITE RED LINE BOUNDARY PLAN

CLIENT: THIRD ENERGY UK GAS LIMITED

Scale: 1:2,500	DWG. No:
Size: A3	ZG-TE-KMA-PA-01
Sheet: 1 of 1	



Appendix 2

Summary of Mitigation Measures

Introduction

This appendix summarises the key embedded mitigation for all aspects of the development (with regard for potential cumulative effects arising from the “infrastructure” aspects (KGS, OHL and pipeline network) and the wellsites.

There are various mitigation measures integrated into the existing design of the sites, which are adopted to reduce or avoid impacts to the surrounding environment from the Proposed Development. These range from physical barriers to working practices and controls which are embedded within the development proposals. These draw upon industry experiences and best practice, as well as requirements associated with planning conditions and environmental permit conditions. This mitigation is an inherent part of the project proposal.

Where points are taken from existing permits and consents, these are paraphrased for simplicity. Numbers attached to planning conditions apply to the majority of wellsites, but PK, KM-A and KM-B have a different numbering system, though the majority of conditions are similarly worded. Unless otherwise stated, mitigation measures for wellsites apply to all wellsites. Although different wellsites currently have different environmental permit conditions, the measures included in this table will apply to all sites when gas production activities, workovers or abandonment and restoration occur.

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained				
	KGS	OHL	Pipelines	Wellsites
Air Quality and Noise				
Env. Permit	<p>There shall be no point source emissions to water, air or land except from the sources and emission points listed ... The limits ... shall not be exceeded. (Monitoring points for air include the turbine stack (NOx, CO, SO2, O2, water vapour, temperature and pressure), emergency flare, gas pre-heater and HCl scrubber vent stack).</p> <p>Relevant monitoring of the emissions shall be undertaken, and records maintained.</p> <p>Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.</p> <p>If notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, the operator shall submit to the Environment Agency ... a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration, which shall be implemented.</p>	n/a	n/a	<p>No flaring is permitted on the wellsites.</p> <p>The mining waste permits require that gas (fugitive emissions) is correctly managed as a hazardous waste, and a closed system is used.</p> <p>During any drilling operations, and during gas production, ambient air quality monitoring, together with gas detection (for health and safety purposes), would be used to monitor air quality.</p>
Planning Conditions	<p>8) Except in an emergency, and upon routine maintenance of "sulfachek" agent, noise levels shall not exceed 35dB(A)Leq (60 min) between 0700 and 1900h and 33dB(A)Leq (5 min) between 1900 and 1700h when measured 12m in front of the nearest residential receptor.</p> <p>9) No flaring of gas except at start-up, shut-down</p>	n/a	<p>9- No works associated with the maintenance of the pipelines shall take place on any Sunday or bank Holiday nor on any</p>	<p>8 No daylight operational workovers to take place on any Sunday or Bank Holiday nor on any other day except Mon-Fri 0800-1900h and Sat 0700-1300h, except in an emergency or with prior written approval of the County Council.</p> <p>9 No major workover/ tubing replacement to take place prior to approval in writing by the LPA of a scheme of work. This will make provision for notifying the LPA and residents 7 days in</p>

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained				
	KGS	OHL	Pipelines	Wellsites
	and in an emergency.		other day except Mon-Fri 0700-1900h and Sat 0700-1300h, except in an emergency or with prior written approval of the County Council. No vehicles in excess of 1.5 tonnes unladen will be used for works outside these hours.	<p>advance, and specify a programme of noise monitoring. Maximum permissible noise levels to be x dBLAeq(1 hour) between 0700 and 1900h and x dBLAeq(5min) between 1900 and 0700 at the house nearest to the wellsite. All noise monitoring results to be made available to the LPA as soon as available.</p> <p>Noise levels vary (represented by x above)</p> <p>KM-A – 42 dBLAeq</p> <p>KM-B – 40dBLAeq</p> <p>Malton A - 45dBLAeq</p> <p>Malton B - 41dBLAeq</p> <p>Marishes - 40dBLAeq</p> <p>12 Normal routine maintenance not on Sunday or Bank Holiday nor on any other day except Mon-Fri 0700-1900h and Sat 0700-1300h</p> <p>15 Stringent precautions to avoid smell, nuisance and gaseous pollution. All operations to be enclosed, and facilities made available to deal with accidental spillage, including application of sodium hydroxide or sodium hypochlorite to reduce smell from any mercaptans present.</p> <p>16 Atmospheric emissions generated to be monitored in accordance with scheme approved by the planning authority, and results to be submitted annually.</p> <p>PK wellsite has different conditions attached -</p> <p>4. Prior to the commencement of development, a schedule of noise mitigation measures should be submitted to and approved in writing by the County Planning Authority. The schedule should take into account the recommendations as set out in MPS2 Appendix 2B and in accordance with the recommendations set out below:</p> <ul style="list-style-type: none"> - All generator doors and mud pump engine doors

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained				
	KGS	OHL	Pipelines	Wellsites
				<p>should remain shut, particularly on an evening;</p> <ul style="list-style-type: none"> - Unnecessary work activities between 21.00 hours and 07.00 hours should be avoided; - Drawworks Brakes should be adjusted to remove or minimise brake squeal, having confirmed that a low-noise lining material is used. - If possible without compromising the mud quality, the centrifuge should not be used at night. Moreover it may be possible to mount the unit on a stand at low level, and provide an acoustic enclosure around it. - Site rules should ensure that voices are not raised at night time. - Acoustic screening or enclosure of the rig engine. - Orientation of the rig with lower noise levels to the south and east <p>Thereafter the development shall be implemented in accordance with the approved details unless otherwise agreed in writing by the County Planning Authority</p> <p>17. Such measures as may be approved in writing by the County Planning Authority including details of temporary acoustic bund shall be taken to ensure that perceived levels of noise, measured at the boundary of the nearest residential properties shall not exceed levels of 40dB(A) L90 and 50dB(A) L10 between the hours of 0700 and 1900 hours and 35dB(A) L90 and 40dB(A) L10 between the hours of 1900 and 0700 hours or such other levels at such locations as may be approved by the County Planning Authority.</p> <p>(Further conditions are placed on workover operations at PK-1, including a 5m acoustic barrier is to be erected and maintained during all night-time working on the 'Workover'.)</p>

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained

	KGS	OHL	Pipelines	Wellsites
Other	<p>Location of the site approximately 650m from the nearest noise sensitive receptor.</p> <p>Positioning of any noisy equipment to ensure noise is minimised.</p> <p>Use of appropriate silencers on equipment as appropriate.</p> <p>No night-time vehicle movements, except in an emergency.</p> <p>Regular maintenance of equipment to minimise noise generation.</p> <p>Dust from vehicle use on the access track will be controlled with standard dust-control measures including use of water sprays where necessary.</p>	<p>The key mitigation for noise arising from the OHL is the distance from the nearest residential receptor (Ochre Farm) which is approximately 300m from the OHL (and closer to the regional transmission line).</p> <p>Noise from routine maintenance and decommissioning will be controlled through controls on hours of working and a noise management plan, as outlined in the existing planning consent attached to KGS.</p>	<p>Noise from routine maintenance and decommissioning will be controlled through controls on hours of working as indicated above, and a noise management plan, as outlined in the existing planning consent attached to KGS.</p> <p>Monitoring and repairs as necessary will be undertaken, as required by the HSE, to prevent leaks affecting air quality.</p>	<p>The wellsites are operated according to the Borehole Sites and Operations Regulations 1995 and Offshore Installations and Wells (Design and Construction, etc) Regulations 1996 (DCR 1996), as well as other Health and Safety-related regulations. These require the integrity of wells to be maintained over the lifecycle of the well so as to ensure, so far as is reasonably practicable that there can be no unplanned escape of fluids from the well, or anything that risks the health and safety of persons. This includes emissions to air, including methane.</p> <p>The wellsites are located at a sufficient distance from properties that the noise limits outlined in the planning conditions can be met during the noisiest operations on the site, with additional noise mitigation applied where necessary (e.g. workovers or drilling). During operation, very little noise arises from the sites.</p> <p>General good practice relating to wellsite maintenance applies – for example:</p> <ul style="list-style-type: none"> • positioning of any noisy equipment to ensure noise is minimised. • use of appropriate silencers on equipment as appropriate. • no night-time vehicle movements, except in an emergency. • regular maintenance of equipment to minimise noise generation. • dust from vehicle use on the access track will be controlled with standard dust-control measures including use of water sprays where necessary.
Surface & Groundwater				
Env.Permit	There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3...The limits given in	n/a	n/a	The mining waste permits ensure proper management of waste in such a way as to ensure there is no pollution of groundwater or surface water.

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained

	KGS	OHL	Pipelines	Wellsites
	<p>schedule 3 shall not be exceeded. (Monitoring points for water include 1) the oil interceptor pit prior to discharge to Difford beck (measuring oil, biological oxygen demand, suspended solids and pH) and 2) the point at which liquid arisings return pipeline from the installation meets liquid arisings from the Marishes well (measuring total volume of produced water, condensate, corrosion inhibitor and glycol discharged)).</p> <p>Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.</p> <p>A variation to the environmental permit to permit a mining waste facility, is under consideration by the Environment Agency. This outlines other mitigation to safeguard water by ensuring proper management of mining waste (liquids arising from gas operations, including produced or “flowback” water, and suspension fluid) on site.</p>			<p>The groundwater permits at PK and KM-A ensure there is no re-injection into groundwater of any hazardous substances.</p> <p>Water sampling is required where there is risk of pollution.</p> <p>At KM-A and PK there is a requirement for monitoring of flow, volume and nature of the reinjected fluid.</p>
Planning Conditions	<p>6) All storage of fuel, oils and chemicals shall be individually contained, sited on impervious bases and surrounded by bund walls, of the capacity of the largest tank in each bund plus 10%¹⁴. All inlets and outlets etc should be located within the bund. Any contaminated water or materials should be disposed of satisfactorily.</p>	n/a	<p>5 Where the pipeline may affect any apparatus belonging to any statutory undertaker, or watercourse well or aquifer, any works for the operation or maintenance of the pipeline shall be carried out in</p>	<p>10 Wellsites to be fitted with drainage system to remove liquids from well cellar/manifold to an oil/water separator. Contaminated hydrocarbons to be transferred to a holding tank for periodic removal to KGS for treatment.</p> <p>13 No storage of plant, equipment or materials.</p> <p>18 Surface finish of operational area to be maintained.</p> <p>At KM-A wellsite, an additional condition (4) requires that no liquids other than those specified in the application shall be reinjected into the KM-3 well. (Other conditions at this wellsite</p>

¹⁴ Environment Agency guidance is now that this can be 25% of the full capacity of all tanks or 110% of the largest tank – whichever is larger.

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained

	KGS	OHL	Pipelines	Wellsites
			<p>accordance with the requirements of the appropriate authority.</p> <p>(The original consent required that all crossings of rivers were agreed in consultation with the National Rivers Authority (Environment Agency). No soil could be stored in areas liable to flood)</p>	<p>are increased by 1)</p> <p>PK wellsite¹⁵ has different conditions attached –</p> <p>5. Unless otherwise agreed, in writing, with the County Planning Authority, there shall be no:</p> <p>Oil based drilling methods used in strata shallower than, and including, the Corallian Group aquifer.</p> <p>Oil based drilling methods used in strata deeper than the Corallian.</p> <p>6.No potentially contaminating substances should be allowed to enter the groundwater</p> <p>7.If during development dewatering is found to be required, the Environment Agency must be consulted prior to any dewatering taking place.</p> <p>8.Any facilities, above ground for the storage of oils, fuels or chemicals shall be sited on an impervious base and surrounded by impervious walls. The volume of the bunded compound should be at least equivalent to the capacity of the tank plus 10%. All filling points, vents, gauges and sight glasses must be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipe work should be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets should be detailed to discharge into the bund. Such facilities shall be constructed and completed in accordance with plans approved by the Local Planning Authority</p>
Other	Other mitigation includes measures to avoid or prevent potential impacts from occurring by controlling potential sources and pathways to water	Land surrounding the OHL towers continues to be	The pipelines are routinely monitored from the control room at KGS for	The wellsites are managed to ensure surface water and groundwater is protected as part of standard operational practices. In particular, the following regulations and guidance

¹⁵ C3/08/00779/CPO (NY/2008/0490/73) which varied Condition 9 of the original consent that no oil based drilling fluids were to be used.

Table A1 Summary of relevant existing mitigation in place under existing consents, and to be retained

	KGS	OHL	Pipelines	Wellsites
	<p>receptors, for example:</p> <p>The site is lined with a low permeability clay membrane to prevent any permeation of liquid through the site. All chemicals on site would be correctly stored in accordance with Environment Agency guidelines¹⁶ (and in accordance with the mining waste permit and planning condition 6).</p> <p>Ensuring there is no discharge from the site of potentially contaminated water, through routine closure of valves from the perimeter drainage ditch.</p> <p>Routine monitoring of the site is carried out as part of the Environmental Management Plan (EMP) to identify visual signs of pollution, (e.g. ensuring integrity of site surfacing and clay liner, integrity of tanks and bunds, status of perimeter drain). Maintenance is carried out to ensure they remain fully operational and effective. Any faults noted are recorded, action identified and repairs undertaken within a suitable timeframe.</p> <p>Preventing pollution of soil, groundwater or surface water from leaks from vehicles or on-site tanks, by ensuring any vehicles working on site are regularly maintained. Vehicles are not fuelled on site, and any fuelling of equipment is undertaken by trained personnel in appropriate areas on site, with drip trays in place. Double-skinned fuel tanks are used to store fuel.</p> <p>Spill kits are present on site, and staff are trained in spill response as part of the EMP.</p> <p>Any drilling, such as for installing groundwater monitoring boreholes through the clay liner, would</p>	<p>managed as agricultural land, ensuring field drainage etc is appropriate.</p> <p>During maintenance, care is taken to avoid any spillage of fuels onto the ground, and appropriate spill kits are in place. Management of maintenance prevents compaction of soils etc.</p>	<p>unexpected loss of pressure etc which could indicate leakage. The route is also checked physically for signs of any leakage.</p> <p>Maintenance would be carried out in sections of the pipeline with appropriate safeguards to minimise silting onto any watercourses (storing any soils away from watercourses, for example), spillage of chemicals or fuel, compaction of soil increase of flood risk or other potential damage to the water environment or groundwater.</p> <p>Any necessary work within the water environment would be subject to an appropriate flood risk activity environmental</p>	<p>will be followed:</p> <ul style="list-style-type: none"> - Oil and Gas UK Well Life Cycle Integrity Guidelines; - Oil and Gas UK Guidelines for Abandonment of Wells; - Environment Agency Onshore Oil & Gas Sector Guidance; - Borehole Sites and Operations Regulations 1995; and - Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 <p>Borehole design and operation (for example, fluids to be used) would be regulated by the Environment Agency (via environmental permit), Oil and Gas Authority, HSE, Coal Authority and design approved by an accredited Independent Well Examiner prior to drilling.</p> <p>The mitigation measures are design to avoid or prevent potential impacts from occurring by controlling the potential source of release of contaminants and prevent any released from reaching a pathway to a receptor.</p> <p>The company's EMP includes measures to monitor that operations proceed in accordance with these mitigation and management measures, for instance the wellsites are checked on a daily basis for visual signs of pollution (e.g. fuel oil, leakage from perimeter, noticeable silting, checks on integrity of site lining, storage tanks and valves/pipes). If failures or shortfalls within mitigation measures are noted, these are recorded, action identified and undertaken within a suitable timeframe.</p> <p>The wellsites are lined with either a clay lining or geotextile membrane to prevent leakage through the site.</p>

¹⁶ <https://www.gov.uk/guidance/storing-oil-at-a-home-or-business-A3-3>

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	<p>comply with good practice for drilling water wells, as described in the Environment Agency's Guidance on the design and installation of groundwater quality monitoring points (Science Report SC020093).</p> <p>During restoration of the site, a restoration and aftercare plan would be followed to prevent soil damage and pollution of surface and groundwater (for example, silting). Any potentially contaminated aggregate or equipment would be fully removed from site before the clay liner was removed so any residual contamination would not be washed into soil.</p>		<p>permit.</p>	<p>Drainage from the wellsites drains to a drain or interceptor which is isolated from the surrounding environment by a series of valves, and only released once confirmed to be uncontaminated. Any contaminated water or other waste would be removed from site by a licensed waste contractor to a licensed waste facility for reuse, recycling or disposal.</p> <p>Other measures as outlined for KGS will also be followed, relating to storage of chemicals and fuels, fuelling of maintenance vehicles on site etc, and during restoration of the site.</p> <p>Method statements would be produced for all activities that could pose a risk to the water environment and would clearly state what mitigation measures and monitoring requirements should be in place prior to and while the activity is underway.</p> <p>During decommissioning any wells, measures would be undertaken to ensure no inputs of pollutants to groundwater and that there was no subsequent leakage of groundwater, including any gas or other contaminants that this may contain, into the well or to other geological horizons.</p> <p>The wells would be decommissioned with at least two permanent barriers to seal the well. These would be pressure tested to ensure integrity.</p>
Transport				
<p>Planning Conditions</p>	<p>2) Except in an emergency all vehicles entering or leaving the site shall do so via the access road.</p> <p>10) No waste to be removed from the site except by underground pipeline to KM-3 or by covered vehicle or road tanker to permitted disposal facilities or treatment works as appropriate.</p>	<p>n/a</p>	<p>8 Access to the route of the pipelines shall be as approved, except if agreed otherwise with the County Council.</p> <p>9 No works associated with the maintenance of the</p>	<p>3 Access routes to each wellsite are specified. Access roads to be maintained with stone surface. Provision to be made to prevent surface water discharging onto the existing highway.</p> <p>6 Provision to be made for parking, turning, loading and unloading within the site only</p> <p>7 No vehicles over 3 tonnes gross involved in material delivery to enter or leave the wellsites on any Sunday or bank Holiday nor on any other day except Mon-Fri 0700-1900h and Sat 0700-1300h, except in an emergency or with prior written approval of</p>

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			<p>pipelines shall take place on any Sunday or bank Holiday nor on any other day except Mon-Fri 0700-1900h and Sat 0700-1300h, except in an emergency or with prior written approval of the County Council. No vehicles in excess of 1.5 tonnes unladen will be used for works outside these hours.</p>	<p>the County Council.</p> <p>Planning consent for KM-B has an additional condition (4) that the access road shall be maintained throughout the duration of the development (separate from Condition 3). All other conditions are numbered one higher.</p> <p>PK wellsite has different conditions attached –</p> <p>3. There shall be no access or egress between the highway and the application site by any vehicles other than via the existing access with the public highway at the A169 Malton Road. The access shall be maintained in a safe manner which shall include the repair of any damage to the existing adopted highway occurring during construction</p> <p>4. Except with the prior approval of the County Planning Authority during construction works there shall be no: (a) Goods Vehicles exceeding 7.5 tonnes permitted to arrive, depart, be loaded or unloaded on Sunday or a Bank Holiday nor at any time, except between the hours of 07.00 to 19.00 on Mondays to Fridays and 07.00 to 13.00 on Saturdays.</p>
Other	<p>The Traffic Management Plan (TMP) includes details of specific route management requirements, driver behaviour requirements and management measures and parking strategies for the site.</p>	<p>Only vehicles associated with routine maintenance and eventual decommissioning would be required. Maintenance vehicles would follow the overall TMP. A decommissioning plan would be produced.</p>	<p>Only vehicles associated with routine maintenance and eventual decommissioning would be required. Maintenance vehicles would follow the overall TMP. A decommissioning plan would be produced.</p>	<p>The Traffic Management Plan (TMP) includes details of specific route management requirements, driver behaviour requirements and management measures and parking strategies for the wellsites.</p>

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Landscape and visual				
Planning Conditions	<p>3& 4) No buildings or structures will be constructed outside the site, or be greater than 4m in height (other than those approved) shall be constructed on the site (without planning permission being granted).</p> <p>7) No additional external lighting shall be installed except in accordance with the approved details.</p> <p>11) Restoration of the site to agricultural use and/or woodland shall be undertaken in accordance with a detailed scheme submitted to and approved in writing by the local planning authority (Ryedale DC).</p>	<p>1 Land to be reinstated to former condition.</p> <p>2 Within 6 months of decommissioning the OHL the towers shall be removed (in agreement with landowner) and the remaining infrastructure to be removed or shortened (as appropriate)</p>	<p>1/2 Land to be reinstated within 18 months of cessation of operation of KGS, or within 18 months of cessation of gas production from any wellsite (or as soon as practicable thereafter/ in conjunction with restoration)</p> <p>6 Fences along the line of the pipeline to be periodically inspected and maintained.</p> <p>7 Landscaping undertaken (in accordance with 1994 application) to be maintained for the duration of development</p>	<p>2 All buildings and plant to be removed within 6 months of cessation of gas production or cessation of electricity production at KGS (whichever is sooner) and site to be restored.</p> <p>4/ 5 Landscaping fencing and gating to be maintained</p> <p>(Marishes consent in addition states that planting shall take place in the first available planting season, and a tree or plant which dies or is damaged or diseased in 5 years to be replaced).</p> <p>11 No buildings, plant or machinery should be placed on the site without the approval of the planning authority.</p> <p>14 No external lighting except in accordance with a scheme agreed with the planning authority.</p> <p>17 All equipment and buildings to be coloured in accordance with application details, and maintained, including for any replacements.</p> <p>19 Restoration to agriculture including capping/backfilling the well, removal of imported materials, soil ripping, replacement of soils and subsoils, and agreed aftercare measures. Any land drainage to be repaired. Only landscaping undertaken for screening (woodland) to be retained. Highway verge and access track also to be restored.</p> <p>PK wellsite numbering of conditions is different, but nature of conditions is similar.</p>
Other	<p>Presence of mature belt of vegetation around KGS which will be maintained, to screen the site within the landscape.</p> <p>Use of existing landscape and built features (for example, the railway embankments) to screen the site.</p>	<p>The OHL is located within the existing landscape, amongst other tall infrastructure, including the</p>	<p>Underground nature of the pipeline, with agricultural land and other features (roads, railway etc) above avoids all but very localised visual</p>	<p>Vegetation is present to screen the wellsites (at least in part), which is now mature. Fencing and bunding around the sites ensures minimal visibility from surrounding roads and residences.</p> <p>Wellsites are located at distance to the nearest residential receptors, with intervening screening vegetation.</p>

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		regional transmission line, maltings plant, and infrastructure associated with the railway.	and landscape impact (marker pegs etc).	Apart from during drilling/ workovers, all plant on the wellsites is low level and does not break the skyline over the surrounding trees.
Ecology				
Other	<p>Specific mitigation will be outlined in the planning application. Good practice on site, including measures in place to protect air quality and water quality, and the lighting scheme in place to avoid overspill will also benefit ecological receptors in the vicinity.</p> <p>Maintenance of screening vegetation will provide woodland habitat in the area.</p> <p>Any hedge trimming required to maintain the access track or similar will be undertaken outside the bird breeding season (i.e. avoiding March – August).</p>	<p>No specific mitigation is proposed, though the presence of the OHL and tower bases (largely along a field margin) may provide a corridor of favourable vegetation within an agricultural landscape.</p>	<p>Original consent required that no development took place until a survey of flora and fauna was carried out, including specific attention to possible presence of great crested newts, badgers, otters and water voles, and a survey of hedgerow species and trees was carried out.</p>	<p>Specific mitigation will be outlined in the planning application. Good practice on site, including measures in place to protect air quality and water quality, and the lighting scheme in place to avoid overspill will also benefit ecological receptors in the vicinity.</p> <p>Maintenance of screening vegetation will provide woodland habitat in the area.</p> <p>Any hedge trimming required to maintain the access tracks or similar will be undertaken outside the bird breeding season (i.e. avoiding March – August).</p>