

**REPORT TO THE PLANNING REGULATORY BOARD TO BE HELD ON THE  
25<sup>TH</sup> JANUARY, 2018**

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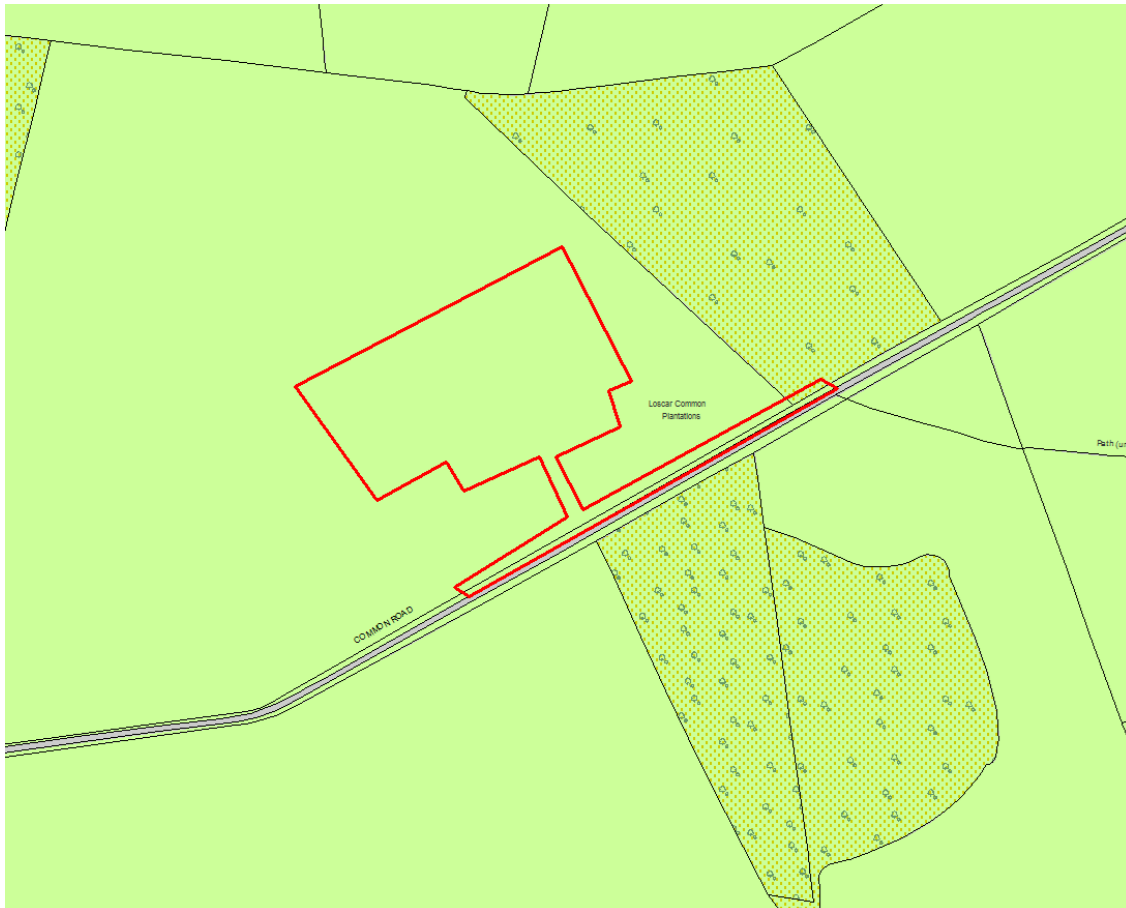
<b>Application Number</b>	<b>RB2017/0805</b>
<b>Proposal and Location</b>	Construction of a well site including the creation of a new access track, mobilisation of drilling, ancillary equipment and contractor welfare facilities to drill and pressure transient test a vertical hydrocarbon exploratory core well and mobilisation of workover rig, listening well operations, and retention of the site and wellhead assembly gear for a temporary period of 5 years on land adjacent to Common Road, Harthill, Rotherham, S26 7XH.
<b>Recommendation</b>	<b>That Planning Board indicate that they are disposed to Refuse the application</b>

### **Introduction**

The applicant has appealed against non-determination of the application and the Planning Inspectorate will therefore make the final decision on the proposals. The Council is required to make its resolution on the application to the Planning Inspectorate. This report sets out the main planning issues associated with the application.

This application is being presented to Planning Board as the site area exceeds the threshold for being considered as a delegated application. In addition there is significant public interest in this application.

No hydraulic fracturing (fracking) is proposed as part of this planning application. This application only seeks permission for an exploratory vertical core well and associated geological testing and logging.



## Site Description & Location

The proposed exploratory well site is located in the south of the Rotherham Borough between Harthill and Thorpe Salvin. The site is approximately 1km east of the centre of the village of Harthill and 0.7km from the nearest houses located on Serlby Lane.

The application site lies on the northern side of Common Road, a narrow single track road which connects Harthill village with Packman Lane. The site lies immediately to the west of Loscar Common Plantations Wood.

The planning application boundary comprises a roughly rectangular area which is approximately 1.40 ha in area. Access is proposed to be taken from Common Road which is approximately 30m to the south of the main site. This secondary road provides access to the main road network to the south at the A619, Whitwell Common.

The site lies within the lowest flood risk category (Zone 1) on Environment Agency maps and does not lie within a locally identified surface water flood risk area.

A public footpath (Harthill Footpath No. 23) runs close to the eastern and northern boundaries of the site.

## Background

The surface of the site does not have any previous planning history. Applications to work underground coal seams in the wider area have taken place, and this is discussed in more detail in the report appraisal.

The Secretary of State for Energy and Climate Change previously issued Petroleum Exploration and Development Licences (PEDL) for a defined geographical area and specified period of time, although responsibility for this now lies with the Oil and Gas Authority (OGA) as an executive agency sponsored by the newly formed Department for Business, Energy and Industrial Strategy (DBEIS). The licences give exclusive rights for the licensee to “search, bore for and get” petroleum. However, the licences do not in their own right confer on the licensee any consent, permission or authorisation to carry out development activity.

INEOS was awarded PEDL 304 by the Department for Business, Energy & Industrial Strategy (BEIS) (formally the Department of Energy and Climate Change - DECC) following the 14th Licencing Round.

The hydrocarbon extraction process involves three distinct phases. Only the first stage is being considered in this application:

1. Exploration: Through the drilling of a vertical well. This is the stage proposed by this planning application;

2. Appraisal: Through gas flow testing following horizontal drilling and hydraulic fracturing either from existing core well sites or new sites (3D seismic data will be acquired to enable placement of wells involving hydraulic fracturing).

3. Production: Through drilling of horizontal wells from multi-well pads followed by hydraulic fracturing, production, decommissioning and restoration.

Planning permission is required for each phase, with the cumulative environmental effects of combined applications at different stages being considered each time an application is made.

The applicants (INEOS) have also submitted a planning application for a similar exploratory well development in Marsh Lane, north east Derbyshire, approximately 11km to the south west of this site. This application is currently undetermined and is being considered by Derbyshire County Council. An appeal against non-determination has been submitted in respect of that application which will also be considered by the Planning Inspectorate.

The applicants have also submitted a planning application for a similar exploratory well development off Dinnington Road, close to Woodsetts village (reference RB2017/1577) within the boundaries of RMBC. This application is as yet undetermined.

#### Screening Opinion:

Following an initial Screening Request, the Council determined that the planning application at Harthill did not represent Environmental Impact Assessment (EIA) development. The applicant also submitted a Screening Request to the Secretary of State (through the National Planning Casework Unit - NPCU). The NPCU also confirmed that the application did not represent EIA development. This does not prevent the need to submit supporting documentation with the planning application to address environmental issues, which are discussed further below.

#### Seismic surveying:

INEOS have also requested to carry out site surveying work of the surface of the site under a separate planning enquiry. In the opinion of the Council the proposed seismic surveys were considered permitted development under the General Permitted Development Order Part 17 Mining and mineral exploration, Class K. Accordingly there was no requirement for the formal submission of a planning application for this element. This was formally indicated via a letter of 26 May 2017.

The Environment Agency have also confirmed that a Standard Rules Permit has been issued for the site (ref EPR/FB3102TG) in July 2017.

## **Proposal**

The proposal is to drill a vertical core well to a depth of approximately 2,800m, and to recover cores of the target geological formations. Subsurface data would be collected during the drilling process and the core samples would be removed from site for testing of the potential to produce hydrocarbons. Testing of the borehole will then be undertaken, including a "Pressure Transient Test" which checks whether the rocks have enough pressure naturally to push gas into the borehole. Once drilled and cored, the well would be suspended for a period of time, for potential later use as a "listening well" during the potential development of other sites in the area.

The applicant has indicated that construction workers will be taken to the site by minibus, so there will be no private parking of vehicles belonging to workers on the site during working shifts.

Planning permission is sought for a temporary period of five years and during this time the proposed development would comprise five phases. These phases can be briefly summarised as follows:

### Stage 1: Site development and establishment

Estimated duration: 3 months

Working hours: 7am-7pm Monday-Friday; 7am-1pm Saturday

Operations include:

- Mobilisation– this would involve any necessary pre-commencement surveys, including geotechnical surveys, site investigation surveys, road construction surveys and environmental surveys. Any construction equipment would also be brought to site during mobilisation.
- Access Tracks – formal access construction including visibility splays and geotextile membrane to be covered with aggregate and on-site parking provision.
- Site Clearance – the site would cover 120m by 95m (1.14 hectares). Vegetation clearance and hedge trimming, topsoil/subsoil removal would occur.
- Site Development and Lining – impermeable site liner trench and subsequent appropriate infilling at foot of topsoil bund to be installed immediately around the drill site. The bund would be approximately 2m high on the perimeter of the site created from topsoil from within the site. The bund would assist with visual and noise screening.
- Development of Drainage – perimeter water storage pipe installation to be fed into from across site to catch any potential surface water runoff. This would then be transported off site.
- Development of Site Accommodation – cabins stacked (up to two high) on top of each other would be placed at the perimeter of the site.

- Installation of Monitoring Boreholes – groundwater monitoring boreholes installed, in liaison with the Environment Agency (EA), under permitted development rights.
- Construction of Well Cellar – a well cellar (2.5m diameter and 3m deep) would be excavated, from which the well would be drilled. A conductor installation rig up to 10m in height would be set in the top section of the well bore. The conductor rig would be a smaller drilling rig designed to drill to shallower depths. This would also allow for greater flexibility of drilling and reducing the amount of time the main rig is in place.
- Demobilisation – grass seeded geotextile membrane introduced to soil bunds and security measures and lighting installed around site. Demobilisation of construction equipment in preparation for mobilising main drilling rig and equipment.

### Stage 2: Drilling, coring and testing

Estimated Duration: 5 months

Working hours: 24-hour for drilling; 7am-7pm Monday-Friday; 7am-1pm Saturday for mobilisation, deliveries and Pressure Transient Test.

#### Operations:

- Mobilisation of drill rig and associated equipment including temporary mobile lighting (up to 9m in height).
- Drill rig, drill pipe and water and mud pumps brought onto site
- Drilling and Coring- well drilled to a depth of approximately 2,800m with a drill rig up to 60m in height. The well would be logged during drilling and cores would be sent off site for laboratory analysis. No flow testing would be undertaken.
- Pressure Transient Test to establish reservoir properties
- Main rig replaced by 32m workover rig
- Well perforated and packer (a device to seal the borehole) lowered into well
- 10m<sup>3</sup> (maximum) potassium chloride solution (2-4%) squeezed into formation at target zone at pressure
- Pressure monitored for two weeks
- Plug removed
- Process repeated in up to two additional target zones
- Workover rig and waste removed
- Demobilisation – drill rig and ancillary equipment would be removed from site including waste from drilling and coring process (drill cuttings and waste drill muds).

INEOS indicates that standard well safety equipment would be present on site during drilling, including a blow-out preventer, vent for emergency venting of gas, and methane monitoring.

### Stage 3: Establishment as listening well and suspension

Estimated duration: 1 week

Working hours: 7am-7pm Monday-Friday; 7am-1pm Saturday

#### Operations:

- Flange and well monitoring pressure gauge fitted to well
- Well sealed using wellhead Christmas tree or wireline blow out preventer
- Steel protector cage fitted over wellhead

- Remaining cabins removed
- Routine visits would check the pipework, site surface, fencing and security, drainage, wellhead structure and pressure monitoring
- 32m workover rig may be brought back for maintenance.

#### Stage 3a: Possible Workover of the Suspended Well

Up to one month as required. This stage is included as a contingency and would only be required if the well required to be re-entered for maintenance or similar purposes. However, the planning application requests for the potential to undertake these operations to allow a rapid deployment of the drill rig if required.

#### Stage 4: Listening well operations

Estimated duration: 3 weeks

Working hours: 7am-7pm Monday-Friday; 7am-1pm Saturday

This work would be carried out to undertake baseline monitoring.

Activities during Stage 4 would only take place to undertake baseline monitoring or when another well is hydraulically fractured, subject to such a separate consent for that separate activity being granted within the period of planning consent for this well. Activities during Phase 4 would include:

Operations:

- Mobilisation of wireline truck, 30 tonne mobile crane (35m maximum), mast, elevated work platform and temporary welfare facilities
- Placement of geophones (small seismic receivers) on wireline inside reservoir casing
- Demobilisation

#### Stage 5: Abandonment and restoration

Estimated duration: 6 weeks

Working hours: 7am-7pm Monday-Friday; 7am-1pm Saturday

Operations

- Plugging and abandoning the well. Decommissioning of the well would be undertaken in accordance with Oil and Gas UK Guidelines on Well Abandonment and according to an abandonment plan to be agreed with the Environment Agency, Health and Safety Executive (HSE) and an independent Well Examiner.
- Wellhead removed and casing/cement cut to 3m below ground
- 32m workover rig required for a short period during the 1 month abandonment and restoration stage.
- Removal of site equipment and surfacing. The site would be fenced with temporary Heras fencing to allow the permanent fencing and security fencing to be removed.
- Restoration
  - Soil in bunds levelled across surface
  - Field drainage re-developed if required
  - Site reseeded for agriculture
  - Access tracks and road amendments (junction amendments or passing place improvements) would also be restored as agreed with the landowner and Highways Authority, or retained for continued use, subject to any necessary further planning consent.
- Aftercare

### Future Application Proposals:

This application only seeks approval for the drilling, testing, suspension, decommissioning and restoration of the proposed well, including possible use as a listening well. This application would not authorise any other future activities on this site.

Whilst the application proposals are not considered to require a formal Environmental Impact Assessment, it is accompanied by an Environmental Report and this can be summarised into the following main areas:

### Noise

- While noise from construction may be audible at times, it is not expected to exceed the assessment criteria. Noise from traffic during the construction period will be low.
- Drilling and coring activities are expected to be below the PPG 42 dB LAeq (free-field) noise limit for night at the nearest receptor (houses along Serlby Lane). Daytime noise levels during drilling will also be well below the PPG absolute noise limit of 55 dB LAeq and the limit for daytime and evening based on background plus 10 dB(A) at the nearest receptor.
- As the noise will be temporary and below the threshold levels, there is not anticipated to be an adverse effect on quality of life.
- There are no anticipated impacts that would arise due to ground borne vibration resulting directly from the drilling operations or during construction.

### Traffic and Transport

- The traffic and transport assessment considered the access to the site and the impact of the proposal on traffic flows and highway safety.
- Following a route assessment of the surrounding road network against a range of criteria, a recommended route of approximately 9.5km from the M1 motorway to the site has been proposed. This route exits the M1 motorway at Junction 30 and follows the trunk road network (A619 Worksop Road) between the M1 and Norton. The remaining 4.5km of the route is undertaken on Bondhay Lane, Packman Lane and Common Road. There are very few (less than 5) residential dwellings along this route to the site.
- Access to the site will be provided from Common Road via a priority junction. The speed limit of Common Road is 60 mph although vehicles are unlikely to achieve this speed due to the width and nature of the road. INEOS has undertaken speed surveys which suggests that most vehicles travel at around 32mph. Notwithstanding this, the site access junction has been designed in accordance with Design Manual for Roads and Bridges as well as giving consideration to the existing precedence on the highway network. The visibility requirement of 4.5m x 160 m is achievable in both directions along Common Road.
- In order to consider the effect of traffic generated by the proposal, baseline traffic data was collected from three points on the local highway network. The traffic analysis assessed the percentage change from baseline due to the peak vehicle movements generated by the project (70 total daily movements with 60 HGV movements, which occur for a period during site development and establishment and the drilling, coring and pressure transient testing stage).
- The assessment concluded that the proposal will not have a material impact on the highway network that will be utilised as part of the route. The maximum



impact of the development traffic on A619 Worksop Road is less than 1% increase over baseline which is clearly below the 10% threshold set out in the Guidelines for the Environmental Assessment of Road Traffic (Institute for Environmental Assessment) for when separate traffic environmental assessments should be undertaken. The impact of the proposal traffic on Bondhay Lane and Common Road exceeds the 10% threshold, however it is considered that due to the low level baseline data a route management plan providing formal passing places and other traffic management measures would be sufficient to mitigate any impact of the development.

- A Route Management Strategy (RMS) and Traffic Management Plan (TMP) will be developed and implemented, following consultation with the Local Highway Authority, to manage vehicle movements to site. A draft TMP is included in the Environmental Report.
- Based on the assessment undertaken traffic and transport should not be considered opposing factors in granting planning permission.

#### Proposed Mitigation:

The proposed mitigation is largely embedded into the design of the proposed development. However, a Draft Traffic Management Plan has been prepared which includes details of the route management, driver behaviour and parking strategies for the site.

An additional Transport Addendum was submitted and can be summarised as follows:

- At all times escort vehicles, on site logistics, banksmen and our security team will be in two way radio communication.
- All vehicles must use the designated route to and from site.
- Vehicles must not approach site without direct instruction from onsite logistics.
- Landowners along the route likely to be farming while the operations are at their peak will be contacted by letter to inform them of the general timescale for the operation and to notify them that convoys of vehicles will be passing their fields infrequently and to ask for their co-operation in ensuring INEOS' compliance with the TMP and providing for the safety of road users by not entering a route section while convoys are passing.
- The route from the A619 to site is approximately 2.7 miles long and is estimated to take 6 minutes in normal driving conditions.
- Speed limits
  - Appropriate speeds up to a maximum of 30mph will be applied for site traffic between Bondhay Lane between its junction with the A619 and the junction with Gipsyhill Lane.
  - Appropriate speeds up to a maximum of 20mph will be applied for site traffic from the Bondhay Lane junction with Gipsyhill Lane until the site entrance.
- Banksmen
  - All banksmen must wear high visibility clothing and use stop/go signs to control traffic.
  - Banksmen will have access to welfare facilities at the staging area and at the drill site.
  - Banksmen will travel with the convoy and be deployed as needed along the route
- Vulnerable users: General approach

- All journeys to site from INEOS controlled staging areas will commence with a briefing on how the journey will be managed, including information on how to manage vulnerable users along the route.
- When a convoy is approaching the route will be cleared in sections. In the event that any vulnerable road users are unaware of the approaching convoy the lead escort vehicle will be responsible for ensuring the convoy can pass other road users safely.
- Vulnerable users will be allowed to leave the section if they are likely to achieve this before the convoy begins in movement, or they will be directed to the nearest appropriate passing place and asked to remain in situ until the convoy passes. Banksman will direct vulnerable road users to the designated passing places.
- It will be explained to vulnerable users remaining on any route section why this is necessary and that they should abide by the instructions of the escort vehicle in order to ensure their safety.
- The users will also be informed of the length of the convoy and how to identify that the convoy has passed to enable them to proceed with their journey.
- The lead escort vehicle will maintain radio contact with the escort vehicle accompanying the convoy and will inform them of any vulnerable users likely to be on the route section, the type of user to expect (including whether there may be equestrians or pedestrians that require particular care in passing) and their location along the section.
- The escort vehicle travelling with the convoy will act as the “eyes and ears” of the convoy. It will travel at a short distance in front of the vehicle(s) to allow communication with any vulnerable users and to ensure that they remain in a safe place as the convoy passes.
- Methodology Convoy of HGV vehicles – 2-8 Vehicles
- Methodology Abnormal load – 1 Vehicle
- Methodology for a Single HGV site during Stages 1,2,3a,4,5
- Site maintenance
  - During the maintenance stage of the development there will be a small number of vehicles to and from site. This traffic will mostly consist of small tankers to remove run off rainwater from the catchment tanks on site. These movements will be infrequent and on an “as required” basis. The volume of these movements are the equivalent of the current unrestricted HGV use of this route. The size of the tanker vehicles will be kept to a reduced size to minimise their potential impact on other road users.
  - During the Maintenance stage there will be one tanker per month to remove surface run off water.

Further transport information has been submitted, following concerns raised by officers over the suitability of the proposed access to the site, and these include the following additional information:

A further Transport Addendum (2) was submitted on 1<sup>st</sup> December, following concerns raised by officers over the suitability of the proposed access to the site, and these include the following additional information:

1. General Information
2. Methodology Convoy of HGV's 2-8 vehicles
3. Methodology Abnormal Load 1 vehicle
4. Methodology Single HGV during Stages 1, 2, 3a, 4, 5
5. Stage 3 – Site maintenance

## Appendix 1 – Management Strategy Plans

### Ecology

- An ecological assessment (extended Phase 1 habitat survey) of the site and surrounding area was carried out in January 2017 to identify potential ecological constraints and provide initial recommendations for avoidance of impacts and mitigation measures, as well as further ecological investigations where necessary.
- The site is situated within the Local Wildlife Site (Loscar Common). However, the area affected by the proposals accounts for approximately 0.5% of the total area of the LWS and this level of loss for the 5 year period is not considered to be significant.
- In addition, the effect of the proposal will be temporary and there is potential for enhancement during Stage 5 Decommissioning and Restoration. Enhancement recommendations, as encouraged through the NPPF, include native hedgerow planting along the hedgerows to infill gaps at the southern site boundary (native fruit and berry bearing species such as hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and guelder rose *Viburnum opulus* could be included); and the field boundaries could be planted with species rich tussocky grassland to provide habitat for a wide range of species including corn bunting.
- The surveys identified that the woodland to the east and south of the site could provide suitable habitat for badgers and bats (and common pipistrelle were identified as part of the desk study). The site design has been developed to maintain an offset of over 30 m from the drill pad with the lighting designed to maintain a dark zone between the site and the woodland and hedgerow habitats. The proposed design uses an existing access point to the field on the southern boundary; this access point will need to be widened via the removal and trimming of a section of the hedgerow.
- The habitats that will be temporarily impacted are of low ecological value and taking account of standard mitigation and pre-construction surveys no further detailed surveys are required.
- Consequently ecology and biodiversity should not be considered opposing factors in granting planning permission. Proposed Mitigation Other than the creation of the 30 m buffer zone, which is built into the scheme design, the ecological surveys confirm that mitigation is not required. The proposals will comply with the good practice recommendations set out in the Environment Report which include compliance with wildlife legislation and relevant planning policy.

Additional ecological supporting information (a hedgerow and bat survey) have been submitted at the request of the Council's Ecologist.

### Landscape and Visual

- The sensitivity of the site to the proposal is considered to be medium, and the sensitivity of the wider Landscape Character Type is also considered to be medium.
- The impacts of the proposed development can be summarised as follows: During site development and establishment (Stage 1), substantial effects are predicted on the landscape of the site and areas of agricultural land up to 1 km to

the southwest of the site, falling to low or negligible beyond 1.5 km and across the wider character area. However, for the short period of this stage when the 32m high conductor / surface rig will be present on site, substantial effects will affect the site and areas to the southwest extending up to a maximum of 1 km. Minor or negligible effects are expected within the wider landscape beyond 1.5 km. These effects, however, will be experienced for a short time period.

- During drilling and coring and pressure transient testing (Stage 2), the main activity with the potential to affect landscape character will be the erection and 24-hour operation of the drilling rig (up to 60 m high) with 15 m drill sub-structure and associated lighting. Substantial effects are predicted for the site, and for parts of the wider area located to the southwest of the site and extending up to a maximum of 1 km. In other directions, and beyond this distance, the effect on the wider landscape of the area will be moderate and lowering to minor beyond 2 km and minor or negligible beyond 3 km.
- During maintenance of the site (Stage 3), the effects on the site will be minor, and effects on the wider landscape will be negligible. If a workover rig of up to 32 m high is required during the possible workover of the suspended well (Stage 3a), or during the listening well stage (Stage 4), substantial effects will affect the site and areas to the southwest extending up to a maximum of 1 km. Minor or negligible effects are expected within the wider landscape beyond 1.5 km. These effects, however, will be experienced for short time period of up to three weeks.
- During the listening well stage (Stage 4), if a workover rig or crane is not required, the effects on the site will be moderate, and effects on the wider landscape will be negligible.
- Decommissioning and restoration (Stage 5) effects are anticipated to be substantial within the site and areas of agricultural land up to 1 km to the southwest of the site, falling to low or negligible beyond 1.5 km and across the wider LCA. This is primarily due to the presence of a smaller rig used for decommissioning purposes.
- Based on the viewpoint assessment undertaken, and with regard to the extent of localised screening, moderate or substantial effects on views may occur during all stages of the proposal. These effects, however, will be experienced only by higher-sensitivity receptors within approximately 1 km of the site. This includes residents of houses along 24 the south eastern edge of Harthill. Residents of nearby farmsteads including Carr Farm, Grange Farm, and Loscar Farm and the village of Thorpe Salvin will experience, at most, moderate effects during the drilling and coring and pressure transient test (Stage 2).
- Substantial visual effects may also be experienced by users of Common Road and Harthill Field Road to the immediate southeast of the site. During the drilling and coring and pressure transient test (Stage 2) operations the effect of the proposal on views will be more widespread. Although the drilling rig is likely to be partially screened by localised screening and woodland, up to substantial visual effects are predicted during daylight and night time hours.
- At greater distances it is considered likely that only the drilling and coring and pressure transient test stage of the proposal will be noticeable in views. Due to the level of screening in the landscape, the distribution of receptors, and the temporary nature of the stage, visual effects are not predicted to be greater than minor at distances over 2 km from the site.
- Following the decommissioning and restoration activities, no above ground features of the well will remain, and all impacts on visual amenity will cease. The permanent restoration of the site to its original agricultural use is considered to

be a neutral effect on views. All the above effects are therefore considered to be temporary.

#### Proposed Mitigation:

The proposed mitigation is largely embedded into the design of the proposed development. For instance, the site is located on an elevated plateau with intervening land form that helps to screen many views, and the scheme has been designed to avoid the loss of any notable landscape features. During Stages 1 to 5 of the proposal, the creation and maintenance of bunds from stripped topsoil and subsoil will further reduce visibility of low-level ground works, equipment and other elements of the proposal. During the Decommissioning and Restoration stage of the proposal, the site will be restored to its original agricultural use, and no permanent above-ground features will remain in the landscape once the proposal is complete.

#### Surface Water and Flooding

- The site is not within an area at risk from flooding and is designed to be self-contained with regards to surface water runoff. The nearest surface water course is Bondhay Dyke 530 m south of the site.
- The environmental assessment concluded: A neutral effect on the water quality of nearby watercourses. A neutral effect on the biodiversity of the surrounding area, including designated areas, as these are sufficiently distant from the proposal, and are not expected to be affected by the negligible magnitude of impacts to surface watercourses from the proposal. A neutral effect on pressures on water resources in the surrounding area, due to the non-intensive nature of on-site activities. A neutral effect on recreational uses within the surrounding area due to these being concentrated in areas greater than 2.9 km distant from the proposal.
- Flooding, residual and climate change impacts have been assessed as negligible due to Environment Agency flood maps showing the proposal as having a 'Very Low' risk of flooding from fluvial and pluvial water sources and based on the topography of the site and surrounding area. The proposal is not anticipated to result in any material increase in flood risk elsewhere.

#### Proposed Mitigation:

The proposed mitigation is largely embedded into the design of the proposed development. In particular the following mitigation measures have been designed to reduce on-site flood risk and flood risk elsewhere:

- Site drainage systems will be sized to withstand a 1 in 100 year flood event;
- The site is located to minimise risk of groundwater flooding;
- Field drainage systems around the site will be maintained;
- Any water falling onto site would feed into the site perimeter drain and be removed by a licensed waste contractor for treatment and disposal as appropriate. During Stage 5 (decommissioning and restoration) mitigation measures will aim to prevent risk of site flooding or increasing flood risk elsewhere, through restoration and soil management to maintain effective field drainage to prevent ponding.

#### Hydrogeology and groundwater

- A neutral effect on the shallow groundwater quality of the surrounding area due to the non-intensive nature of the on-site activities.
- A neutral impact on the groundwater quality, due to the drilling and well design using multiple casing solutions to seal off aquifer sections during drilling and well operation.
- A neutral effect on groundwater quality due to the sealing of target testing zones by multiple casing solutions to seal off aquifer sections during well testing activities.
- A neutral effect on the transport and dilution capability of groundwater aquifers within the local area.
- A neutral effect on the biodiversity of the surrounding area including designated areas. The on-site activities are not expected to affect groundwater availability or quality.
- A neutral impact on pressures on water resources in the surrounding area, due to the non-intensive nature of on-site activities.

#### Proposed Mitigation:

The proposed mitigation is largely embedded into the design and method of constructing the proposed development. These include:

- Appropriate well design would be used, including appropriate casing, engineering cement design and use of a closed loop drilling fluid (mud) system to allow gains and losses to be monitored. Testing of integrity of each string of casing through pressure testing;
- Borehole design would be approved by the Environment Agency, OGA, HSE, and an accredited independent well examiner prior to drilling;
- Water for the drilling process would be contained within a closed system with any potential excess water from the drilling process being transported off site in suitable tankers;
- The geomembrane and “closed loop” drainage system would be maintained to ensure all liquids remained on the site for removal by a licensed waste contractor, and treatment prior to disposal if required;
- Frequent checking of integrity of site surface and drainage system;
- Cement batching/mixing for well cement would take place in a dedicated area;
- Rigs would be refuelled from dedicated tanks, which would be filled directly from fuel tankers that deliver to the site. This would be undertaken in the hardstanding area to ensure any spillage would drain to the impermeable cellar rather than the perimeter drainage pipe;
- Drilling fluids (muds) would be stored in a mud tank with a closed-loop system to prevent leakage;
- Prevention of groundwater pollution from spillages and the handling/management of drilling fluids and cuttings;
- Prevention of the escape of drilling fluids, gas and formation fluids into groundwater by good well design. The proposal will also adhere to: UK Onshore Shale Gas Well Guidelines for Well Design and Construction; 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; Guidance for Pollution Prevention (GPPs) for good practice, and; HSE Borehole Sites and Operations Regulations 1996.

- The INEOS HSE representative will ensure operations proceed in accordance with management plans and planning conditions, for instance the site and surrounding area would be checked daily for visual signs of pollution (e.g. fuel oil, leakage from perimeter, noticeable silting).

### Archaeology and Cultural Heritage

- The baseline assessment highlighted the presence of 15 designated and 26 non designated heritage assets within the study area. These designated heritage assets are mostly medium to high value listed buildings located within Harthill and Thorpe Salvin. There are no designated standing buildings within 1 km of the site.
- The historic centre of Harthill lies approximately 1.5 km to the west of the site and the historic centre of Thorpe Salvin approximately 1.6 km to the northeast of the site.
- The visual impact assessment shows that the project is unlikely to be visible from the listed and non-designated standing heritage buildings within the historic centres of Harthill and Thorpe Salvin. Areas of mature woodland located between the site and the villages will provide visual screening in most instances. The temporary nature of the drilling and overall development means the project is not considered to have a long term effect on the setting of these features.
- A review of aerial images of the site shows the presence of linear features. A geophysical survey was undertaken which confirmed the presence and extent of these 28 features. Their nature and origin remains uncertain; they could be archaeological, redundant field boundaries and land drainage of several periods, or they may prove to be geological.
- A programme of trial trenching is being planned and agreed with the South Yorkshire Archaeologist to investigate these geophysical anomalies.

### Proposed Mitigation:

Any material found during construction will be recorded and a report will be sent to South Yorkshire Archaeological Society. The effects of the development on the setting of above ground heritage assets are both limited and temporary in nature and therefore aren't considered to be significantly adverse. No mitigation is proposed on this basis.

### Air Quality

- Emissions to air will include vehicle and equipment exhaust fumes, dust and potentially hydrocarbon release (methane) during the drilling period.
- Road traffic associated with the proposal would produce emissions to air during the temporary construction and drilling phases, similar to any construction site.
- On-site generators and the drilling rig (both diesel powered) would produce temporary, localised emissions to air. Generators would be sized appropriately for site energy requirements and would be efficient, with emissions reduced as far as possible. The majority of the required generators would be present on the site for less than 6 months, although a single generator will be required throughout the operating period.
- The 60m rig will be on site for less around 3 months during the 5 month Stage 2 operations. Dust from site preparation, construction and vehicle passage on access roads will be controlled with standard dust-control measures and is not considered likely to present a nuisance to site neighbours.

- As the well is only proposed to be cored and subject to a pressure transient test, there is very limited potential for hydrocarbon gas (methane) to be released during the drilling process.
- The scale of the proposal is such that significant effects to air quality are not anticipated. The site is not within an Air Quality Management Area and so is not close to exceeding any air quality objective levels.

### Existing Contamination

- The site is located on and surrounded by arable land. Examination of historical maps shows that there are no potentially contaminative historic land-uses on-site, although there is a historic landfill near to the site which will not be affected by the proposed development.

### Human Health

- The proposal is for an exploratory core well only. Low risk activities are recognised by the Environment Agency through “Standard Rules” permits. These permits set out a number of operational controls which INEOS will need to comply with. The proposed activities comply with the operational and locational criteria necessary to qualify for a standard rule environmental permit. On this basis it is considered that the risk to human health is negligible.

### Climate Change

- The potential contribution of the proposal to national greenhouse gas emissions would be negligible. Climate change emissions associated with the proposal are expected to be limited primarily to those from vehicles and drilling equipment, which are considered to be small and not significant.

### Statement of Community Involvement

A Statement of Community Involvement has also been submitted with the application and this can be summarised as follows:

- INEOS held “Town Hall” meetings in May and November 2016 and invited Parish and Town Councils to send representatives to attend on their behalf. A total of 71 Parish and Town councillors attended the three meetings in the region.
- INEOS held a public exhibition event in advance of submitting the planning application at Harthill Village Hall. The exhibition was advertised in advance via hand delivered letters to 1,083 nearby local residents in Harthill, Thorpe Salvin, Netherthorpe and Kiveton Park surrounding areas. Adverts were also placed in the Rotherham Advertiser and updates were provided on INEOS’ consultation website.
- The exhibition was held on Thursday 11 May 2017 (between 2pm and 7.30pm).
- The exhibition was attended by 114 members of the public and BBC Nottingham also attended.
- The public ranked the importance of the impacts, though these rankings were inconclusive. In general operational safety on site, vehicle movements to and from the site and the protection of ground water aquifers were considered more critical.



## **Development Plan Allocation and Policy**

The Core Strategy was adopted by the Council on the 10th September 2014 and forms part of Rotherham's Local Plan together with 'saved' policies from the Unitary Development Plan (UDP) (noted in Appendix B of the Core Strategy). The Rotherham Local Plan 'Publication Sites and Policies' was published in September 2015.

The application site is allocated for Green Belt purposes in the UDP and is within an Area of High Landscape Value. In addition, there are areas of Known Interest Outside Protected Sites close to the site (in the form of Loscar Common Plantations to the east and south and Crow Wood to the north west). The trees within Crow Wood are protected by a Tree Preservation Order.

The application site is also allocated for Green Belt purposes on the Rotherham Local Plan Publication Sites and Policies Map. For the purposes of determining this application the following policies are considered to be of relevance:

Core Strategy policy(s):

CS4 Green Belt

CS14 Accessible Places and Managing Demand for Travel

CS20 Biodiversity and Geodiversity

CS21 Landscape

CS25 Dealing with Flood Risk

CS26 Minerals

CS28 Sustainable Design

Unitary Development Plan 'saved' policy(s):

ENV2 'Conserving the Environment'

ENV3 'Borough landscaper'

ENV3.7 'Control of Pollution'

MIN4 'Oil and Gas'

MIN5 'Criteria in the Assessment of all Minerals Extraction Proposals'

T4 'Traffic Management'

T6 'Location and layout of Development'

Sites and Policies Local Plan:

SP2 Development in Green Belt

SP37 Sites Protected for Nature Conservation

SP45 Archaeology and Scheduled Ancient Monuments

SP51 Assessment of Mineral Extraction Proposals

SP53 Exploration and Appraisal of Hydrocarbons

## **Other Material Considerations**

The Water Framework Directive relates to groundwater issues and is monitored by the Environment Agency.

Hedgerow Regulations 1997.

The Offshore Installations and Wells Regulations 1996 (Design and Construction).

National Planning Practice Guidance (NPPG) - On 6 March 2014 the Department for Communities and Local Government (DCLG) launched this planning practice guidance web-based resource. This was accompanied by a Written Ministerial Statement which includes a list of the previous planning practice guidance documents cancelled when this site was launched.

National Planning Policy Framework: The NPPF came into effect on March 27<sup>th</sup> 2012 and replaced all previous Government Planning Policy Guidance (PPGs) and most of the Planning Policy Statements (PPSs) that existed. It states that “Development that is sustainable should go ahead, without delay – a presumption in favour of sustainable development that is the basis for every plan, and every decision.

The NPPF notes that for 12 months from the day of publication, decision-takers may continue to give full weight to relevant policies adopted since 2004 even if there is a limited degree of conflict with this Framework. The Rotherham Unitary Development Plan was adopted in June 1999 and the NPPF adds that in such circumstances due weight should be given to relevant policies in existing plans according to their degree of consistency with this framework (the closer the policies in the plan to the policies in the Framework, the greater the weight that may be given.)

The Core Strategy/Unitary Development Plan/Rotherham Local Plan ‘Publication Sites and Policies - September 2015’ Policies referred to above are consistent with the NPPF and have been given due weight in the determination of this application.

The emerging Policies within the Sites and Policies document (September 2015) have been drafted in accordance with both the NPPF and the Core Strategy. The weight given to these Policies is dependent on the status of the Local Plan at the time of consideration and on the comments received from the Inspector (dealing with the adoption of the Local Plan) in relation to each specific Policy following the Examination in Public. The Inspector wrote to the Council on 3 November 2017 setting out the Proposed Main Modifications he considers necessary to make the plan sound and the consultation on the Main Modifications is programmed for 8 January to 19 February 2018. It is expected that the Inspector’s final report will be produced in April or early May, with adoption of the plan by the Council following in July 2018.

## **Publicity**

The application has been publicised by means of 10 site notices (23 June 2017) placed around the site and within Harthill village, along with press notification (Rotherham Advertiser, June 2017). The Council has received a total of approximately 1300 objections to the proposed development (including from Harthill Parish Council and Thorpe Salvin Parish Council) and no letters in support.

- Approximately 70% of the objections are from standardised tick-box letters which have also been sent to other Councils with similar applications.
- Approximately 30% of the objections received are bespoke to this application.

It should also be noted that a high proportion of the objections received are from outside of the Rotherham Borough (up to 40% of the total received) including some from

international addresses. In addition, it is difficult to quantify exact numbers of objections received to this planning application due to the following complications:

- In some instances objectors have responded numerous times to the planning consultation process, with the likelihood of some double-counting occurring.
- The difference between individuals and recently formed community groups has also become blurred with objections received from community groups and individuals acting in both capacities.
- Overall the level of detail supplied is unbalanced with some objections including a high level of detail specific to this site, and others providing only brief comments. It is therefore difficult to quantify the level of planning weight just on numbers alone.

However, overall it is noted that a very significant number of representations have been received to this application.

The representations can be broken down into the following main areas:

- General objections to 'fracking'
  - The purpose of this application is to lead to fracking, therefore, it should be taken into account in this application.
  - This is incompatible with the UK's national and international commitments to reduce greenhouse gas emissions.
  - Both the short and long term environmental impact of this project are unknown.
  - There is evidence that expanding fracking in the USA and Australia has not reduced the use of fossil fuels.
  - Many further wells will be required to fully exploit shale gas reserves
  - Venting from leaking wells occurring, methane is more potent as a greenhouse gas than carbon dioxide.
  - Flaring during flow testing, there is not enough gas to warrant the expense and disruption of making a connection to the gas grid, but too much to be able to use it on site. Operators need to discard this gas, which they can do by either venting directly to atmosphere or by flaring. Flaring turns methane into CO<sub>2</sub>.
  - People cannot go down the fracking wells to inspect the state of the rock before, during or after the process, so how can we possibly know what effect it will have in the short and long terms?
  - Further exploration of alternative forms of energy provision (i.e., wind, solar, or water) should be explored.
  - This development will bring no benefit to the local community
- Impact on highway safety
  - The local infrastructure has numerous narrow roads, with high hedges and without pavements, many of which cannot easily be widened.
  - Conflict will occur on the road network between numerous different road users. In particular the dangers of commercial traffic sharing narrow road space with more vulnerable road users such as dog walkers, ramblers, horse riders and cyclists is high.
  - Potentially 70 traffic movements a day into and out of the site would have a significant impact on the surroundings and increase pollution.
  - Loss of amenity of surrounding paths adjacent to the site.

- Closure of highways has been occurring during the seismic testing, causing significant disruption to nearby residents.
- Short spells of road closures will cause significant delays when considered cumulatively and when carried out multiples times on a daily basis.
- Long convoys of construction vehicles will be both a traffic hazard and a nuisance on the wider road network.
- Narrow road network will require additional passing places which will also result in reduction of hedgerow and subsequent loss of wildlife.
- There is no mention in the plan of where the designated staging area is and also no mention of the increased volume and impact of supporting vehicles such as vans and cars etc.

Specific concerns have been raised regarding the implications of allowing a Section 14 (s14) Temporary Regulation Order (TRO). These concerns highlight restricted access to Packman Lane for local residents, contravention of the Human Rights Act with the curtailing of movements where only a single right of access is available, as well as the length of time required for the operation of a TRO. The objection also goes onto to query how vulnerable road users will be managed during a temporary closure and indicates that the data collection equipment, including cameras, was erected without the permission of RMBC.

- Ecology and wildlife issues

- The proposals could have a significant impact on badgers, bats, birds and other wildlife in the adjacent Loscar Common plantations, Loscar Common Local Wildlife Site and the adjacent fields and hedgerows.
- One or more hedges will need to be removed in order to increase highway capacity as indicated above.
- The site falls within the Impact Risk Zones of two SSSIs which are designated for their hydrological features which are partly a function of the subsurface geology. Natural England is responsible for assessing any potential impacts on SSSIs.
- Lighting is a potential adverse impact on nocturnal wildlife such as bats, badgers, owls, etc. This is a rural location with virtually no light pollution so this could be a problem, particularly with 24 hour working and adjacent woodland.
- No mitigation measures have been proposed by INEOS for farmland birds that might be affected. Farmland birds (including those that use arable land and hedgerows) have decreased dramatically in recent years and several species (such as skylark, quail, corn bunting, lapwing and grey partridge) might be expected on the site. Several of these are red or amber list species and bird survey would have helped identify impacts on birds and helped inform mitigation.
- The mitigation measures may be inadequate for other groups such as badgers, bats, woodland birds, etc because these were not surveyed or, in the case of bats, were only surveyed over a narrow period.
- The Phase 1 Habitat survey was inadequate (surveyed out-of-season, single target note, headland not identified, no plant list, etc) and may have overlooked features or species that should be mitigated.

- Visual impact

- Unsightly visual impact of drilling equipment along with associated portacabins, amenity buildings and bunding on the surrounding rural area.

- The drill rig, at 60m in height, would be an unacceptable blight on the landscape and due to the flat nature of the area would be visible from a wide range of locations.
- This will be the start of a continuous process of industrialisation of the countryside.
- Concern about damage to historic and listed buildings, including churches.
- Concern that there has been insufficient assessment on the heritage of the surroundings
- Significant increase in light pollution during 24 hour operations.
- Noise generated by the development
  - Both from the machinery to be located on the development site and from lorries and other vehicles entering and existing the site.
  - The levels of noise and vibration resulting from the proposed development has been raised. This is in relation to both people and wildlife.
  - Generators operating 24 hours a day will be required to power the site.
  - The landscape in the wider area is very flat so noise will travel far.
- Increase in air pollution
  - This will occur from both on site machinery and emitted from vehicles entering and leaving the site.
- Mining risks
  - There are numerous mine shafts in the area due to legacy of coal mining in the region.
  - Have these been taken into consideration and what safeguards will be taken to ensure no mine shaft degradation will take place.
- Impact on local archaeology
  - Proposal will result in a loss of archaeological features that are visible from aerial photos.
  - Packman Road is an ancient Roman Road, and proposal will have a general detrimental impact on heritage.
- Impact on health
  - Increase in disturbance and stress to local residents and on their mental health and general wellbeing
- General environmental impact and future increased risk of contamination
  - The pollution of water with chemicals used in the drilling process. Concern is raised in relation to surface water (streams and rivers) and ground water including aquifers and Groundwater Protection Zones (GPZ).
  - The use of water in the process is a concern and is seen as a wasteful use of an important resource.
  - Where does contaminated mud and water get disposed of?
  - How is water transported into and then off-site?

- Increased risk of earthquakes.
- Concern is raised that the groundwater monitoring (subject of a separate permitting application) is inadequate.
- The use of the boreholes for the potential future storage/disposal of waste is raised.
- Borehole failure leading to contamination is a concern and there is worry that contamination could occur after works have finished.
- Attention is drawn to the EU Water Framework Directive 2000/60/EC. It is stated that the proposal is contrary to these policies/regulations.
- Cumulative impact
  - This application should be looked at in wider context as there will be further applications in future.
  - In order to fully exploit this deposit, multiple wells will be required.
  - The amount of water use, toxic waste water production, road traffic, pollution risk and landscape impact from such a huge industrial operation would be immense.
- Inappropriate use of the Green Belt
  - The proposed development represents inappropriate development in the Green Belt.
- Economic issues
  - The proposed site is agricultural land grade 2, which is in good quality
  - Limited economic benefits. The few local jobs that will be created will be short-term and low paid.
  - The gas produced will not be sold to benefit UK residents.
  - There are no benefits to the local area. Reference is made to a lack of economic justification as it will not create significant jobs and would not reduce local unemployment as people are employed from elsewhere.
- Other issues raised

A wide range of other concerns and comments were also raised which are summarised below:

- The safety record of Ineos has been raised with incidents of other events, unconnected to this site.
- There is concern that the proposal is experimental and Ineos, along with other operators, have never previously drilled this deep before and lack the experience to do this.
- A number of objectors have raised the High Court Injunction that Ineos have taken out and the restrictions this may have on local people carrying out their lawful business and activities without hindrance.
- Loss of house values in the local area.
- Loss of view.
- The surveying works carried out by Ineos in the past number of weeks has been disruptive, intimidating and upsetting to numerous members of our village.
- This is a social justice issue.
- Fracking companies have a complete disregard for public opinion.

- Brexit will mean a greater requirement for the UK to become more self-sufficient in food with a likely future increase in demand for agricultural land.
- Costs associated with policing future protests.

In addition to comments from the general public, comments have also been received from the following bodies:

Harthill and Woodall PC - Objects to this proposal on the following grounds:

Material considerations:

Firstly, it is the Parish Council's understanding that "Construction Phase activities" would not normally be considered a "material planning consideration" however, due to the construction and demobilising phases being the majority of the activity on the site, we believe that under the precedent set by "Stringer v MHLG 1971" exists. This ruling stated: "In principle...any consideration which relates to the use and development of land is capable of being a planning consideration. Whether a particular consideration falling within that broad class is material in any given case will depend on the circumstances." Construction and demobilization phase activities should in this case be considered material.

Highway safety issues:

The proposed site is on Common Road, a small, narrow, unclassified country lane accessed from either Packman Lane, an ever-narrower country lane, or the similarly narrow and winding Harthill Field Road. The traffic on these lanes is primarily local farmers accessing their fields and local light vehicles. This is borne out by the applicants' own traffic survey. Even local HGV drivers who know of the lanes consider them unsuitable and rarely use them unless delivering to local farms.

These lanes are also used extensively by local walkers as they integrate well with the system of local footpaths to form a number of very popular circular routes and are generally quite quiet.

Although there are many public footpaths in and around Harthill there are not so many bridle paths. Consequently these quiet country lanes are very popular with local horse riders and cyclists. These roads are simply not suitable for the numbers of HGV and other additional vehicle movements proposed by the applicant. There are many blind bends, blind summits, and very narrow sections where it would be impossible for two opposing articulated or towing vehicles to negotiate safe passage. Additionally, there are no safe places on Common Road or Packman Lane for large HGVs to safely pass horses.

Construction of Passing Places:

The applicant proposes to construct a number of passing places along Common Road and Packman Lane. The Parish Council are opposed to this solution as it would involve the destruction of significant lengths of ancient hedgerow and they believe it would add to the area's already significant "Fly Tipping" problem as gaps in hedges attract vans seeking to offload waste in discreet locations.

Traffic generation:

The applicant has stated that they would implement “traffic control measures” along the narrow country lanes to reduce the risk of accidents. The Parish Council is concerned that the unintended consequence of these measures, along with the high volume of traffic, to and from the site, would be that a significant proportion of the existing traffic using the lanes would be displaced to the nearest alternative route, being the already very busy Union Street, through the centre of Harthill. This will significantly add to the amount of traffic within the village along with the accompanying noise and pollution. An additional concern is the significantly increased risk to local residents crossing the road. This is of particular concern around “rush hour” as the local primary school’s main gates open directly onto Union Street and there is currently no zebra-crossing or crossing patrol to assist with child safety.

Loss of outlook to the detriment of residential amenity and loss of important open spaces:

The proposed site is in an Area of High Landscape Value and protected as part of the Green Belt. It is highly visible for many miles and particularly from the northern area of the Harthill Parish. If the proposal is allowed to proceed the effects will be cumulative with the earlier development of the Loscar Wind Farm and the erection of a telephone mast - close to the site, resulting in an unacceptable degradation of the outlook and subsequent loss of residential amenity.

Noise or disturbance resulting from use, including proposed hours of operation:

Harthill Parish Council note that the site will operate 24hrs per day, 7 days per week, during the drilling phase (which is expected to last for 5 months). They understand that the site power will come from diesel generators, the drill rig will be powered by a large diesel engine and, according to the lighting plan submitted by the applicant, their site will be lit by 6 diesel powered lighting columns. This means that there will be a minimum of 8 diesel engines running all night, resulting in operational noise from these and that of attendant vehicles. This will result in an unacceptable disturbance for local residents.

From the applicant’s lighting plan it is clear that the intended site will be very well lit. The Parish Council is concerned about the effect such high intensity lighting will have on the residents living within line of sight of operations.

Smells and fumes:

The excessive use of diesel powered generation will result in an unacceptable level of pollution including smells and fumes around the site.

Possible contamination of important aquifer:

The proposed site sits atop of, and will drill through, an important aquifer that feeds into Harthill Ponds. This feeds many springs in and around the village that are used by farmers as drinking water for domestic animals and by a wide variety of wildlife. Any contamination of this watercourse, as a result of drilling or spillage on or around the site would be devastating.

Effect on trees and wildlife/nature conservation.



The site is adjacent to two old and well-established areas of mature woodland that both appear on the 1840 1" to 1 mile Ordinance Survey map. These are home to many forms of wildlife which could be adversely affected by the increase in traffic, increase in noise, human movements, vibration and light pollution due to 24hr working.

Inadequate or inappropriate landscaping or means of enclosure:

Harthill Parish Council notes that the proposed site is out of all proportion to the height of the proposed landscaping intended to screen the installed equipment on the site not only in the drilling phase but at all other times. No meaningful attempt has been made to screen the site from the surrounding area.

Scale and dominance:

The proposed development by reason of its size, depth, width, height and massing would have an unacceptably adverse impact on the amenities of the properties immediately adjacent to the site and the surrounding area by reason of visually overbearing impact within the area.

Archaeology:

The applicants' own Archaeological survey has identified a number of areas of interest within the footprint of the site. If the development is allowed to proceed without a full archaeological examination of the site then this potentially valuable archaeological information relating to history of the area will be lost for ever.

Economic impact and sustainability:

Without wishing to become embroiled in the wider debate about fracking the Parish Council believe the development of this particular test well on this particular site offers no significant economic benefit to the area that could not be likewise gained from a well placed in a more appropriate location.

Harthill PC would like a site visit to take place prior to determination.

Thorpe Salvin Parish Council – Objects to this proposal on the following grounds:

General agreement with the reasons set out by Harthill Parish Council.

In addition there would be a loss of good quality agricultural land.

The proposed industrial process is untested technology which has the potential to unlock damaging consequences which cannot be reversed, especially as this is an area honeycombed with old mine workings.

The emissions of nitrogen dioxide would damage wildlife.

This is a wholly unsuitable location for a large scale industrial complex.

Friends of the Earth – Objects on the following grounds:

Matter 1 - Landscape and Visual Impact:

Drilling rigs and associated infrastructures (site accommodation, fencing, access roads, lighting, waste storage areas) are highly industrial developments, especially when sited in a rural contexts. Preston New Road, Lancashire - While the Secretary of State overturned the original committee refusal on the 5th October 2016, this was mitigated by limiting the drilling rig height to 36m (instead of planned 56m) via amended planning condition. In our view this represented tangible realisation and mitigation.

The 60m drill will be highly visible in a protected landscape during this time. The photomontages show only existing views, thereby omitting how the proposed development would appear in the landscape (e.g. landscape bunding, site infrastructure, site accommodation and – while only temporary for 5 months – the 60m drilling rig). For other types of development, such as wind turbines or solar farms, Local Planning Authorities usually require proposed photomontages that demonstrate how the site will appear i.e. with development present in the photomontage

Dark Night Skies Assessment - There is no indication of what the scheme will look like during the day or night.

Zone of Theoretical Visibility (ZTV) - The Council should ask for the ZTV to include the location of sensitive heritage assets (including the two Registered Parks and Gardens which are present within the 5km study area). It is reasonable to request that those historical assets listed be included within the ZTV, so members of the public and statutory bodies (such as Historic England) can better judge the overall impact.

Matter 2 - Potential for disturbance to protected species (including bats):

The Phase 1 Habitat Survey was carried out in January 2017, well outside the optimal survey window. The Phase 1 Habitat Survey failed to mention the conservation headlands around the arable field (these add to the biodiversity of the field and could be important for nesting birds, mammals, etc. The Phase 1 Habitat map had a single Target Note – almost all Phase 1 Habitat Surveys have several Target Notes with accompanying text. The better Phase 1 Habitat Surveys also have plant lists which could not properly be drawn up in the month of January.

The lighting details provided with the scheme also fail to demonstrate how impacts to bats would be mitigated except for a reference that the Bat Conservation Trust's guidance on this will be followed.

A 30m buffer has been put forward by the applicants (to which no rationale is provided as to why this distance was chosen). Human disturbance, vehicle disturbance and disturbance during construction could easily be an issue since no screening has been proposed.

Bat surveys were restricted to August and September and only undertaken following complaints by the local authority ecologist. The Bat Conservation Guidelines suggest that monthly active surveys during the flight season should have been undertaken in combination with automated surveys.

No badger surveys of the plantations were conducted. Although it is recognised that INEOS and their ecological consultants were not allowed access to the plantations, badgers could have been confirmed by trail cameras, night vision cameras or video either from a distance or from the public rights of way that run around the wood. A badger sett has been reported by local residents within Loscar Common Plantation.

Natural England's Standing Advice states that badger, bat and breeding bird surveys should be conducted where woodland adjoins planning application sites.

A breeding bird survey was not conducted. Local residents have reported skylark and other bird species. Farmland birds (including those that use arable land and hedgerows) have decreased dramatically in recent years and several species (such as skylark, quail, corn bunting, lapwing and grey partridge) might be expected on the site. Several of these are red or amber list species and bird survey would have helped identify impacts on birds and helped inform mitigation. A breeding bird survey could have been undertaken with 3 or 4 visits – this would not have been expensive or onerous to perform.

A breeding bird survey should have also included Loscar Common Plantations. Since breeding bird surveys are mainly done on bird-song so the lack of access to the plantation should not be a problem.

Matter 3 - Whether it should be considered a stand-alone exploratory scheme not involving hydraulic fracturing:

The developer's wider aim – which is to find commercially viable shale gas formations which can be extracted on a larger scale – should not be forgotten as part of this application's consideration. It is unclear as to whether fracking will occur at or adjacent this development site over the 5 year permission timeframe.

Matter 4 - Inconsistency with Water Framework Directive:

It is our view that the Water Framework Directive and the precautionary principle are relevant in interpreting the above conclusions, which we would argue do not constitute absolute scientific justification that groundwater contamination will not occur (either directly or indirectly). Overall, the application fails to give the evidence that there is absolute scientific certainty that there would be no risks to water quality deeper below ground.

Matter 5- Inconsistency with climate change adaptation and mitigation objectives:

The application contains insufficient information regarding fugitive methane emissions, with the risks therefore unknown. No information is provided regarding Air Quality, especially estimated quantities of escaping gas (leakage) or how this will be dealt with. Air Quality matters are limited to the 'other matters' section within the planning statement which is unsatisfactory and not robust.

Overall, due to a number of omissions regarding how the scheme would impact on climate change (regarding emissions, air quality, adaptation and mitigation), the application should be considered to have unknown and unacceptable environmental impacts.

CPRE – Objects to the proposals. Impacts of the proposed development on local amenity, tranquillity, local ecology and traffic impacts on local quiet lanes.

The development would not preserve the openness of the Green Belt and conflict with its purposes, as set out in paragraph 90 of the NPPF. It would also be incongruent with local landscape character and would affect some of the distinctive features named in the LCA character area, notably the setting of Harthill church. The negative impacts outweigh any possible benefits. Furthermore any claimed benefits of the supply of future

shale gas, in terms of energy supply and security, must be discounted as this is only an exploration well. If such benefits fall to be considered, then also should the disbenefits of extracting fossil fuels and the likely failure to meet climate change targets.

Yorkshire Wildlife Trust – Objects to the proposals. Inadequacies of ecological survey information. The ecological surveys were conducted outside of the optimum time of year for ecological surveys (January). Signs of protected animals and plants may have been missed as they are less active/ visible during the winter months.

Impacts on Local Wildlife Sites: The proposed development has one Local Wildlife Site within its boundary - Loscar Common LWS. The ecology chapter of the Environmental Statement has assessed the impacts on the LWS as 'not significant'. Yorkshire Wildlife Trust does not agree with this assessment. Given that the development site is within the LWS it will be impossible for the development not to result in at least some low level impacts. The development will result in increased noise, vibration, visual disturbance and lighting within the site and increased traffic movements until after the site has been decommissioned.

Potential impacts on SSSIs: The proposed development is within close proximity of a number of SSSIs; Ginny Spring, Whitwell Wood SSSI (930m), Crabtree Wood SSSI (1,146m).

Impacts on protected species – Breeding birds: No breeding bird surveys have been conducted despite the site being a LWS for corn bunting. Yorkshire Wildlife Trust has also been informed that the site supports skylark. Many other farmland bird species may also be on the site such as yellowhammer and linnet. All farmland birds are declining and have been identified as Biodiversity Action Plan (BAP) species. Developments should therefore not result in net declines of farmland birds.

Mitigation and enhancement: The proposed development will result in the loss of hedgerows. At present it is not clear whether compensatory planting will be undertaken to replace such losses. The lengths of hedgerows to be lost and planted should be stated in the report, and along with the locations for compensatory planting. A species list should be provided for the woody species to be planted in the compensatory hedgerows.

Baseline data: The collection of pre-commencement baseline data for air and water quality is essential in order to allow for comparisons to determine if the proposed development has had any impacts on such receptors.

A total of 11 Right to Speak requests have been received as part of the application process. Whilst the application is now to be determined by the Secretary of State at appeal against non-determination, appropriate measures will take place to ensure that those requests are met where practical when the position in respect of the appeal is considered by Planning Board.

## **Consultations**

### Specific Shale Gas consultees

Oil and Gas Authority (OGA) – The OGA does not offer specific geotechnical advice regarding the planning application. The OGA will only grant consent to drill after all the other regulatory permits and permissions are obtained.

Public Health England (PHE) – No objections subject to informative. The application does not include any horizontal drilling, nor does it include any hydraulic fracturing (fracking). The main issue of potential public health concern is noise. This is most likely to be encountered during stages 1 and 2, with the possibility of some recurrence in stage 3a, if it is required. This response is based on the assumption that the applicant will take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry best practice.

British Geological Survey (BGS) – No response received.

Business, Energy and Industrial Strategy (BEIS) – formerly Department for Energy and Climate Change (DECC). Application submission noted, the Department does not comment on individual applications.

Health and Safety Executive (HSE) – No objections subject to informatives.

Environment Agency (EA) – No objections subject to conditions and informatives.

#### External

Civil Aviation Authority – No objections.

Doncaster Robin Hood Airport – No objections.

Traffic England (Highways Agency) – No objections.

Natural England – No objections.

Historic England – No objections. The application should be determined in accordance with national and local policy guidance, and on the basis of the Council's specialist conservation advice.

Coal Authority – No objections subject to informative.

South Yorkshire Mining Advisory Service – No objections.

South Yorkshire Police – Have raised concerns regarding future potential protest activity. The main forms of protest have been outlined as follows:

- Local Residents/protest groups blockading the entrance to the site.
- A “slow walk” with protestors walking in front of attending vehicles in an effort to publicise their cause.
- Vehicle occupation – where a protestor will climb onto an attending contractor's vehicle and either lock on with some sort of device or simply refuse to remove them.
- Lock ons – where a protestor secures themselves to entrance gates to the proposed site or anywhere along the route that would prevent access for vehicles.

South Yorkshire Archaeology Society – Overall no objections, subject to the recommended two part condition.

Environment Agency (Flood Risk) – No objections subject to conditions and informatives.

Yorkshire Water – No objections.

Severn Trent Water – No response.

Sheffield Airport – No objections.

#### RMBC – Internal

Transportation and Highways Design – Concerns raised on highway safety grounds. Any proposals to mitigate the wider potential impact under a Traffic Regulation Order to seek to control periods of one way traffic by signs and/or banksmen is not likely to overcome this. It is unlikely that all vehicles could negotiate the proposed route in a safe and satisfactory manner. The introduction of a significant number of additional large commercial vehicles along these narrow country lanes is likely to cause conflict, particularly with other vulnerable road users such as pedestrians, cyclists and horse-riders. Overall, despite the submission of additional information these concerns cannot be satisfactorily addressed and the application is recommended for refusal.

Environmental Health – Overall no objections. The site does have the potential to have a noise impact on the nearest residential properties. No concerns are raised subject to conditions on final noise monitoring details. In respect of air quality there are no objections subject to recommended condition.

Ecologist – Overall the Ecological survey and assessment are deficient in a large number of areas partly as explained above and more fully explained in the Ecologist's responses to the planning dept dated 30/6/2017, 6/10/2017 & 26/10/2017.

- Phase 1 Habitat Survey has been carried out in January which is not a suitable time of year to be undertaking ecological assessments. Several protected species will have been hibernating or inactive and cannot be surveyed at this time of year. It would have been a simple task to do a Phase 1 Habitat Survey between April and October 2017.
- The Phase 1 Habitat Survey has only a single Target Note (usually, several are identified).
- No plant list has been provided with the Phase 1 Habitat Survey. Although, no essential, the better Phase 1 Habitat Surveys contain these. By doing the survey in January, many plants will not have been present and will therefore have gone unrecorded.
- INEOS explained that January is a good time of year for identifying tree roosts and badger setts because these could be clear of vegetation. Badger setts are normally free of vegetation and there is no evidence that INEOS undertook badger surveys in January 2017 and potential tree roosts appear mainly to have been surveyed in August and September 2017.
- The temperature during the Phase 1 Habitat Survey was 4°C. This is cold and species are far less likely to be active as a result of this. The surveyor's experience of surveying in January, is that it is often cold, damp and wet and

these make it unpleasant for surveyors as well as wildlife. Unless there is a very good reason (such as winter bird surveys), the Ecologist has indicated they would not recommend surveys in January.

- Conservation headlands were not identified in the Phase 1 Habitat Survey. These could be useful for ground-nesting birds and small mammals, for finches feeding on seedheads, etc.
- Derbyshire Biological Records Centre was not contacted for biological records despite the proximity of the Derbyshire boundary. The Ecologist estimated that the Derbyshire boundary is 650m to the south, which he would regard as close to the application site. In the Ecologist's experience, it is good practice and courteous to contact neighbouring local authorities when applications are submitted close to these.
- The names of surveyors along with their experience, qualifications, accreditation and licences held are not provided despite this being best practice. These could have been provided to the LPA in private and names redacted from the report. To provide no explanation is remiss.
- Nearby ancient woodlands have not been identified in the Ecology Report.
- Nearby SSSIs have not been mentioned in the Ecology Report. The Impact Risk Zones of two SSSIs extend to and beyond the application site. Both of these SSSIs are designated for their flush systems which reflect subsurface geology and hydrology, which could be impacted by the exploratory drilling.
- There is the potential to damage aquifers, watercourses, springs, flushes and other hydrological features which in turn, could have a major impact on habitats, wildlife sites and species.
- Natural England's Standing Advice suggests that where Local Wildlife Sites are potentially affected by planning proposals then ecological surveys should be conducted.
- The Ecology Report failed to report some woody plant species in the hedgerows and a hedgerow survey should have been conducted with the initial report (this was later done on the hedgerow survey).
- The Ecologist recommended that a breeding bird survey, badger and more comprehensive bat surveys are done of the site and the adjoining plantations. The fact that the applicant was denied access to the plantations should not have been a reason not to conduct surveys since technology exists to record protected species (such as trail cameras, night vision, video) whilst breeding bird surveys are normally done on birdsong which could have been done from the public rights of way running alongside the plantations. A breeding bird survey involving three or so visits could have been done which would not have been expensive or onerous. Surveys of badgers, bats and breeding birds on the site and in the adjoining woodlands can be justified on the basis of Natural England's Standing Advice
- The Bat Conservation Guidelines (2016) indicate that bat surveys are required for sites adjacent to woodlands (Box 1, page 13 of Collins 2016). Surveys should also be done where there is to be floodlighting within 50m of woodland or field hedgerows. Bat activity surveys should have been done even where it was decided that the habitat had low suitability for bats (Table 8.3 on page 58). This would have required one survey per season and automated surveys. If the site is considered to have moderate habitat suitability for bats (which seems more suitable for this site), then monthly bat surveys would have been required.
- The Ecologist doesn't believe that the Impact is 'Not significant' given the information provided above.

- More mitigation measures could have been considered for corn bunting since this species is a qualifying feature for Loscar Common LWS within which the application site is located.

Tree Service Manager – From the submitted details it is noted that the site has two main hard boundaries:

- Eastern boundary (a defunct species poor hedgerow).
- Southern boundary (a well-managed, gappy, species rich hedgerow).

Initial concern was raised over the potential removal of hedgerows to accommodate the development. However, following the submission of additional Hedgerow Report details, the Tree Service Manager has not raised any specific objections to the proposals, subject to a condition to protect existing trees.

Landscape Design – Overall no formal objection. The development will result in substantial adverse landscape and visual effects, albeit experience locally within 1-1.5km of the site and over the short term.

Main Drainage – No objections following additional clarifications from the applicant.

Public Rights of Way – No objections.

#### Neighbouring Local Authorities

Bassetlaw Council – No response.

Bolsover Council – Have raised concerns to the application, particularly on highway capacity grounds, and indicate that the application will also potentially have a detrimental impact on the neighbouring Council's road network. A secondary issue raised is that any future drill rig is likely to have a prominent and industrial appearance on the surrounding rural area. However, they do not formally recommend refusal on this aspect.

North East Derbyshire Council – No comments received.

Sheffield City Council – No objections.

### **Appraisal**

Where an application is made to a local planning authority for planning permission, in dealing with such an application the authority shall have regard to -

- (a) the provisions of the development plan, so far as material to the application,
- (b) any local finance considerations, so far as material to the application, and
- (c) any other material considerations. - S. 70 (2) TCPA '90.

If regard is to be had to the development plan for the purpose of any determination to be made under the Planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise - S.38 (6) PCPA 2004.

The planning application seeks the development of a hydrocarbon well site which incorporates the drilling of a vertical exploratory well through the use of a drilling rig together with associated ancillary works. The purpose of the proposed development is



logging and coring of the shale strata, which would be assessed by the applicant. The assessment is to see whether future flow testing of the well(s) (which may involve well stimulation through hydraulic fracturing – or ‘fracking’) would be worthwhile.

Hydraulic fracturing (fracking) and/or flow testing are not part of this planning application. If either are demonstrated to be worthwhile a further planning application would be submitted. If the results are negative the site would be decommissioned and restored.

#### The Regulatory Regimes:

Rotherham Council, as Minerals Planning Authority (MPA), is just one of the key Regulators involved in the hydrocarbon development process, each one of which must be satisfied before development can commence. The key Regulators are listed below and their involvement summarised as follows:

- a) The Oil and Gas Authority (OGA) – which issues Petroleum Licences, gives consent to drill under the licence once the other permissions and approvals are in place, and have responsibility for assessing risk of and monitoring seismic activity, as well as granting consent for flaring and venting.
- b) The Minerals Planning Authority – which where appropriate grants permission for the location of any wells and well-pads, and imposes conditions to ensure that the impact on the use of the land is acceptable.
- c) The Environment Agency – protects water resources (including groundwater aquifers), ensures appropriate treatment and disposal of mining wastes, emissions to air, and suitable treatment and management of naturally occurring radioactive materials.
- d) Health and Safety Executive – regulates the safety aspects of all phases of extraction, in particular they have responsibility for ensuring the appropriate design and construction of a well casing for any borehole.

There are other bodies which may be involved in the consenting of hydrocarbon development, including:

- a) The Coal Authority – whose permission will be required should drilling through a coal seam take place.
- b) Natural England – who may need to issue European Protected Licences in certain circumstances.
- c) British Geological Society – who need to be notified by licensees of their intention to undertake drilling and, upon completion of drilling, must also receive drilling records and cores.
- d) Hazardous Substances Authorities – who may need to provide hazardous substance consent(s).
- e) Public Health England – are consulted during the planning process and advise on public health matters.

There may also be other additional consents and orders, such as stopping up rights of way or temporary road orders, which may need to be obtained in certain locations.

The main considerations in the determination of the application are as follows:

- Principle of the development in the Green Belt
- Site selection process
- Traffic and transportation
- Public Rights of Way
- Ecological issues and impact on habitats
- Impact on hedges and trees
- Landscaping and visual impact
- Lighting
- Archaeology
- Heritage
- Noise and vibration
- Well design and safety
- Air quality
- Ground contamination, land stability and impact of mining legacy
- Flood risk
- Drainage
- Hydrology and groundwater
- Socio-economic impacts
- Health impacts
- Climate change
- Cumulative impacts
- Restoration and after use
- Other material considerations
- Other issues

#### Principle of the development in the Green Belt

The Development Plan currently consists of the Core Strategy and the relevant 'saved' Policies in the Unitary Development Plan, though regard should also be had to emerging Policies in the Rotherham Local Plan 'Publication Sites and Policies.'

The site is located within the Green Belt and Core Strategy Policy CS4 'Green Belt' states that land within the Rotherham Green Belt will be protected from inappropriate development as set out in national planning policy.

Core Strategy Policy CS26 'Minerals' adds that: "Energy Minerals - Proposals for underground coal mine extensions (including colliery spoil disposal) and surface mining in addition to proposals for the exploration, appraisal and production of onshore oil and gas, including the gasification of coal, coal mine methane and coal bed methane will be assessed on their merits against all material planning considerations including national planning policy."

Policy SP2 'Development in the Green Belt' of the Rotherham Local Plan 'Publication Sites and Policies' (as amended following Examination in Public) states that in considering planning applications for new development, including mineral workings within the Green Belt, and to ensure proposals minimise the impact of the development

on the openness of the Green Belt, particular regard will be had to the following factors: the size, scale, volume, height, massing, position, lighting and any proposed enclosures of the proposals.

National Planning Policy Framework (NPPF):

At the heart of the NPPF is a presumption in favour of sustainable development. For decision taking this means approving development proposals that accord with the development plan without delay; and where the development plan is absent, silent or relevant policies are out-of-date, granting planning permission unless any adverse impact of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework taken as a whole or specific policies in the Framework indicate development should be restricted.

Paragraph 90 of the NPPF indicates that certain forms of development, which includes mineral extraction, are not inappropriate in the Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in the Green Belt. An earlier appeal (after initially being dismissed) was subsequently approved in a High Court decision (July 2013) for Europa Oil & Gas at Holmwood, Surrey County Council. This was then approved by the Planning Inspectorate in a re-determined appeal APP/B3600/A/11/2166561. The Inspector indicated that:

*This means that exploration and appraisal of a mineral resource are not inappropriate activities by definition, but would only be treated as inappropriate if they adversely affect the openness or any other purposes of the Green Belt designation identified in paragraph 80 of the Framework.... Without exploration and appraisal it would be extremely difficult, if not impossible, to prove the extent and viability of a mineral resource, the extraction and production of which would not necessarily be inappropriate. As paragraph 90 of the Framework advises, inappropriateness would only arise in circumstances where the openness and/or other purposes of the Green Belt would be compromised. As such, it is necessary to move to ascertain if appeal scheme would be inappropriate development in the Green Belt, by assessing its effect on Green Belt openness, its permanence and the purposes of the Green Belt.*

The principle is therefore not considered to represent “inappropriate development” in the Green Belt. This is still subject to development preserving openness and providing it does not conflict with the purposes of including land in the Green Belt.

It is accepted that the provision of the 60m rig, security fencing and the temporary portacabins, as well as other ancillary equipment, would have an impact on the openness of the Green Belt, though this would be over a relatively short term period, at the end of which the site would be restored with all equipment/fencing/bunding being removed. As such, it is considered that the proposals do not represent inappropriate development in the Green Belt.

In addition, Policy SP53 ‘Exploration and Appraisal of Hydrocarbons’ of the Rotherham Local Plan ‘Publication Sites and Policies’ (as amended following Examination in Public) states:

“Proposals for exploration and appraisal of conventional and unconventional hydrocarbons will be permitted where:

a. they are supported by an overall scheme which allows for the exploration and appraisal of an oil or gas field together with any other fields in close proximity so far as

is reasonable and practicable before production commences. This must include an indication of the extent of the resources and the extent of the area of search within the resource;

- b. the integrity of the geological structure is demonstrated to be suitable;
- c. infrastructure and associated facilities are sited in the least sensitive location from which the target resources can be accessed, so as to avoid the environmental and ecological impact of development wherever possible;
- d. any adverse impacts can be mitigated to an acceptable level, with safeguards to protect environmental and amenity interests put in place as necessary;
- e. operations are for an agreed, temporary period; and
- f. sites and associated facilities are restored in line with a scheme to be agreed by the Council at the earliest practicable opportunity if resources are not found in economically viable volumes, or they are developed within a time frame agreed."

The explanatory text to the Policy states: "As an emerging form of energy supply, there is a pressing need to establish – through exploratory drilling – whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas and coalbed methane present to facilitate economically viable full scale production."

Policy SP54 'Hydrocarbon Production Facilities and Ancillary Development' of the Rotherham Local Plan 'Publication Sites and Policies' states: "Proposals for conventional and unconventional hydrocarbon production and other related ancillary development, will be permitted where:

- a. a full appraisal of the hydrocarbon resource field has been completed and agreed with the Council;
- b. they form part of a comprehensive scheme for the full development of the hydrocarbon resource within an agreed timescale;
- c. infrastructure and facilities are justified in terms of their number and extent, sited in the least sensitive location from which the target resources can be accessed, and designed and operated to minimise environmental and amenity impacts;
- d. any individual and cumulative adverse impacts can be mitigated to an acceptable level;
- e. existing facilities are used for the development of any additional fields discovered unless the applicant satisfies the Council that this would not be technically feasible and any adverse impacts can be mitigated."

Paragraph 144 of the NPPF sets out the considerations for local authorities when determining minerals planning applications. The relevant considerations are summarised below:

- Give great weight to the benefits of mineral extraction, including to the economy;
- Ensure in granting planning permission for mineral development, that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality;
- Ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties;
- Provide for restoration and aftercare at the earliest opportunity to be carried out to high environmental standards, through the application of appropriate

conditions, where necessary. Bonds or other financial guarantees to underpin planning conditions should only be sought in exceptional circumstances;

Given that exploration is one of the phases of extraction, great weight can be given to the benefits of the proposed development in line with Paragraph 144 of the NPPF.

Paragraph 147 has further specific advice for hydrocarbon development stating that when planning for on-shore oil and gas development, including unconventional hydrocarbons, Minerals Planning Authorities should clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production.

Overall it is not considered that there would be an adverse effect on the long term permanence of the Green Belt in this area. Any harm to the openness of the Green Belt is considered temporary. Landscape character effects are considered further below. The application is for minerals development which can only be undertaken where resources are located and the number of sites available for appraisal will be limited in this respect.

National Planning Practice Guidance (NPPG):

The National Planning Practice Guidance identifies a pressing need to establish, through exploratory drilling, whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas present to facilitate economically viable full scale production.

The NPPG explains that the exploratory phase of hydrocarbon extraction seeks to acquire geological data to establish whether hydrocarbons are present. It may involve seismic surveys, exploratory drilling and, in the case of shale gas, hydraulic fracturing (fracking), although no fracking would take place as part of the exploratory phase in this instance.

In view of the above it is considered that the temporary use of the site as part of associated mineral extraction, whether at this site or another nearby, is acceptable in principle, and other impacts of the scheme will now be assessed.

Future applications:

As indicated above this application only seeks approval for the drilling, testing, suspension, decommissioning and restoration of the proposed well, including possible use as a listening well. This application would not authorise any other future activities on this site.

A number of objectors wish to know whether or not this is likely to lead to a future application for high volume hydraulic fracturing, or “fracking”. The applicant indicates that until the potential commercial viability of the target resource is established through the laboratory analysis of the extracted core of shale rock, the prospect of development being taken forward to the appraisal stage is uncertain, both in respect of the content and timing of any future application.

There are a number of possible outcomes that could follow this application, but the intention is for this site to be restored. If future appraisal or production proposals were to be brought forward, either on the application site or within the surrounding area, an

application for planning permission would be required along with a range of consents from other regulators.

#### Site selection process

Identifying a suitable exploratory site depends upon a number of factors, including environmental constraints, appropriate mitigation measures and land availability. However, the fundamental and most essential requisite for a new well site is the subsurface geology. As with any other mineral resource, hydrocarbons can only be extracted where they are located. In order for a vertical core well to be worthwhile, the well pad needs to be immediately above the geological formation where existing data has identified potentially hydrocarbon-bearing strata.

It is stated that to achieve these objectives a vertical well would be drilled through each of the geological strata to achieve a full assessment of the strata to be made.

The application is also required to stay within the licence boundaries of PEDL 304.

The applicant has identified that within the search area the choice of location took into account a range of environmental and planning constraints, site availability and logistics. The constraints that were considered include:

#### Landscape

National Parks

Areas of Outstanding Natural Beauty, and  
Country Parks

#### Ecology

Ramsar Sites

Special Areas of Conservation (Habitats Directive) and candidate SACs

Special Protection Areas (Birds Directive) and potential SPAs

Sites of Special Scientific Interest

Ancient Woodlands

Biosphere Reserves

Core Grassland/Heathland/Mire/Fen/Bog

National Nature Reserves,

Local Nature Reserves

#### Land use and Access

Agricultural Land Classification

Coastal Paths

Countryside Rights of Way Access Areas

Environmentally Sensitive Areas (agricultural),

National Trails

#### Cultural Heritage

World Heritage sites

Listed Buildings (by grade)

Scheduled monuments

Heritage Coast,

Conservation Areas

### Water

Flood plain

Main rivers,

Groundwater aquifers providing potable water supplies (including Source Protection Zones)

### General

Areas with sensitive properties (schools, hospitals and care homes for the elderly),

Air Quality Management Areas

Sites are preferably greater than 400m from residential properties. This broad guiding principle was then reviewed once site specific factors could be taken into account to ensure that the chosen site was not likely to have a significant effect on any nearby receptors.

Whilst the applicant has not identified other potential sites within the supporting detail of this application, it is understood that the selected site meets the criteria set out above. The application is not defined as EIA development and the applicant is not required to list and discount sites in order of their sequential preference in policy terms. The detail of the application will be examined further below.

### Traffic and transportation

RMBC's Transportation Unit have indicated that the Traffic Management Plan (TMP) and Route Management Strategy (RMS) submitted as part of the application were not considered to provide adequate mitigation in terms of protecting the safety of other road users along the intended route (Packman Lane and Common Road).

Subsequent discussions and correspondence between RMBC's Transportation Unit and the applicant's agent have considered further possible measures, including a Traffic Regulation Order under Section 14 of the Road Traffic Regulation Act 1984 that would seek to control periods of one way traffic by signs and/or banksmen directing traffic along a diversion route involving Packman Lane, Common Road and Harthill Field Road. Convoys approaching/leaving the site would travel when the one way working was in operation and other road users would be required to follow the diversion route during these periods.

However, the agents have not satisfactorily demonstrated that all vehicles likely to require access along the diversion could negotiate this route in a safe and satisfactory manner, in particular at the Harthill Field Road junction with Common Road where the adverse road alignment will require significant improvement, probably involving third party land.

Accordingly, it is considered that the intended measures do not satisfactorily address the road safety concerns regarding the introduction of a significant number of additional large commercial vehicles along these narrow country lanes. Indeed, the stated width of some of the vehicles (abnormal loads) visiting the site is greater than the width currently available (as measured between boundary hedges). Limited informal passing places are available at present and the proposals do not include for the extension of these to a standard capable of allowing a car to pass a large commercial vehicle. Furthermore, vulnerable road users such as pedestrians, cyclists and horse-riders would be particularly at risk along those parts of the route

where there is no verge, merely a hedge/embankment. The hedge/embankment also restricts forward visibility along the lane in certain locations.

In these circumstances, RMBC's Transportation Unit have concluded that they are unable to support the proposal on road safety grounds and recommended that the application be refused.

### Public Rights of Way

The proposal does not involve any path closures. The Council's Public Rights of Way (PROW) officer indicates that the route of Harthill Footpath No.23 runs within a few metres to the east of the development site area, though this will not be directly affected by the proposals. The proposal will be clearly visible from surrounding paths and the visual amenity impact will be considered in more details below. Overall the Council's PROW department have not raised any objections to the proposals.

### Ecological issues and impact on habitats

Paragraphs 9 and 118 of the NPPF indicates that 'Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life, including (but not limited to):...moving from a net loss of bio-diversity to achieving net gains for nature'

'118. When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

### General impact on habitats

Additional Local Wildlife Sites are located within 2km of the site. These include Lob Wells Wood (1253m to the east). Several ancient woodlands are located near to the site and have not been identified or discussed in the report. Loscar Wood is 235m to the east whilst Cuthbright Wood (which is partly planted ancient woodland) is 175m to the north. Hawks Wood (937m to the north-east) and Old Spring Wood (1264m to the north-east) are part of the Chesterfield Canal LWS. Lob Wells Wood (mentioned above) is also ancient woodland.

With regard to the supporting ecological details, the Council's Ecologist has indicated that January is not a suitable time of year to be undertaking ecological assessments as it is outside the optimum period for Phase 1 Habitat Surveys. Several protected species such as bats, reptiles and amphibians are hibernating whilst badgers show limited activity at this time of year.

Yorkshire Wildlife Trust (YWT), the Campaign for the Protection of Rural England (CPRE) and Friends of the Earth (FoE) have all objected to the ecological element of the application and criticize that the ecological information submitted is insufficient.

Nearby SSSIs are not specifically mentioned in the supporting documentation. Ginny Spring, Whitwell Wood SSSI is 930m to the south-east whilst Crabtree Wood SSSI is



1146m to the south-west. However, Natural England have not raised objections to these aspects of the report. The Council's Ecologist has pointed out that NE are increasingly under-resourced in terms of manpower and their ability to provide unfettered comment is increasingly compromised.

The Council's Ecologist indicates that the southern hedgerow supports at least three additional woody species – bramble *Rubus fruticosus*, sycamore *Acer pseudoplatanus* and wych elm *Ulmus glabra*. Overall the Council's Ecologist has indicated that the site lies within the Impact Risk Zones of two SSSIs where the interest is as a result of geology and hydrology and the significance impact on these aspects has been assessed as Low. The application site is within a LWS so there will be an impact and this has also been assessed as Low. The impact on bats and badgers is also considered to be Low due to human disturbance, vibration, noise and light pollution. The impact on the hedgerow partly depends on the width required for access. The hedgerow is not considered to be heavily managed as indicated in the supporting documents because it has a reasonable verge and it was not heavily trimmed at the time of assessment.

In terms of the impact on bird species, the Ecologist has recommended that a breeding bird survey is done of the site and the adjoining plantations.

Overall the Council's Ecologist is concerned that the Ecological supporting report does not fully assess all areas of the survey. The applicant subsequently submitted a further addendum to address these issues on hedgerows and bats. Bat surveys were undertaken in August and September 2017 and included active and automated surveys (due to a malfunction, data from the latter are incomplete, but this is not thought to be a problem). Whilst the bat surveys were professionally undertaken, these were limited to August and September and no data is available for the rest of the year.

Natural England have assessed the proposed development with specific regards to the likely future impacts on the designated sites Crabtree Wood, located 2.4km (approximately) to the south of the development site and Ginny Spring Whitwell Wood, located 1.85km (approximately) to the south east of the development site.

Overall Natural England have raised no objections to the plans submitted and do not consider that the proposals are likely to have significant adverse impacts as identified using their Impact Risk Zones.

Natural England go on to note that the above two sites are groundwater dependent and hence would need to be re-considered at a later planning stage should this exploratory exercise prove the site is of value and will be taken through to the next phases.

#### Impacts on protected species

No breeding bird surveys have been conducted despite the site being a LWS for corn bunting. Yorkshire Wildlife Trust has also been informed that the site supports skylark. Many other farmland bird species may also be on the site such as yellow hammer and linnet. All farmland birds are declining and have been identified as Biodiversity Action Plan (BAP) species. Developments should therefore not result in net declines of farmland birds.

The proposed development has the potential to impact breeding birds in several ways through habitat loss/degradation, visual/ noise/ light pollution and damage/ destruction

of nests and eggs. In the absence of a breeding bird survey it is difficult to ascertain what the impacts will be on breeding birds and what mitigation/ compensation needs to be undertaken. The Ecologist advises that this is done prior to the determination of this planning application.

The application could impact on bats and badgers. Limited surveys of the former were undertaken, whilst no surveys within Loscar Common Plantation were undertaken for the latter, mainly because access was denied. The Council's Ecologist believes some recording could however have been undertaken however using modern technology such as trail cameras, night vision scopes and/or video. The impacts on bats and badgers are therefore still unclear.

The applicant has agreed to reinstate the hedgerow upon completion of the proposals with a species mix which will include native woody species of local provenance to create a species-rich hedgerow. Where the hedgerow is to be trimmed to provide safe sightlines for the site access, the applicant indicates that this will be done using an appropriate method (such as laying) to maintain the hedgerow in these areas. It is considered that a Biodiversity Mitigation Plan should be produced for the scheme, detailing all mitigation/ compensation to be undertaken in addition to enhancements and the details of ongoing management for habitats. This should continue until the decommissioning stage of the development.

#### Impact on hedges and trees

Moving to the impact on hedgerow, to be classified as important, a hedgerow must be at least 30 years old and meet at least one of the eight criteria set out in Schedule 1 of the Hedgerow Regulations 1997.

The proposed development will result in the loss of some hedgerows, particularly along the frontage along Common Road on the southern elevation. The additional submission of the Hedgerow Report indicates that approximately 16m of hedgerow will be removed and will not change the integrity of the hedge as an established field boundary. There is an existing gap/previous access in this location. The applicant has indicated that in order to reduce the ecological effect of removing the hedgerow, where possible, it will be done between September to March to avoid the bird breeding season.

The applicant further confirms that beyond the 16 m of hedgerow removal, a further section of hedge will be trimmed to provide a safe access and appropriate sightline for the access. This will be done using an appropriate method (such as laying) to maintain the hedgerow. Beyond this the hedgerow will be retained.

RMBCs Tree Officer has not raised any objections on this aspect in terms of loss of amenity.

#### Landscaping and Visual Impact

RMBC's Landscaping Team have reviewed the landscape and visual appraisal, and are satisfied that the judgements made in the report in respect of both landscape effects and visual effects are a reasonable representation of the likely worst case effects of the proposed operations included within this development.

The effects are summarised the effects in the table below as there are a number of stages of development, with different levels of effect.

Stage	Max height of elements	Duration	Nature of effect
Stage 1 Development & Establishment	32m surface rig	3 months	Site – Substantial adverse effect Landscape character - Moderate adverse effect Up to 1km Minor adverse effect beyond 1.5km.
Stage 2 Drilling & Core Pressure Transient Test	60m mobile drilling rig & sub-structure up to 15m (including lighting, double stacked containers (5m) 32m workover rig	5 months  Up to 2 months after drilling	Site – Substantial adverse effect Landscape character – Moderate adverse effect 1-3km Minor adverse effect beyond 3km
Stage 3 Maintenance of Site	2m high fencing and bund, gatehouse.	Up to 5 years	Site - Minor adverse effect Landscape character – Negligible effect
Stage 3a Possible Workover of Well (the process of pulling and replacing a well completion)	Max 32m	Up to 1 month	Site – Substantial adverse effect Landscape character - Moderate adverse effect up to 1km Minor adverse effect beyond 1.5km
Stage 4 Use of Listening Well	Workover rig 32m, or wireline truck and 30tonne crane ( up to 35m)	5 weeks	Site – Substantial adverse effect Landscape character - Moderate adverse effect up to 1km Minor adverse effect beyond 1.5km.
Stage 5 Decommissioning & Restoration	Up to 32m initially and reducing to nil	Up to 2 months (aftercare 5 years)	Site - Neutral effect Landscape character – Moderate adverse effect up to 1km Minor adverse effect beyond 1.5km Neutral effect upon

			completion of restoration stage.
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Those elements of the development involving tall structures/ cranes & drill rigs (32m, 35m and 60m respectively) will result in a substantial adverse effect locally (within 1-1.5km of the site). These effects however are likely to be experienced over a short period of time of less than 1 year. For the remaining time during operations, when taller structures are not present (up to 15m) the visual effects are considerably reduced and are more likely to be screened by the on-site mitigation bunding or existing woodland blocks so as to result in Moderate to Minor adverse effects again, experienced over a relatively short period of time of up to 5 years.

Friends of the Earth (FoE) England have objected to the application on Landscape and Visual Impact grounds. FoE are of the view that drilling rigs and associated infrastructures (site accommodation, fencing, access roads, lighting, waste storage areas et al) are highly industrial developments, especially when sited in a rural contexts.

On rig height, INEOS have further specified a 60m height as this is the highest rig available which can drill to the required depth. This is a worst case scenario as INEOS have not yet determined which drilling rig will be used. The selected rig will also depend on rig availability at the time of drilling. The parameters set allow for a range of rigs to be used. The applicant has indicated that a 36m rig would be operationally inefficient when drilling to this depth. The applicant goes onto indicate that *"...Whilst a 36m rig may be technically capable of reaching the required depth, it may require more time and will therefore take longer to reach the depth than the 60m equivalent. We wish to maintain the drilling period at the 5 month "worst case" maximum we have set. Our preference would be to not increase the time period during which the effects of the operation are occurring. To use a shorter rig for longer would simply extend the period of effects, whilst not removing what is still likely to be temporarily harmful visual effects"*.

Policy CS21 states that in areas of High Landscape Value, development will only be permitted "where it will not detract from the landscape or visual character of the area and where appropriate standards of design and landscape architecture are achieved".  
4. Furthermore, the policy then states:

*"Developers will be required to put in place effective landscape management mechanisms including long term landscape maintenance for the lifetime of the development". Emerging Policy SP35 is also relevant, with the policy requiring consideration of landscape impact.*

Concerns have also been raised that the photomontages show only existing views, thereby omitting how the proposed development would appear in the landscape (e.g. landscape bunding, site infrastructure, site accommodation).

There is some criticism that whilst reference has been made to views of the adjacent turbines visible in views towards the site, no assessment of CLVIA as to the interaction of the 60m drill tower and the turbines visible in the baseline. The turbines are a different type of development, and are a permanent feature in the landscape.

The findings of the Zone of Theoretical Visibility (ZTV) suggest that the substantial (i.e. significant) landscape and visual effects will only be "short term and temporary". Criticism has been made of the evidence supplied and on the conclusions drawn.

RMBC's Landscaping Team indicate that the development will result in substantial adverse landscape and visual effects, albeit experience locally within 1-1.5km of the site and over the short term. This will result in a noticeable deterioration in the landscape character of the area and its enjoyment by the local community, as is noted by the strength of local objections raised. However, RMBC's Landscaping Team have not raised a formal objection to the proposals on visual amenity grounds.

### Lighting

The applicant indicates that it is proposed for the site to operate for 24 hours a day during drilling activities (Stage 2) and temporary lighting will therefore be installed to ensure that the site can operate safely. This will be for a limited period during the lifetime of the proposed development and the most intensive working periods will be limited in duration to 21 weeks.

Lighting will be located to avoid direct glare outside the site and will be shielded to direct light to where it is needed. The lighting will be shielded and directed to where it is required. Lighting levels will be minimised to the lowest level possible, there is no potential for direct glare impacts at these properties. The drilling rig will have lighting on its mast, but these are limited in both intensity and number. The lighting will be relatively low level and directed at the rig itself. The applicant goes on to indicate that this is designed for safety of working purposes rather than lighting a wider area. Whilst this will make the rig visible at night, there should be no significant effects such as direct glare to habitable room windows.

In terms of the Dark Night Skies Assessment FoE have raised further concerns with 24hr drilling (and subsequent lighting) for a period of at least 5 months in an Area of High Landscape Value:

*"The LVIA has also not provided any such assessment, indeed - as highlighted above - there is no indication of what the scheme will look like during the day or night. While the drilling aspects of the development are more temporary, surely the AHLV the site is located within should justify such further requests. This would establish how views from the nearest sensitive receptors (including houses, roads and footpaths) would be affected, as well as impacts on the perception of the landscape."*

Local Airports (Doncaster Robin Hood, Sheffield) as well as the Civil Aviation Authority have raised no objections from a safety aspect and the lighting is not considered to have any adverse impact on flight navigation systems.

On the issue of light, the Council's Environmental Health department note that the site is to have lighting as it will operate 24 hours. This is shown in draft format though no detailed design of the lighting units has been shown, including Lux levels. However, Environmental Health consider that this element could be satisfactory controlled by condition, including the type and intensity of lights, types of masking or baffle at head, as well as the number, height and colour of lighting columns.

Overall, whilst the development is in a moderately sensitive location, with identified, short-term substantial adverse landscape and visual effects, RMBC's Landscaping Team have not raised a formal objection against the development from a visual amenity perspective. On balance therefore, and taking into account the objections raised, it is

not therefore considered that a refusal against the development on visual amenity grounds could be sustained.

### Archaeology

In line with the requirements set out in Paragraphs 128 and 129 of the NPPF the applicant has described the significance of the heritage assets and the level of detail is considered proportionate to understand the assets' importance and the potential impact of the proposal on their significance.

The Environmental Report includes a desk based archaeological assessment and a geophysical survey, which concludes that there should not be a significant effect on built heritage or designated assets. The geophysical survey, along with aerial photography analysis has shown a series of linear features across the site. It is not clear whether these are archaeological or geological in nature. Following comments from the South Yorkshire Archaeologist, further archaeological and trial trenching has been undertaken to inform a detailed programme of mitigation.

Emerging policy further notes that the preservation of archaeological remains in situ is the preferred solution, but where this is not justified preservation by record would be acceptable.

The applicant initially indicated that there is potential for non-designated heritage assets to be discovered on the site, but on the basis of the desk based report and investigations available to date, these are unlikely to be significant. Following further discussions with SYAS a more comprehensive Archaeological Evaluation Report was submitted.

Ten trenches measuring 25 m in length and 2 m in width were positioned to both intercept geophysical anomalies and target a small portion of the Site outside the geophysically investigated area. Trenches 2, 3 and 6 were extended to try to establish the expanse of identified archaeological features.

A very small quantity of finds was recovered, in which datable material ranges from prehistoric to Post-medieval. Finds came from four of the trenches excavated (Trenches 6, 8, 9 and 10), with a concentration in Trench 6.

Ditches were identified in all trenches except one. These linear features correspond to elements of an extensive field system visible as crop marks on aerial photographs confirmed by geophysical survey. The linear features may be a series of boundary ditches; some of the features form smaller plots, others, together with pits and postholes, may define a variety of sub-rectangular enclosures. The field systems may represent a rationalisation of the landscape and planned division, designed for efficient management of land and pastoral animal economy. If so, the scale of the boundaries reflects the size of the social group that constructed them and indicates the importance of the boundaries in the landscape.

The finds assemblage is extremely modest, with a limited range of materials present. One worked prehistoric flint was found in Trench 9. Two Romano-British fragments of pottery came from each Trench 6 and Trench 9; one late medieval sherd came from Trench 6. Tobacco pipe fragment were found in Trench 6 and so was a small amount of slag. One ferrous and one copper alloy artefacts were recovered from Trenches 8 and

10 respectively. Land adjacent to Common Road, Harthill, Rotherham Archaeological Evaluation Report 10. SYAS indicated that the palaeo-environmental sampling from all excavated features did not add to their understanding of these features. The remains identified are generally consistent with bioturbation and show a high possibility of contamination by later intrusive elements.

The South Yorkshire Archaeology Service assessed the report and concluded that there are significant archaeological features within the proposed development boundary. However, SYAS considers that the archaeological requirements can be dealt with by imposing a two-part archaeological condition which would mitigate their concerns.

### Heritage

National Policy seeks positive management of the historic environment. Where there is likely to be an effect on a heritage asset its significance needs to be understood and a proportionate assessment of the effects of the development must be undertaken. Where a development will result in effects on a non-designated heritage asset, policy notes that a balanced judgement must be made having regard to the scale of any loss.

The UDP seeks to protect and enhance the historic environment, whilst supporting appropriate development. The Core Strategy has a similar aim and notes that proposals will be supported which protect the heritage significance and setting of locally identified heritage assets.

The site does not have any listed buildings, scheduled ancient monuments and is not within a conservation area. There will be no direct effects on any surface based heritage assets. There are a number of listed buildings in Thorpe Salvin and Harthill. However, these are all village related structures (houses, church stones, sundials, threshing barns, etc) which are located within the villages. Whilst there may be some visibility of the drilling rig when that is on site, it is considered that the development would be unlikely to have any direct effect on the structures or their setting. In any event, any impact would be temporary.

Historic England have raised no objections to this aspect of the proposals.

### Noise and Vibration

The aspect under consideration in this planning application relates primarily due to noise from traffic and access into the site associated with the development. Any noise emissions to air, water or land associated with the regulated activities on the site including noise and vibration, odour and fugitive emissions are regulated under Environmental Permits. The EA are responsible for granting or refusing Environmental Permits and if the former, setting any conditions and ensuring that permit holders comply with these conditions.

The permit issued by the EA seeks to regulate noise and vibration arising from the oil and gas prospecting activities. This relates to noise and vibration generated from those activities that extract / process material that is classed as waste. Materials that are brought out of the well as a result of these activities are classed as waste.

The mining waste permit has regulatory control over noise and vibration arising from:

- Operations and equipment within the permitted surface operation boundary which is used in the handling / treatment of waste material.

A mining waste permit does **not** have regulatory control over noise and vibration arising from:

- Operations and equipment used for any treatment/movement/use of non-waste materials.
- All operations and equipment not within the permitted surface operation boundary and therefore not engaged in activities regulated by the permit. For example; noise from vehicle movements outside the permitted surface operation boundary.

Paragraph 144 of the NPPF requires decision-makers to ensure that there are no unacceptable adverse impacts upon human health and that they take into account the cumulative effect of impacts from individual sites. The applicant states that the works will be conformant with the Industry Standards including the Borehole Sites & Regulations 1995, the Construction (Design & Management) Regulations 2007, and the Offshore Installations & Wells (Design & Construction etc.) Regulations 1996.

The main issue of potential public health concern raised by consultees has been identified as noise and vibration. This is most likely to be encountered during stages 1 and 2, with the possibility of some recurrence in stage 3a, if it is required. The applicant has considered the potential for noise to arise from the proposed works, and noted the possibility for night time noise from the site.

While it is inevitable that some noise will arise from works of this type, the applicant has considered this potential and considered the potential within the noise report. This concludes that the noise arising from the construction will be lower than the night time noise LAeq, 1hour of 42dB, at 37dB.

The applicant further proposes sympathetic working practices such as bunding and silencers/noise attenuation equipment in order to mitigate any potential for nuisance. Noise has also been identified as a potential source of concern by the local community. It would therefore be prudent for the applicant to ensure that the local community is kept up to date with progress on works and gives advance warning (as far as possible) of any particularly noisy periods.

Overall based on the information contained in the application Public Health England have raised no significant concerns regarding the risk to the health of the local population from the installation.

In terms of the hours of operation, the applicant has indicated that site preparation, earthworks, site construction and HGV deliveries shall only take place during the hours of 07.00 hours and 19.00 hours Monday to Friday and Saturday 07.00 hours and 13.00 hours, unless there is an operational need which has been agreed in writing in advance with the Minerals Planning Authority.

Assembly and demobilisation of the drilling rigs at the wellsite shall only take place during the hours of 07.00 hours and 19.00 hours Monday to Saturday.

In their roles as a planning consultee on this application, the EA have raised no objections to the proposal, subject to a recommended condition in case potential ground



contamination is discovered. The Environmental Permit will regulate noise and vibration from the oil and gas prospecting activities and the operator will have to abide by the permit.

In terms of the Council's Environmental Health department (EHO), this would seek to regulate operations and equipment used for any treatment/movement/use of non-waste material and noise from vehicle movements outside the permitted surface operation boundary.

The noise modelling has been carried out using SondPLAN software(v 7.4). The model has been run using a receiver height of 5m to represent the noise impact from night-time operations that would be experienced on the top floors (to represent bedroom space). This is to assess any potential noise disturbance that the occupier may experience at the property which may affect their sleep. The model can also predict the noise levels at the ground floor whilst calculating the top floor. The model has predicted the noise level to be the same on the ground floor as on the top floor and so there are no differences in noise levels between the floors.

The EHO notes that the existing background noise levels are low and the area is very quiet. Any additional noise will be noticed and is likely to have an effect on Harthill residents as the daytime background could potentially increase by 20 dB. However, the EHO have confirmed that the proposals would be in accordance with BS5228: 2009+A1:2014 as the noise levels do not exceed the threshold categories.

Providing that the working hours for construction work are restricted to daytime only then Environmental Health do not consider that there will be any significant or adverse health impact on local residents during the evening or the night time periods.

Road traffic noise is being predicted to be notable as heavy goods vehicles (HGV) will be using Common Road to access the site; but since there are no noise sensitive receptors along this route the impact from this additional traffic has not been calculated by the applicant.

The rig noise (which is a 24 hour process) has been calculated as being 37 dB LAeq,1h (free field). When this is compared to the existing measured background noise levels the background noise will increase by 3dB during the daytime and 4dB evening and night time periods. This increase is considered to have a negligible impact on residents during the daytime period and is not likely to affect any residents during the night time period.

Overall, Environmental Health have raised no objections to the application, subject to conditions on noise monitoring. The proposals will potentially have adverse health effects on local residents mainly during the daytime period. However the noise impact from the drilling will be temporary with a maximum duration of 3 months. It is recommended that a condition detailing rig specifications be incorporated into any future permission as well conditions detailing a noise monitoring strategy and management plan to ensure that noise levels will be at or below the night time (22:00-07:00) level of 37dB and day and evening time (07:00-22:00) levels of 55 dB.

Well Design and safety

The detailed design of shale oil and gas wells is not an issue that is the Local Planning Authority can assess. An oil or gas well is a complex engineered construction, most of which is below ground and not accessible to visual inspection.

The detailed well design is regulated by the Health and Safety Executive. The HSE have indicated that wells drilled to explore for shale oil or gas are designed and constructed to the same standards as all other oil and gas wells that have been in operation in UK for a number of years. There have been 350 onshore oil and gas wells drilled in the UK since 2000.

HSE's regulatory approach has two main elements:

1. *Specialist well engineers help develop best practice standards for the industry as a whole.*
2. *Risk-based interventions on particular sites and operators to ensure the operator is managing risk to well integrity in the appropriate way.*

All wells must be constructed to recognised industry standards and are cased using steel and cement to ensure the risk of an unplanned leak of fluids is as low as reasonably practicable. Near the surface, where there is nearby groundwater, or an aquifer, there are normally three layers of this steel casing. The operator will conduct a range of checks on the well to test for leaks. Suitable well control equipment must also be provided to protect against the risk of a release of fluids (liquid or gas) from the well.

The Borehole Sites and Operations Regulations 1995 (BSOR) apply to all onshore oil and gas wells. These Regulations require notifications to be sent to HSE about the design, construction and operation of wells, and the development of a health and safety plan which sets out how risks are managed on site.

The Offshore Installations and Wells (Design and Construction etc) Regulations 1996 (DCR) include specific requirements for all wells, whether onshore or offshore, and include well integrity provisions which apply throughout the life of shale gas or oil wells. They also require the well operator to send a weekly report to HSE during the construction of the well so that inspectors can check that work is progressing as described in the notification.

The operator must also appoint an independent well examiner who has an important quality control role in ensuring that the well is designed, constructed operated and abandoned to industry and company standards and that regulatory requirements are met.

This combination of duties ensures that HSE is provided with information at key stages in the lifecycle of a well and allows HSE inspectors to assess whether risks are being adequately controlled and, if not, to take the appropriate regulatory action.

To comply with BSOR, the well operator must submit a notification to HSE at least 21 days before work commences. It consists of information on the design and construction of the well including:

- The design of the well,
- Equipment to be used,
- Programme of work,

- Location, depth and direction of the borehole,
- Its relationship with other wells and mines,
- The geology of the drilling site,
- Risks identified with the work and how these risks will be managed.

In this instance the HSE have not raised any objections to the proposal at the planning application stage.

Any concerns raised by objectors about the detail of well design and its construction and integrity would be controlled by the Design and Construction Regulations. The operator must report to HSE every week during construction of the well and during work to abandon the well. This provides HSE with assurance that the operator is constructing and operating the well as described in the notification. If they are not, HSE can take the appropriate regulatory action.

The weekly report gives details of all work that has taken place since the previous report including:

- Well integrity tests,
- The depth and diameter of the borehole,
- The depth and diameter of the well casing,
- details of the drill fluid density which allows the inspector to gauge the pressure in the well and identify any stability issues.

There is also a specific set of occurrences that the well operator must report to HSE under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations):

- A blowout, ie an uncontrolled flow of well fluids,
- The unplanned use of blowout prevention equipment,
- The unexpected detection of H<sub>2</sub>S (hydrogen sulphide – an explosive gas),
- Failure to maintain minimum separation distance between wells,
- Mechanical failure of any safety-critical element of a well.

### Air Quality

Emissions to air would include vehicle and equipment exhaust fumes, dust and potentially hydrocarbon release (methane) during the drilling period.

Road traffic associated with the proposal would produce emissions to air during the temporary construction and drilling phases. The applicant considers that these are likely to be of a similar scale to any construction site. Dust from site preparation, construction and vehicle passage on access roads will be controlled with standard dust-control measures.

RMBC's Air Quality Officer has confirmed that the site is not in an Air Quality Management Area and so is not at risk of exceeding the national objectives for common pollutants. The development is not considered to generate a level of traffic which would suggest that there will be a vehicle emission related air quality issue in this area. The key phase of development when air quality impacts could occur is during construction and particularly during phases 1 and 2. The Environmental Report and Proposals set out a range of industry best practice mitigation measures which will ensure that dust

suppression measures are in place. These include selecting and maintaining equipment, as well as simple practices like sheeting lorries which deliver loose materials, damping down any exposed earth in dry and windy conditions, and seeding stored top soil bunds to bind soil.

Rotherham's Community Protection Team have been contacted by members of the public and have started to monitor levels of air pollution in the area. This monitoring will be on-going. Overall, it is considered that a monitoring regime to be carried out during the timeframe of the application should be conditioned.

### Flood Risk

The applicant has undertaken a Flood Risk Assessment (FRA) to support the proposed development. The applicant highlights that the proposed development is located within Flood Zone 3a (risk to the site of a 1 in 100 year fluvial event – 1% Annual Exceedance Probability (AEP)) based on Environment Agency mapping.

The applicant indicates that flooding, residual and climate change impacts have been assessed as negligible due to Environment Agency flood maps showing the proposal as having a 'Very Low' risk of flooding from fluvial and pluvial water sources and based on the topography of the site and surrounding area.

The EA have not raised any objections on flood risk grounds and the proposal is not anticipated to result in any material increase in flood risk elsewhere.

RMBC's Drainage Officer has raised no objections to the proposal from a flood risk perspective.

### Drainage

The applicant has summarised the proposals to protect groundwater sources and prevent cross-contamination occurring from surface water runoff in the table below. It is considered that the stage 1, followed by stage 2 of the process is the most critical to ensure prevention of surface water runoff becoming contaminated. A number of these issues will also be covered by the permitting process of the EA as well as good well design monitored by the HSE.

#### **Stage 1**

<b>Aim</b>	<b>Measures built into Proposal</b>
Prevent pollution of soil, groundwater or surface water from leaks from construction vehicles or on-site tanks	<p>A triple-layered geotextile/ HDPE membrane would be laid between the site surface and soil by a qualified groundwork contractor under a Construction Quality Assurance Plan to make an impermeable site surface.</p> <p>All fuels, oils, lubricants and other chemicals would be stored in double-</p>

	<p>skinned tanks (or a bunded, impermeable area) to provide appropriate secondary containment</p> <p>All vehicles would be maintained regularly and would be subject to daily inspection at the start of the working day by plant operatives.</p> <p>Any equipment maintenance would take place in a designated area within the construction compound where reasonably practicable.</p> <p>Fuel and oil deliveries and any refuelling on-site would only be undertaken in appropriate impermeable areas. Double-skinned fuel tanks (or a bunded, impermeable area) would be used for refuelling trucks and pumps as well as fuel storage.</p> <p>Standing machinery and refuelling points would have drip trays placed underneath to prevent oil and fuel leaks causing pollution.</p> <p>Spill kits would be present on-site, and staff trained in spill response via contingency plans.</p> <p>On-site welfare facilities would be adequately designed and maintained, and all sanitary waste water and sewage would be removed from site by licensed waste contractors</p>
Prevent pollution of soil, groundwater or surface water from runoff from site surface	<p>No water would be discharged from the site to the surrounding environment once the drainage system was in place. All water would be removed from site by a licensed waste contractor.</p> <p>Works would be undertaken in suitable weather conditions to prevent silting of watercourses (especially avoiding periods of high rainfall).</p> <p>Runoff from access tracks would be to the surrounding road / field drainage. Aggregate used on these would ensure sediment laden runoff was not produced.</p>
Prevent pollution from other construction	Concrete mixing for the rig pad would be

activities	<p>undertaken by a mixer unit, with the components of the concrete enclosed in the unit prior to and during mixing. The mixer would be used on the lined site only.</p> <p>Shutters would be used when concrete is poured, and no concrete would be used where there is standing water.</p> <p>Pumps would be used to keep excavations dry if needed.</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>
Prevention of pollution of soil, groundwater or surface water from installing conductor and monitoring boreholes	<p>Borehole design and operation (for example, fluids to be used) would be approved by Environment Agency (via Environmental Permit), Oil and Gas Authority, HSE, Coal Authority and an accredited Independent Well Examiner prior to drilling.</p> <p>Only air and water based fluids would be used as drilling fluids to install the conductor/ surface casing and monitoring boreholes.</p> <p>Once installed the cellar and conductor/ surface casing would be checked to ensure there are no leaks to the environment.</p>
Prevent pollution of watercourses through engineering works	<p>The Environment Agency permits engineering works in the water environment where required, through Flood Risk Activity permits. The site is located over 100 m from the nearest watercourse, and good practice to prevent silting and dust would prevent harm to the watercourse as a result of engineering works.</p>
Monitoring	<p>The site will be subject to an</p>

	<p>Environmental Monitoring Plan to be agreed with the Environment Agency. The area around the site (soils, field drains etc.) would be checked daily for visual signs of pollution (e.g. fuel oil, noticeable silting). An Environmental Clerk of Works would be present during Stage 1 to oversee the enabling works and construction and ensure operations proceed in accordance with management plans and planning conditions. Mitigation measures put in place (e.g. impermeable membrane, drainage system etc.), would be inspected regularly and suitably maintained to ensure they remain fully operational and effective. Where failures or shortfalls within mitigation measures were noted, these would be recorded, action identified and undertaken within a suitable timeframe.</p>
<b>Stage 2</b>	
<p>Preventing pollution of soil, groundwater or surface water from leaks from construction vehicles or on-site tanks</p>	<p>The geomembrane and “closed loop” drainage system would be maintained to ensure all liquids remained on the site for removal by a licensed waste contractor, and treatment prior to disposal if required.</p> <p>Frequent checking of integrity of site surface and drainage system.</p> <p>Cement mixing for well cement would take place in truck-mounted silos on the concrete hardstanding area.</p> <p>Rigs would be refuelled from dedicated tanks, which would be filled directly from fuel tankers that deliver to the site.</p> <p>This would be undertaken in the hardstanding area to ensure any spillage would drain to the impermeable cellar rather than the perimeter drainage pipe.</p> <p>Drilling fluids (muds) would be stored in a mud tank with a closed-loop system to prevent leakage.</p> <p>Water for the drilling process would be</p>

	contained within a closed-loop system with any potential excess water from the drilling process being transported off site in suitable tankers by a licensed contractor.
INEOS Safety Health and Environment (SHE) representative will ensure operations proceed in accordance with management plans and planning conditions	The area surrounding the site would be checked daily for visual signs of pollution (e.g. fuel oil, leakage from perimeter, noticeable silting) in accordance with the Environmental Monitoring Plan to be agreed with the Environment Agency.

The applicant has indicated that any water falling onto site would feed into the site perimeter drain and be removed by a licensed waste contractor for treatment and disposal as appropriate. It is intended that all rain falling on the whole of the site for the whole duration of phases 2-4 will either be removed from site by tanker or used on site. The liner passes under the perimeter pipe and then extends up into the face of the surrounding bund, to ensure that the entire system is sealed. This is shown on the site sections (drawing 304-S2-PA-16 Rev A).

The applicant has confirmed that the access track will not be lined. Run off from the access track will either permeate through the track, or run off to the sides. It is not intended to direct any of this flow into a highway drain. It would all be directed back to the field to soak away.

In terms of discharge from the onsite pumps, the applicant has confirmed that the system is closed and the perimeter ditch will collect water, which will be pumped to an above ground storage tank, which also sits on the lined area of the site. Tankers will come to empty the storage tank as required.

Some concerns were raised regarding the potential for perimeter bunds within the field having the potential to interrupt natural flow paths. The applicant has confirmed that field drainage will be maintained. They go onto indicate that a drainage strategy has been adopted which relies on a combination of (a) natural run off and soaking away at the fringe areas around the well pad and on the access track, to (b) a contained system which drains by gravity to a ditch and sump within the sealed working area.

The applicant goes onto indicate that using OS contour data, the site sits at the watershed, but seems to primarily slope down towards Bondhay Dike. However, the site will be levelled and for the most part lined and isolated from the surface water regime, with all water being collected by tanker. There will be areas where the site is not lined (access track and bunds). They anticipate that these will simply soakaway in the same manner as the existing land, so this should leave a neutral effect. On this basis, the applicant has asserted that the direction of the drainage is unlikely to be a material factor.

Regarding a future water supply to the site, Yorkshire Water have confirmed that there are no groundwater abstractions for the public water in the vicinity of the proposed development. The site is remote from the existing water supply network and Yorkshire Water have raised no objections to the proposals.



The Severn Trent Water Authority have not commented on the proposals, despite several consultee notifications.

The EA have raised no objections to this aspect of the proposal but have indicated that the permit will require an operator to manage the site in accordance with a Waste Management Plan (WMP). A standard WMP has been produced to accompany the standard rules permit which the operator is expected to follow. The WMP sets out measures for the appropriate management of an uncontrolled discharge, as in a 'spill', on site.

After several clarifications RMBC's Drainage Officer has confirmed that the drainage aspects of the proposal are acceptable, subject to condition.

#### Hydrology and groundwater

In terms of potential future contamination of groundwater, this would generally be assessed as part of the overall Well Design and would be covered by other regulators, in particular the HSE and the EA.

The main issues relevant to hydrogeology include: the prevention of groundwater pollution from spillages and the handling/management of drilling fluids and cuttings. Prevention of the escape of drilling fluids, gas and formation fluids into groundwater by good well design.

In terms of surface damage, it is understood that site vehicles tracking on bare ground would have appropriate tyres to prevent damage, the use of temporary tracks or peat-boards, minimal works undertaken in periods of high rainfall. Bunding would ensure soils were stored appropriately, and kept separate from other construction activities. Vegetation removal would be minimised and works would be undertaken to minimise the area of soils exposed at any one time.

The applicant has supplied an indication of Environmental Protection Measures during ground restoration works which can be summarised as follows:

Aim	Measures built into Proposal
Prevent soil damage during soil strip prior to laying of membrane/development of access tracks	<p>Site vehicles tracking on bare ground would have appropriate tyres to prevent damage.</p> <p>If large numbers of vehicle movements are needed on bare ground, temporary tracks or peat-boards would be used.</p> <p>Works would be undertaken in suitable weather conditions to prevent soil damage (especially avoiding periods of high rainfall).</p> <p>Bunding would ensure soils were stored appropriately, and kept separate from other construction activities.</p> <p>Vegetation removal would be minimised and carried out according to good practice. Works would be undertaken to minimise the area of soils exposed at any one time.</p>

	Barriers and/or netting would be used to prevent vehicle movements in sensitive areas.
Preventing pollution of aquifer during drilling	<p>Appropriate well design would be used. Any potential excess water or mud from the drilling process would be transported off site in suitable tankers.</p> <p>Drilling activities would be designed to ensure that there would be no inputs of pollutants to groundwater.</p> <p>Drilling fluids would be used in accordance with good practice as described in the Health and Safety Executive (HSE)'s guidance on 'The Offshore Installations and Wells (Design and Construction etc.) Regulations 1996' (DCR)) (in particular that they would be designed to prevent exchange of fluids between the borehole and any groundwater-bearing formation) and Borehole Sites Operations Regulations 1995.</p> <p>Drilling fluids would exclude hazardous substances as defined in paragraph 4 of Schedule 22 to the EPR 2016</p> <p>If karstic or highly fissured conditions were anticipated, INEOS would gain the Environment Agency's agreement to use any additives other than inert materials.</p> <p>Casing would be installed and cemented into the low permeability formation beneath the groundwater body once that formation was reached. The maximum depth defined for a groundwater body is taken to be 400 m. (the surface casing for this well is anticipated to extend to 470 m (1,550 ft.) to isolate old mine workings).</p>
Preventing pollution of soil, groundwater or surface water from leaks from construction vehicles or on-site tanks	<p>The geomembrane and "closed-loop" drainage system would be maintained to ensure all liquids remained on the site for removal by a licensed waste contractor, and treatment prior to disposal if required.</p> <p>Frequent checking of integrity of site surface and drainage system.</p> <p>Cement mixing for well cement would take place in truck-mounted silos on the hardstanding area. Rigs would be refuelled from dedicated tanks, which would be filled directly from fuel tankers that deliver to the site. This would be undertaken in the hardstanding area to ensure any spillage would drain to the impermeable cellar rather than the perimeter drainage pipe.</p> <p>Drilling fluids (muds) would be stored in a mud tank with a closed-loop system to prevent leakage.</p> <p>Water for the drilling process would be contained within a closed-loop system with any potential excess water from the</p>

	drilling process being transported off site in suitable tankers by a licensed contractor.
Minimising soil damage during ground restoration works	<p>Once the site surface membrane was removed, care would be taken to avoid pollution of soil, groundwater or surface water from fuel leaks or routine activities during ground restoration.</p> <p>Aggregate and concrete (pad and cellar) would be fully removed from site before the impermeable liner was removed so any residual contamination would not be washed into soil.</p>
Avoid pollution of aquifer during decommissioning	Measures would be taken when decommissioning the vertical core well to ensure there would be 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.
Prevention of leaks of gas or suspension fluid from vertical core well once abandoned	<p>At decommissioning, two permanent barriers would be set within the wellbore to seal the well.</p> <p>The well has been designed in accordance with the Borehole Regulations reviewed by the HSE and by an independent third party well examiner to ensure wellbore integrity.</p> <p>Suspension/ Decommissioning fluid would be brine</p>

The applicant has indicated that the methods in the restoration and aftercare plan would be followed to prevent soil damage. Once the site surface membrane was removed, care would be taken to avoid pollution of soil, groundwater or surface water from fuel leaks or routine activities during ground restoration. Aggregate and concrete (pad and cellar) would be fully removed from site before the impermeable liner was removed so any residual contamination would not be washed into soil.

The applicant has briefly outlined the measures that would be taken when decommissioning the vertical core well to ensure there would be 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.

The applicant indicates that the well has been designed in accordance with the Borehole Regulations reviewed by the HSE and by an independent third party well examiner to ensure wellbore integrity.

FoE, along with other objectors have raised the issue of the Water Framework (EU) Directive. The EU Water Framework Directive applies to surface waters (including some coastal waters) and groundwater (water in underground rock). It requires member states, among other things, to prevent deterioration of aquatic ecosystems and protect, enhance and restore water bodies to 'good' status.

The objection goes on to indicate that there is no definitive guarantee that groundwater contamination will not occur (either directly or indirectly). Despite the issuing of a license by the Environment Agency, there have been concerns raised from other independent bodies with regard to the general ability of UK regulators to assess impacts so deep underground. Unconventional vertical and horizontal drilling is undertaken at substantially deeper levels, with unknown volumes of drilling fluids from this development likely to remain within the ground.

Within their objection FoE also highlight that North Lincolnshire Council have refused two applications on the same site (one a resubmission of the original scheme refused last year) for non high volume fracking, principally due to envisaged impacts to groundwater, despite the EA issuing permits for groundwater monitoring.

The Council acknowledges the above comments, but considers that the potential impact on groundwater sources is not an issue that would be covered within the planning regulatory aspect of the application. This is considered an issue that would be covered by satisfactory well design and is regulated by the Environmental Permit and overseen by the HSE.

#### *EA Permitting*

The EA are responsible for granting or refusing Environmental Permits and if the former, setting any conditions and ensuring that permit holders comply with these conditions. Environmental permitting is the method by which specific industrial and commercial activities are regulated to protect the environment and people.

The permitting process is completely separate from the planning process. The planning process determines whether the development is an acceptable use of land, taking into account the impact of the proposed use, and considers a broad range of matters such as visual impact, traffic and access, which do not form part of our permit decision-making process. Permits allow sites to operate, within certain environmental constraints, once built.

The EA go on to indicate that a mining waste operation permit is required under EPR 2010 for this activity. It is noted that the proposals at this time include no hydrocarbon production/storage and no hydraulic fracturing activities. Should future development of the site operations intend to include such operations then further permissions under the EPR regulations may be required, potentially including a radioactive substances activity permit, an installation permit and/or a groundwater activity permit.

The applicant, INEOS Shale Ltd, has applied for a standard rules permit (SR2015 No.1) entitled:

*The management of extractive waste, not including a waste facility, generated from onshore oil and gas prospecting activities including drilling, coring, leak off testing (LOT), acid wash and decommissioning but excluding hydraulic fracturing for the production of oil or gas (using oil and water based drilling mud)*

The Environment Agency has indicated that a permit has been approved and conditions are in place requiring controls for the following areas:

- The management of the site
- The drilling operations on the site

- Any emissions to air, water or land associated with the regulated activities on the site including noise and vibration, odour and fugitive emissions
- Monitoring requirements (as specified in the waste management plan) associated with the regulated activities on the site
- Information requirements including record keeping, reporting and actions requiring notification to the Environment Agency

Paragraph 122 of the National Planning Policy Framework states that “local planning authorities should focus on whether the development itself is an acceptable use of the land, and the impact of the use, rather than the control of processes or emissions themselves where these are subject to approval under pollution control regimes. Local planning authorities should assume that these regimes will operate effectively.”

The above paragraph makes it clear to planning authorities they should assume that where processes or emissions are subject to approval under pollution control regimes these will be effectively controlled. Accordingly, it is considered that this element of the proposal would be adequately regulated by other environmental legislation.

As indicated in the paragraphs above the HSE and EA have not raised objections on potential future groundwater contamination. The detailed wellhead design would be subject to separate legation by an independent third party well examiner to ensure wellbore integrity. From a Development Management standpoint there are no objections to this element of the proposals.

#### Ground contamination, land stability and impact on mining legacy

In terms of land stability and historic subsidence, South Yorkshire Mining Advisory Service (SYMAS) has indicated that the area has been subject to deep coal mining with three coal seams have been worked as follows:

Clowne	depth ~284m worked in the 1970s
High Hazels	depth ~382m worked in the 1960s/1970s
Barnsley	depth ~466m worked in the 1920s

SYMAS indicate that the abandonment plan records indicate that the proposed drill well will intercept Barnsley coal seams working at a depth of approximately 466m. There are no mine workings from other coal seams directly beneath the proposed borehole.

SYMAS indicate that deep coal mining subsidence has now ceased and the area can be regarded as stable. They have raised no objections to this aspect and indicate that well design would be subject to approval by other regulators (Oil and Gas Authority, Coal Authority, HSE and EA).

The Coal Authority have indicated that the application site does not fall with the defined Development High Risk Area and is located instead within the defined Development Low Risk Area. There is therefore no requirement under the risk-based approach that has been agreed with the LPA for a Coal Mining Risk Assessment to be submitted. The Coal Authority have therefore not raised any objections to proposal, though they have recommended that The Coal Authority’s Standing Advice should be included within the Decision Notice as an informative note to the applicant in the interests of public health and safety.

### Specific ground contamination issues

The application site has predominantly been used for agricultural purposes since the 1850's and it is therefore unlikely that significant contamination of the land has occurred. There may be some potential for minor contamination to exist within the surface soils from the use of insecticides, pesticides, agricultural machinery, unrecorded deposited wastes and natural sources of contamination.

There is a historic landfill near to the site which is not considered to be affected by the proposed development. Environment Agency records indicate the presence of a historic landfill located approximately 100 m southeast of the site at Loscar Quarry, Common Road. The records indicate that the waste deposited at this site was inert (ie waste which remains largely unaltered once buried such as glass, concrete, bricks, tiles, soil and stones); and that waste disposal activities at the site ceased in 1980.

RMBC's Pollution Control Officer has indicated that the definition of inert waste prior to the 1990's is varied and that no assumptions should be made regarding the potential for landfill gas in the area without investigation having taken place. It is considered that this could be controlled via condition.

The Pollution Control Officer has indicated that inert waste poses a low risk of generating leachate which may migrate into shallow surface waters. Embedded mitigation measures in the proposal around groundwater monitoring will provide the opportunity to establish current groundwater quality prior to commencement of the proposal operations.

The vertical exploratory well to be installed will pass through gas bearing stratum and a release of methane gas could occur. The Environmental Report provided by INEOS confirms that gas monitoring is to be undertaken on a continuous basis during the drilling works but is light on any details and how it will be reported. It is suggested that gas venting/flaring will not be required at the site. No information has been provided to suggest that any gas monitoring wells will be installed at the site to assess for any potential migration of methane gas or the impact of gases generated from off-site sources.

The applicant indicates that any surface water that is generated at the site will be retained on site and then removed by an approved Waste Management Licenced Contractor. It is reported that no water will be discharged from site to the surrounding environment once a drainage system for the site is put in place. However, the site is located on an elevated plateau and any waters/accidental spillages will run towards nearby water courses and surface water features. The Pollution Control Officer indicates that measures to be put in place to ensure the collection and disposal of contaminated waters (flow back waters from the drilling techniques used) produced as part of the exploratory investigations should be deemed to be adequate and sufficient.

Three groundwater monitoring boreholes have been proposed to monitor groundwater quality at the application site. It would appear two are to be located on the western boundary with one being located on the eastern boundary of the site. The groundwater boreholes to be installed are reported to fall outside the scope of this planning application and will be installed under Permitted Development Rights. However, no details regarding the groundwater monitoring have been provided along with details of

any surface water monitoring. An environmental monitoring plan will need to be specified and agreed to, to ensure that contamination is monitored for prior to construction, during the exploratory works and post demolition/restoration works. Establishing a monitoring regime will help with the understanding of any environmental impacts from the drilling works and the communication of risks to the community of Harthill.

INEOS have confirmed however that a range of monitoring data will be collected by them and this information will be reported to the Environment Agency. Little information is reported on the monitoring locations, the long term schedule for monitoring and what is being monitored for, particularly in terms of the groundwater and surface water monitoring. This information is suggested will become available under the Environmental Permit to be issued by the EA. RMBC's Pollution Control Officer has also recommended that the Council imposes a planning condition on the proposed monitoring to be undertaken. Details for long term monitoring of exploratory well integrity will also need defining.

The Council's Pollution Control Officer initially raised a concern that INEOS may seek the EA's agreement to use additives other than the inert low-toxic oil based drilling muds currently proposed. This may occur in the event that karstic or highly fissured conditions are encountered (which could be present within the principal aquifer on site of dolomite and limestone bedrock). The concern relates to the potential for future contamination. No specific information has been presented by INEOS what would happen in the event of alternative drilling additives being used or issues around potential well failure. However, this is not an issue that can be addressed within the planning element of the proposal. The site works fall under and to be regulated by the EA under an Environmental Permit which stems from the Environmental Permitting Regulations 2016. The EA consider that these activities are of a 'low risk' operation and therefore only a standard rules permit will be necessary which follow a set of standard rules relating to Waste Management for the site.

Overall it is considered that the majority of any potential ground contamination issues will be safeguarded through the Permitting Regulations outside of this planning process. Subject to any additional planning conditions, this element of the proposal is acceptable.

#### Socio-Economic impacts

Paragraph 120 of the Minerals PPG advises that individual applications for the exploratory phase should be considered on their own merits. They should not be assessed by taking account of hypothetical future activities for which consent has not yet been sought.

A number of objections raise the issue that many of any future jobs created will not necessarily be available to local people, that INEOS are not a local company, and have queried the economic benefit to the local area. A number of the jobs would be short term since the duration of the construction elements of the site are limited.

The applicant refers to potential wider economic benefits of shale gas production at this exploration stage carry limited weight. Although they also acknowledge that there may be some degree of economic dis-benefit to local residents and local businesses in close proximity to the site, these are indicated that the impacts will be localised and short in duration. Pollution control and potential health impacts can be addressed satisfactorily

through planning conditions and other regulatory regimes and these have been discussed in more detail in the paragraphs above.

The numbers of jobs created is not explicitly specified by the applicant and it is not possible to quantify the numbers of jobs. At a regional and national level this is a growing industry and in future years this is likely to contribute to an increasing proportion of the wider UK economy.

### Health impacts

Paragraph 144 of the NPPF requires decision-makers to ensure that there are no unacceptable adverse impacts upon human health and that they take into account the cumulative effect of impacts from individual sites. The Health and Well-Being PPG requires these matters to be considered in the planning decision-making process. The main public health impacts have been discussed in more detail in the paragraphs above, in particular on highway safety aspects, noise and vibration, groundwater supply, surface water quality and flood risk and land contamination and pollution control aspects.

The Environment Agency permit supplies conditions, though these conditions only apply directly to the activities specified by the permit, namely, the management of extractive waste. Additionally the conditions only apply to relevant activities inside the permitted area. Operations on site that are not associated with this activity would not be subject to these permit conditions. Activities outside the permitted area, for example traffic movement on access roads would not be subject to regulation under the permit and need to be considered as part of the planning application.

As indicated within the paragraphs relating to noise and vibration, it is considered that this, along with the volume of construction traffic is likely to have the most impact on public health.

Vibration is separate to seismic activity. Seismic activity is regulated by the Department of Energy and Climate Change (DECC).

As indicated within the noise paragraphs of this appraisal, Public Health England have not raised any objections from a health or noise impact.

Neither the EA nor RMBC's Environmental Health department have raised any objections on this aspect.

### Climate Change

Paragraph 7 of the NPPF highlights the need for the planning system to perform an environmental role, including minimising waste and pollution and mitigating and adapting to climate change including moving to a low carbon economy. Paragraph 93 of the NPPF adds that planning plays a key role in helping to shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change.

The Written Ministerial Statement, Shale Gas and Oil Policy (dated 16 September 2015) ("WMS"), states that there is a national need to explore the UK's shale gas and oil resources. The WMS states that the Government remains fully committed to the



development and deployment of renewable technologies for heat and electricity generation but gas is required to support the Government's climate change target by providing flexibility and reducing reliance upon high-carbon coal. The Government therefore supports the exploration for shale gas as part of the UK's response to climate change.

The WMS represents the Government's position in relation to the need for shale gas exploration and the need for gas to support its climate change target. The potential contribution of this proposed construction of an exploratory well to national greenhouse gas emissions is not likely to be large. The proposed development at the site is not considered to have any significant impact upon the national planning policy objectives relating to climate change. The proposed development is therefore consistent with the NPPF.

The applicant indicates that there is relatively little that an exploratory well can do to minimise its impact upon the causes of climate change. INEOS have indicated that the preferred access route for vehicles is the most appropriate route to the A-road network in order to try and minimise vehicle emissions.

The applicant further indicates that exploration emissions are generally small, although little information is available on emissions associated with exploration. Climate change emissions associated with the proposed development are expected to be predominantly to those from vehicles and drilling equipment which are considered to be generally small and are not considered to be significant.

Objections received indicate that the application contains insufficient information regarding fugitive methane emissions, with the risks therefore unknown. No information is provided regarding Air Quality, especially estimated quantities of escaping gas (leakage) nor how this will be dealt with.

A number of objections have also summarised that they are of the understanding that methane escapes from onshore oil production processes. Methane is an extremely potent heat trapping greenhouse gas and thus leakage of methane from onshore oil sites should form part of a risk assessment.

Whilst this proposed development is for exploration there would not be any well testing which would result in gas releases and there are no plans by the operator to vent methane. Indeed, the conditions of the Mining Waste Permit do not allow any point source emissions from the site. As such, emissions relating to this proposal would primarily be from the vehicle movements associated with the development and the drilling of the exploration well which, as stated in the Committee on Climate Changes report, are likely to be small.

Overall, from a planning standpoint it is not considered that there are any specific objections to this proposal on climate change grounds, and that in wider context and with reference to the general advice of the NPPF, this proposal is not likely to have more affects that are over and above that which could normally be expected on a development of this size.

Cumulative impacts

Objections on cumulative impacts have been raised on this aspect, including FoE. A number of these applications raise the possibility of future hydraulic fracturing taking place on the same of an adjacent site. The objections go onto indicate that this could be a precursor to a longer term development which could last longer than 5 years, once applications to vary restoration conditions and new phase two applications are submitted by Ineos, if phase 1 tests are successful.

FoE have indicated “...that the planning authority should take note of applications for exploratory drilling in other rural areas of other planning authorities, where consideration was also originally for a stand-alone scheme, but where ultimately mission creep set in and overlapping applications to prolong the life of once “temporary” schemes (re via variation of condition and new applications and appeals) are submitted.

The Council is currently considering this site on its own merits and whilst there is a live application in Woodsetts (RB2017/1577) for a similar type of proposed development, this is currently undetermined and is located approximately 5km from the Harthill site.

It is noted that other similar test well drilling applications covered by different PEDL licences have been approved in other local authorities including Mission Springs, Nottinghamshire 2015. There is also an undetermined application by the same operator (INEOS) in Marsh Lane, north east Derbyshire. However these sites are at least 10km from Common Road.

This application is considered to be a singular project that is a discrete proposal that could proceed independently. In terms of the existing wind turbines to the south of the site, the proposed 60m rig is substantially lower than the turbines (approximately 100m in height). It is noted that the rig would only be on site for a short period of time (up to 5 months) in comparison to the turbines which are permanent. As indicated in the landscaping and visual paragraphs above, this is considered to substantially reduce any long term cumulative impact on the surrounding environment.

#### Restoration and after use

The applicant states that if the results of the exploration work do not warrant further development, the wells would be made safe by plugging and abandoning in accordance with the relevant regulations and industry best practice.

The application indicates that the well would be plugged and decommissioned in accordance with good practice and in accordance with Oil and Gas UK Guidelines on Well Abandonment and according to an abandonment plan to be agreed with the Environment Agency, Health and Safety Executive (HSE) and an independent Well Examiner. The application indicates that two permanent tested barriers (cement) will be set within the steel casing to seal the wellbore. The casing would then be cut approximately 2m below surface and capped with a steel plate. All on-site structures including any welfare and support buildings, the well cellar and sump-lining would be removed. Any residual waste or materials would be removed from the site along with the site lining. The land would be re-graded and deep scarified in accordance with best agricultural practice. Stored subsoil and top soil would be loose spread over the re-graded ground and subsoil to relieve compaction. The site would be re-contoured and restored to agricultural use.

The site would be fenced with temporary 'Heras fencing' to allow the permanent fencing and security fencing to be removed. The concrete pad and cellar would be broken for removal by a licensed waste contractor, and aggregate, drainage pipework and other infrastructure would be removed from the surface.

Paragraph 144 of the NPPF states that MPAs should provide for restoration and aftercare at the earliest opportunity, to be carried out to high environmental standards, through the application of appropriate conditions where necessary.

INEOS has applied for a five year planning permission and the supporting statement anticipates that restoration conditions would be used to ensure restoration upon completion of the development. It is considered that this could be adequately be controlled by condition.

It is anticipated that the decommissioning and restoration section of the application would require up to two months to carry out the works in full. The applicant indicates that all restoration would be undertaken in appropriate weather conditions to minimise any further disruption and soil erosion. Access tracks and road amendments (junction amendments or passing place improvements) would also be restored as agreed with the landowner and Highways Authority, or retained for continued use, subject to any necessary further planning consent.

#### Other issues

Many of the public representations to this application have objected for reasons linked to fracking, as set out in the publicity section of this report. Fracking forms no part of this application and the proposals have been assessed on their own merits. No further consideration is given to such comments.

Public representations have stated that granting this application would set a precedent for future fracking applications, and granting this application would inevitably lead to more. Any future application(s) would be assessed on their own merits and do not form part of the decision making process of this application.

South Yorkshire Police have raised concerns that the extraction of Shale oil gas is highly contentious and brings with it many challenges to Policing in the form of protest activity. The main forms of protest have been outlined as follows:

- Local Residents/protest groups blockading the entrance to the site.
- A "slow walk" with protestors walking in front of attending vehicles in an effort to publicise their cause.
- Vehicle occupation – where a protestor will climb onto an attending contractors vehicle and either lock on with some sort of device or simply refuse to remove themselves.
- Lock ons – where a protestor secures themselves to entrance gates to the proposed site or anywhere along the route that would prevent access for vehicles.

Whilst these issues are noted, they are not considered to represent material planning considerations that can be given weight when determining a planning application.

The potential detrimental impact on house prices has been raised. As is the case in all planning applications, this is not a material consideration and cannot be afforded any weight.

A number of objections raise concerns that INEOS (nor other operators) have previous experience of drilling in the UK and the industry remains untested. This is acknowledged, though again this cannot be afforded any planning weight.

The behaviour and profit motives of the industry are also not issues that can be afforded any material planning weight in the determination of this planning application.

## **Conclusion**

The applicant seeks temporary permission for a maximum of 5 years and includes restoration proposals. The site is in an area of open rural Green Belt. This would involve the temporary introduction of built development, but this is temporary and has also been supported by future restoration proposals. National Planning Practice Guidance (NPPG) identifies a pressing need to establish, through exploratory drilling, whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas present to facilitate economically viable full scale production. Restoration works are being proposed as part of the development and overall it is not considered that there would be an adverse effect on the long term permanence of the Green Belt in this area and the proposals are not considered to represent inappropriate development in this Green Belt location and the principle of development in this location is considered acceptable.

From a highway safety perspective, the Transportation Unit have concluded that they are unable to support the application on highway safety grounds. Proposals to mitigate the wider potential impact have been considered, including a Temporary Traffic Regulation Order under Section 14 of the Road Traffic Regulation Act 1984 that would seek to control periods of one way traffic by signs and/or banksmen directing traffic along a diversion route. However, it is not considered that all vehicles could negotiate this route in a safe and satisfactory manner, in particular at the Harthill Field Road junction with Common Road. Therefore, the measures would not satisfactorily address the road safety concerns regarding the introduction of a significant number of additional large commercial vehicles along these narrow country lanes. Limited informal passing places currently available do not allow for a standard sized car to pass a large commercial vehicle. Furthermore, vulnerable road users such as pedestrians, cyclists and horse-riders would be particularly at risk along those parts of the route where there is no verge. Overall, despite the submission of additional information these concerns cannot be satisfactorily addressed.

In terms of Ecology, the impact on wildlife, trees and hedgerows is likely to be low to moderate. However the deficiencies and omissions within the supporting ecological data are of such significance such that these deficiencies cannot be satisfactorily overcome through the imposition of conditions.

On landscaping and visual amenity aspects it is acknowledged that the development will result in substantial adverse landscape and visual effects, although these will be from generally within 1.5km of the site and over the short term only. This will also increase the potential for light pollution. RMBC's Landscaping Team have not formally objected

on visual amenity grounds and it is not considered that there are material grounds for refusal on this aspect.

In terms of noise and vibration no objections have been raised on this aspect from the principal regulators the Environment Agency, RMBC Environmental Health or Public Health England. It is considered that noise levels would not be at such an adverse level that would justify a refusal. Subject to recommended conditions including a noise monitoring strategy and management plan, this is considered to safeguard future noise levels would be contained within acceptable parameters.

In terms of heritage and archaeological impacts, the South Yorkshire Archaeology Service indicated that there are significant archaeological features within the proposed development boundary. However, subject to an archaeological condition this is considered to mitigate this concern. The proposal is not considered to have a detrimental impact on the nearest listed buildings within Harthill village centre. Likewise, Historic England have not objected on heritage grounds and overall there are no objections to this aspect the application.

The site lies within the lowest flood risk level and is not within a known surface water drainage area. Both the Council's Drainage Officer and the Environment Agency have raised no objections to future drainage, subject to conditions. Likewise, the proposal is not considered to materially increase the potential for future flood risk.

The Council is currently considering this site on its own merits and it is not considered that there are any significant cumulative impacts from similar developments due to these being located a distance greater than 5km from this site.

Summarising the issues involving potential future contamination, pollution of ground water and general pollution control issues, as indicated in the appraisal, all issues of well design and construction is considered by the HSE and Environment Agency regulators and is beyond the scope of this planning application. Both regulators have raised no objections to this aspect of the application and there are no planning objections to this element. The Council's Pollution Control Officer has raised no objections, subject to conditions.

A number of other issues have been raised and all representations received have been taken into account. The level of public interest in this application and the volume of objections received from the public is acknowledged, though this does not by itself constitute material grounds for refusal.

Overall therefore it is considered that the proposal fails to satisfactorily address highway safety concerns raised, along with insufficient ecological details submitted, and the application is recommended for refusal on these grounds.

### **Reason for refusal**

01

The Council considers that vehicular access to/egress from the site is intended to be via country lanes which are considered to be unsuitable to cater for the significant increase in commercial vehicular traffic to be generated by the proposal in terms of their limited width, restricted visibility, adverse alignment and lack of separate pedestrian facilities. The development, if implemented, would therefore increase the risk of vehicular conflict with vulnerable road users and other vehicles to the detriment of road safety, contrary to

the National Planning Policy Framework which expects developments to include safe and suitable access for all people.

02

The Council also considers that the supporting ecological information is deficient with no breeding bird survey details submitted, insufficient bat survey details, and a substandard Phase 1 Habitat Survey carried out in January. Accordingly the applicant has not sufficiently demonstrated that the development can satisfactorily mitigate the potential for harm to the ecology of the surrounding rural environment, contrary to paragraph 118 of the National Planning Policy Framework which indicates that if significant harm resulting from a development cannot be avoided then planning permission should be refused.

#### POSITIVE AND PROACTIVE STATEMENT

The applicant did not enter into any pre application discussions with the Local Planning Authority. Discussions during the determination of the application, particularly on highway safety grounds, have identified that it is not possible to support a scheme of this nature and the proposed mitigation would not make it acceptable. Additional ecological information was submitted during these discussions, but these did not overcome the concerns of the Planning Authority. It was not considered to be in accordance with the principles of the National Planning Policy Framework and resulted in this refusal.