INEOS Shale

8. Statement of Community Involvement

Land adjacent to Common Road, Harthill, Rotherham

Construction of a well site and 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 five years on land adjacent to Common Road, near Harthill.

May 2017

INEOS Shale

Statement of Community Involvement

Land adjacent to Common Road, near Harthill

PEDL 304

May 2017

Contents

1. Introduction

This Statement of Community Involvement ("SCI") has been prepared on behalf of INEOS Upstream Limited ("INEOS") to describe the community and stakeholder engagement undertaken to date during the preparation of the planning application for:

> *'Construction of a well site and 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.'* ("the Proposed Development").

The application site comprises land adjacent to Common Road, near Harthill ("the Site") within Rotherham Metropolitan Borough Council ("the Mineral Planning Authority") ("MPA").

Full details of the Proposed Development are set out in The Proposal and the Planning Statement that accompanies the planning application.

The Proposed Development is for exploration activities only, which consists of five phases as follows:

- **Stage 1**: Site Development and Establishment – approximately three months
- **Stage 2**: Drilling, Coring, Pressure Transient Testing and Suspension – approximately five months
- **Stage 3**: Maintenance of the Suspended Well Site – retained until restoration, up to the five-year extent of the application
- **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.
- **Stage 4**: Use of the Well as a Listening Well – up to five weeks as required
- **Stage 5**: Abandonment (Decommissioning) and Restoration – approximately two months

The remainder of this Statement comprises the following sections:

- Section 2: National and Local Policy Guidance
- Section 3: Pre Application Consultation
- Section 4: Public Consultation
- Section 5: Exhibition Feedback
- Section 6: Conclusion

2. National and Local Policy Guidance

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) published in March 2012 sets out the Government's planning policies for England and how these are expected to be applied.

A core principle of the planning system, as expressed in paragraph 17 of the NPPF, is that planning should be genuinely plan-led and empower local people to shape their surroundings.

Paragraph 155 of the NPPF highlights the importance of early and meaningful engagement and collaboration with neighbourhoods, local organisations and businesses. In relation to the creation of Local Plans it states that a wide section of the community should be proactively engaged so the Plan reflects a collective vision.

Paragraph 188 states that:

> "Early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties. Good quality pre-application discussion enables better coordination between public and private resources and improved outcomes for the community."

Paragraphs 190 and 191 encourage pre-submission consultation with statutory consultees and other consenting bodies respectively, in order to highlight and resolve any potential issues at the earliest opportunity. This also enables all parties to establish the type and level of information required and assists in avoiding unnecessary delay and cost.

2.2 Planning Practice Guidance

The Planning Practice Guidance (PPG) published on 6 March 2014 includes information about the role of consultation prior to submitting a planning application.

The guidance highlights how pre-application engagement can offer significant potential to improve both the efficiency and effectiveness of the planning application system and improve the quality of planning applications and their likelihood of success. It is noted that this can be achieved by working collaboratively and openly with interested parties at an early stage to identify, understand and seek to resolve issues associated with a proposed development.

The PPG also notes that stakeholders in the planning process include the local planning authority, statutory and non-statutory consultees, elected members and local people. Each party has an important role to play in ensuring the efficiency and effectiveness of pre-application engagement.

In relation to community consultation, the PPG notes that although engagement with the community is not compulsory whilst preparing a planning application (except for some onshore wind-turbine applications), it is encouraged where it will add value to the process and the outcome.

2.3 MPA's Statement of Community Involvement

Rotherham Metropolitan Borough Council's Statement of Community Involvement ("SoCI") was adopted in June 2015, and it describes the MPA's overall approach to community engagement and involvement in the planning process.

In relation to planning applications, the SoCI sets out that:

- The MPA places a strong emphasis on early engagement and aims to work with applicants in a positive and pro-active manner. To aid potential applicants in this process, the Council offers a pre-application service to help resolve issues at any early stage *(paragraph 3.2 and 3.6)*

- Developers are encouraged to carry out their own pre-application public consultation. These consultations should be carried out at an early stage in the design process, to enable community views to be incorporated into the submitted proposal. The form of consultation will need to be tailored to suit the particular circumstances of the site, the proposal and location *(paragraph 3.3 and 3.4)*

- The MPA request that applications are accompanied by a consultation statement which should include as a minimum :
    - the houses, businesses and local community groups consulted,
    - the methods and timing of consultation, and
    - feedback and information on how the views were addressed in the development proposal *(paragraph 3.5)*.

3. Pre Application Stakeholder Consultation

INEOS's approach to pre-application stakeholder consultation was underpinned by the general principles set out in the MPA's adopted Statement of Community Involvement and national policy which emphasises the important of early engagement with the MPA.

A summary of INEOS's pre-application discussions with the MPA is set out below. Where possible, INEOS has considered the feedback received and incorporated this into the planning application.

3.1 Pre-application meeting with MPA Officers

INEOS attended a pre-application meeting with Council officers on Monday 8 May 2017 to discuss the application and the assessment work which would accompany it. The meeting was attended by the planning team as well as technical consultees from the highways, landscape and drainage teams.

INEOS outlined the nature of the application proposals, including techniques and mitigation measures designed to remove or reduce the risk of any environmental or amenity concerns arising. INEOS explained the approach that has been taken to assessment work across a range of topic areas, including an open discussion on each topic. INEOS explained the approach adopted in the draft application package and the MPA asked questions and offered advice on the approach they would prefer to see with respect to each topic.

The MPA advised the following on the topic areas discussed:

Category	Summary
Transport	Part of the transport route is within Derbyshire. A meeting should be held to discuss the route with Rotherham and Derbyshire highways officers. The number of vehicle movements is not significant, but the routing is the main issue. Potential impacts on vulnerable road users (walkers, horse riders, cyclists) are an important consideration. Also noted that a number of people use Bondhay Lane to access the golf club. Noted that timings of shift systems need to be considered, to avoid rush hour and school start / finish times. Consider using minibuses to bring in crew. Noted that Loscar Wind Farm used a temporary route across fields to deliver turbine components. INEOS noted ownership issues with adopting a similar approach.
Visual effects	Being able to understand the effects and the timescales involved for each stage of development are the most important points. Area of High Landscape Value designation is being removed through the new Local Plan, but all applications still need to be considered on their merits in the light of what makes the character of that area special. Requested initial Zone of Visual Influence and that initial viewpoints are agreed. Note that if the hedge at the site frontage is currently "gappy", then sections

Category	Summary
	in the visibility splays could be layered rather than trimmed to help rebuild the hedgerow. This would offer betterment.
Drainage	Noted that the embedded mitigation is helpful in mitigating flood risk. Noted a concern that there may be reliance of off-site ecological receptors on waters currently flowing from the site and asked for this to be checked. Noted that this latter point was very unlikely to be an issue, but has occurred in the past on other sites.
Cultural heritage	Noted that a local resident and one of the Councillors has a particular interest in archaeological features on the site and in the general area.
Air quality	Noted that there are few receptors in the vicinity of the site likely to be affected by air quality issues.
Ecology	Contact details provided to allow discussions with the Council's ecologist.
Screening request update	The Council updated on progress with issuing their screening opinion.

4. Public Consultation

The programme of consultation for the Proposed Development incorporated the following events and actions.

4.1 "Town Hall" meetings

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.

These meetings introduced INEOS, described the background to the UK's continuing need for gas for decades to come and the economic and societal benefits of gas produced in the UK over imports.

4.2 Consultation website

In March 2017 INEOS set up a consultation website (http://www.ineos.com/businesses/ineos-shale/our-operations/harthill/).

This webpage introduced the scheme, included a list of frequently asked questions, provided copies of relevant information, and publicised details of the forthcoming public consultation events.

The consultation website was further updated following the last public consultation event to include the exhibition banners.

4.3 Public exhibitions

INEOS held a public exhibition event in advance of submitting the planning application at Harthill Village Hall. INEOS advertised the exhibition in advance via hand delivered letters to 1,083 nearby local residents in Harthill, Thorpe Salvin, Netherthorpe and Kiveton Park surrounding areas (Appendix 1). Adverts were also placed in the Rotherham Advertiser (Appendix 2) and updates were provided on INEOS' consultation website.

The exhibition was held on Thursday 11 May 2017 (between 2pm and 7.30pm). This session gave an opportunity for the local community and stakeholders to drop-in at their convenience (during the advertised times) and speak to the project team and representatives from INEOS regarding the matters of planning, environment, and site design. The exhibition was attended by 114 members of the public and BBC Nottingham also attended.

Attendees were asked to comment on the proposals by completing a questionnaire during the consultation events and posting in the comment box. A copy of the relevant questionnaire is provided at Appendix 3 and copies of the exhibition banners are provided at Appendix 4.

A summary of this feedback is set out in Section 5.

Other public events:

- Harthill and Woodall Parish Council organised a public meeting at Harthill Village Hall on 15 May 2017 to discuss the planning application. This was attended by Tom Pickering, Operations Director (INEOS), Lynn Calder, Commercial Director (INEOS), and Peter Reilly and Gordon Grant (Community Relations – INEOS). Approximately 120 members of the public attended.

- A member of the INEOS Shale Community Relations team attended a meeting of Thorpe Salvin Parish Council on 10 April 2017 to discuss the proposal. Approximately 12 members of the public and Parish Council attended.

- A visit by a member of the Community Relations team to a resident's home was undertaken to discuss the proposal.

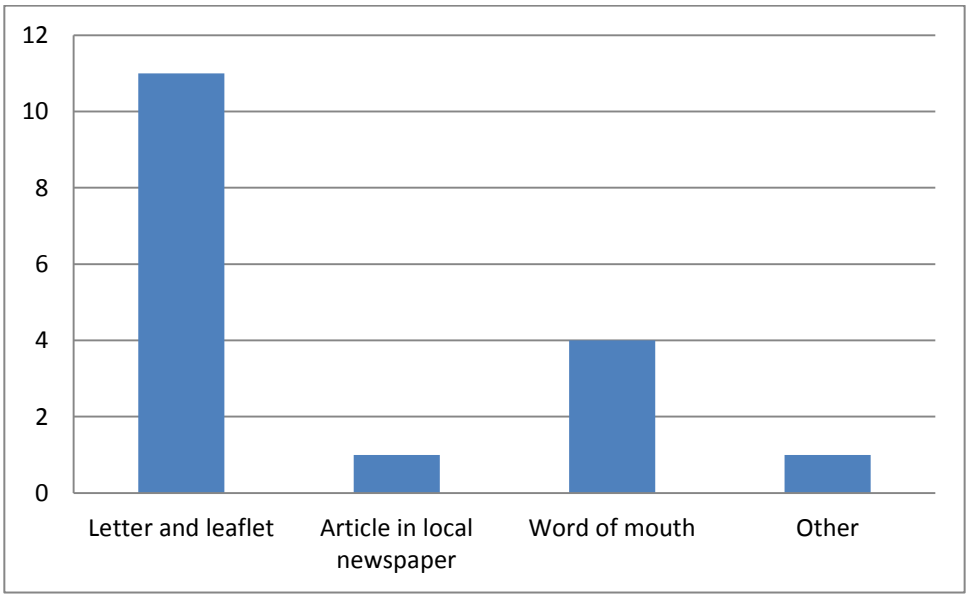
- INEOS distributed approximately 90,000 (8 page) inserts in newspapers including the Sheffield Star and Derbyshire Times. The insert introduced INEOS and described the shale gas exploration and extraction process.

5. Exhibition Feedback

This section provides an overview of the responses received from the comment forms distributed during the public exhibitions. Each question and its corresponding responses are presented in turn below. The feedback forms are provided at **Appendix 3**.

At the public exhibition 114 members of the public attended and provided written feedback via the comment form, as summarised below.

How did you find out about today's public exhibition?



What do you think are the most important issues for INEOS Shale to consider as part of its temporary application? Please rank in order of importance with 1 being the most.

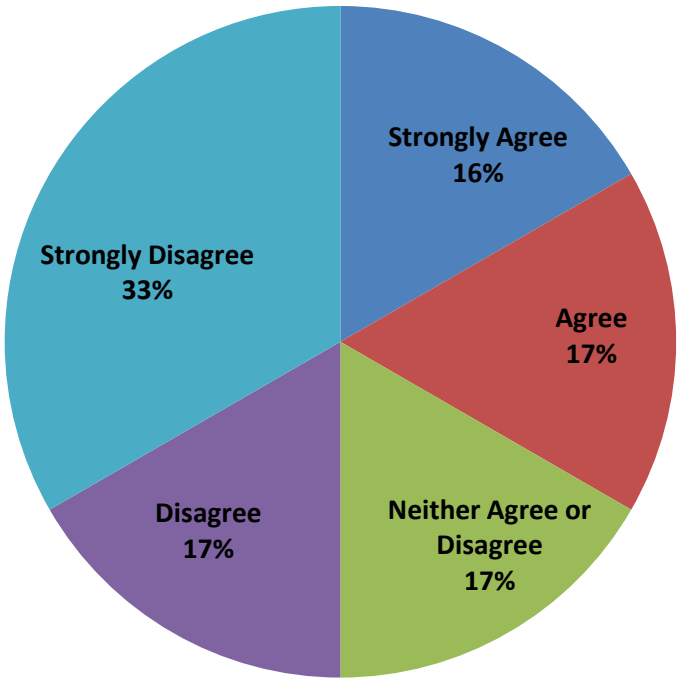
Rank	1	2	3	4	5	6	Other
Vehicle movements to and from the site	1	1	6	1	2	2	
Visual impact of drilling rig	1	1	2	1	4	1	
Operational safety on site		5		2	2	2	
Light pollution			1	1	1	4	
Protection of ground water aquifers	2		1	4			
Noise from operators	2	5	2				
Other							3

The numbers stated in the table above represent the number of respondents who ticked that rank.

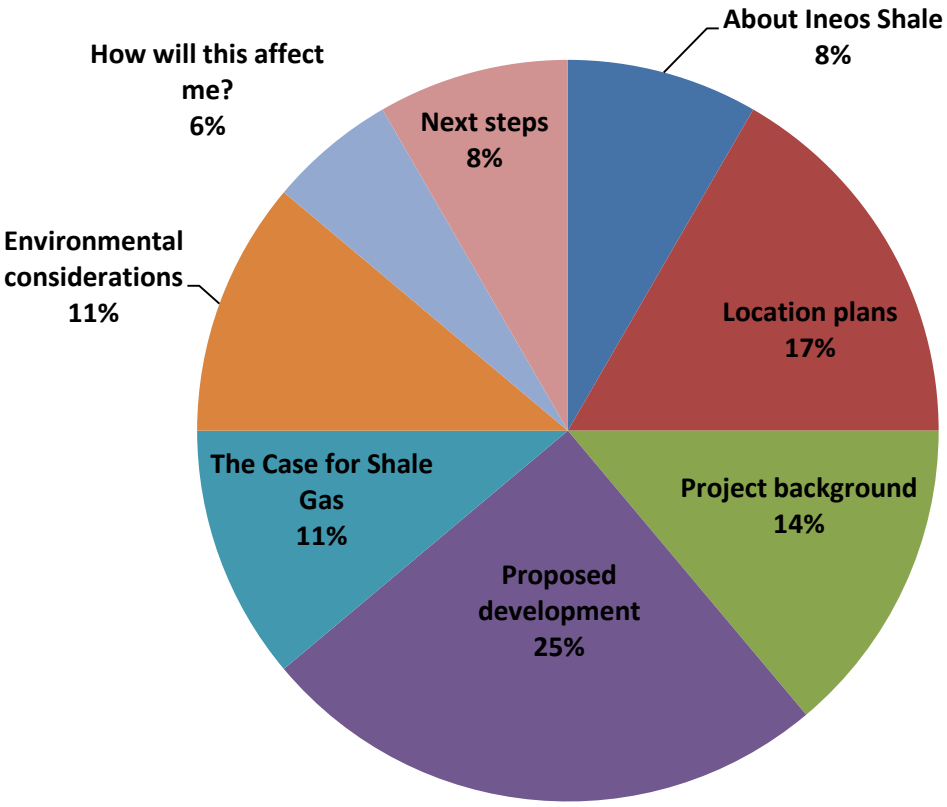
Other:

- Earthquake / subsidence
- Lack of evidence of environmental impact in the UK
- Reduction in property prices

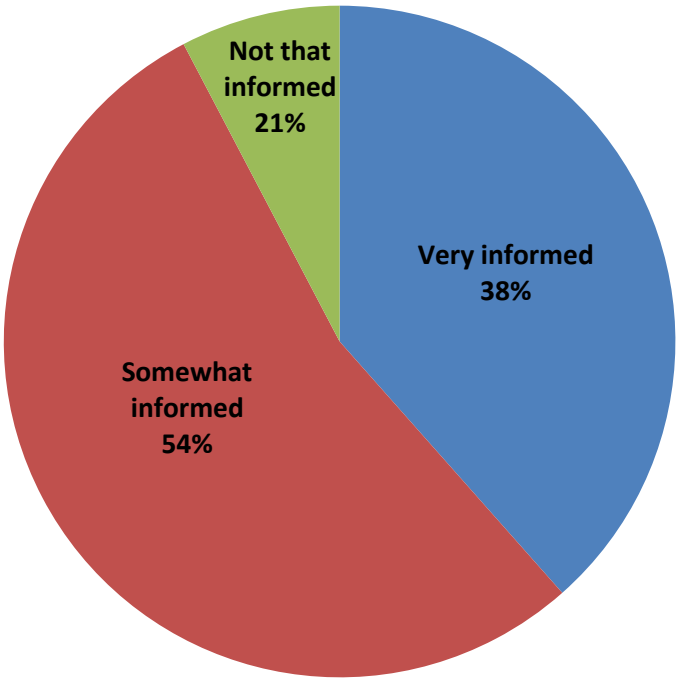
Taking into consideration factors such as the proximity to the highway network, natural screening and distance from nearby residential properties, do you agree that this location at Common Lane, Harthill is acceptable for temporary hydrocarbon operations?



What sections of the public exhibition have you found the most useful today?



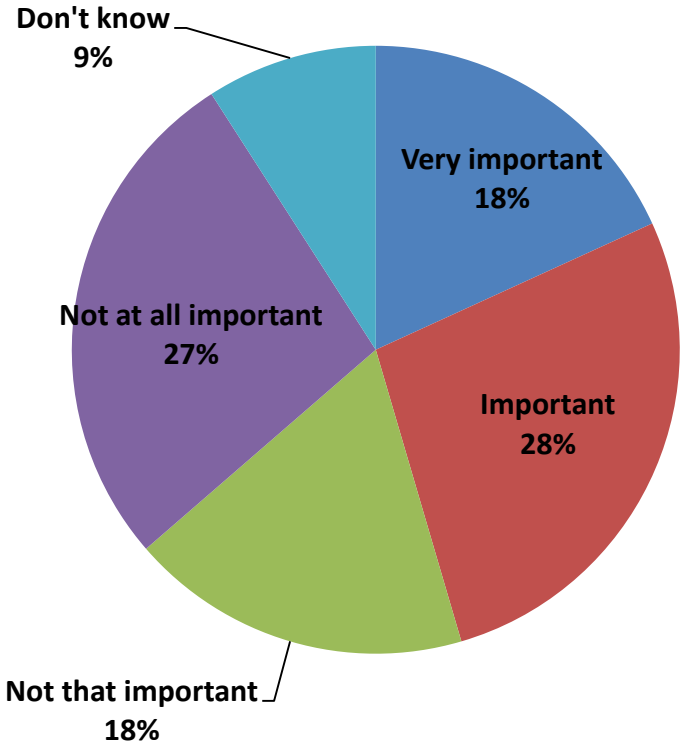
How better informed do you feel about INEOS Shale's proposals after today's exhibition?



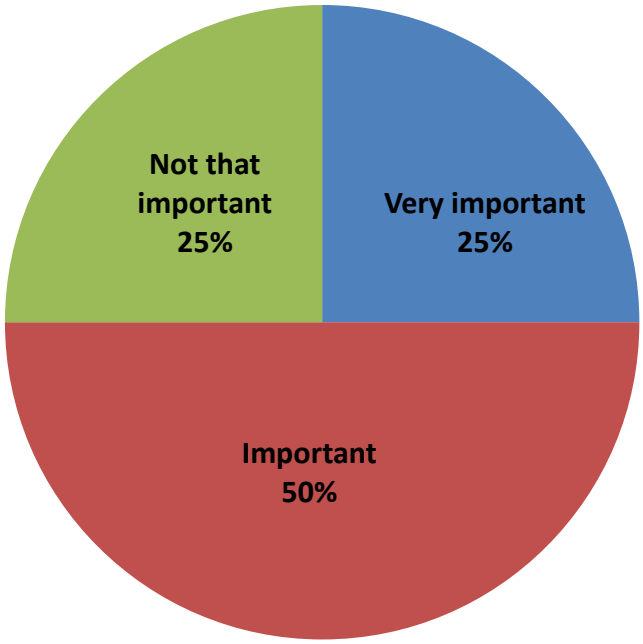
Q6. How important do you rate the following issues?

This question was split into six sub-questions with the questions and responses shown below:

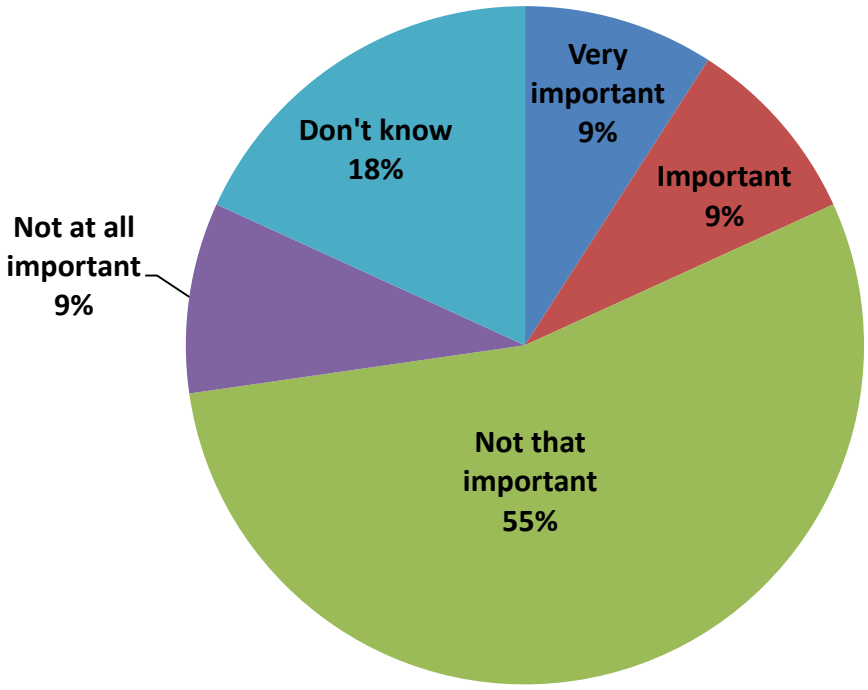
a. Ensuring the UK develops a supply of gas to meet its national needs?



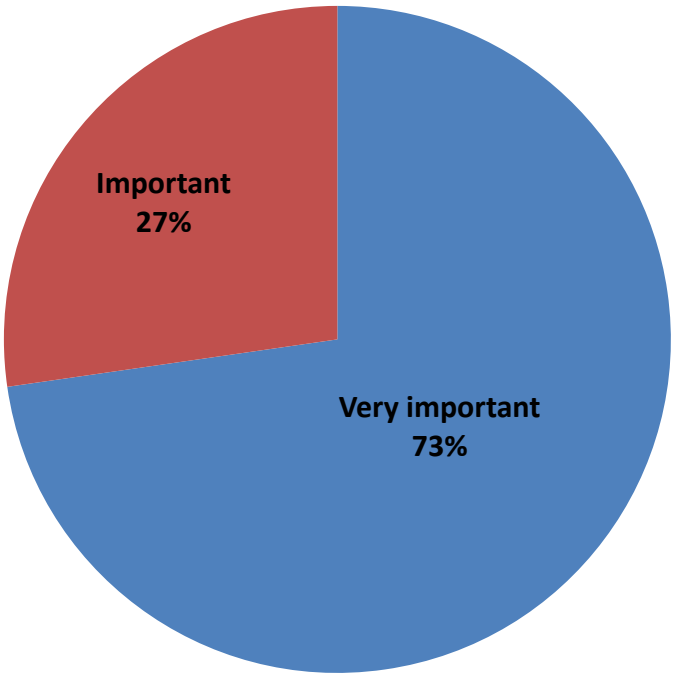
b. Reducing the UK's reliance on oil and gas imports?



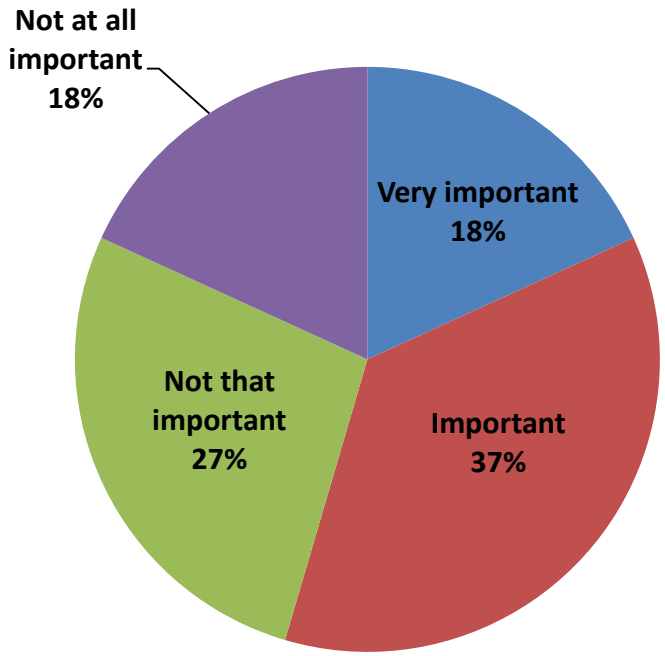
c. Promoting the use of gas to complement renewable energy sources (i.e. solar)



d. Developing more renewable sources to tackle climate change (i.e. wind)



e. Creating employment opportunities and rejuvenating local communities



Do you have any additional comments about the proposals or the exhibition that you would like to share?

- All the information provides details concerning the drilling operation. No information regarding fracking
- I have safety concerns relating to traffic as HGV's go onto A619, the T junction is difficult currently and 60 movements a day will impact
- Do our opinions matter or is this a done deal?
- I am scared for my children
- Not at the moment
- Awaiting outcome from Kirby Moorhouse, North Yorkshire
- There is little case history in the UK for this type of energy extraction (it is not reflective to cite the USA and Canada as they have a massive land mass which is isolated from proximity to housing, homeowners and communities). Fracking is considered undesirable (other than such as farming land owners and drilling companies), as homeowners and the wider public are very concerned that the process could affect the foundations, cause subsidence either during or at some later time in the future and ultimately significantly lower the value of their homes. Additionally, the undesirable impact of visual, noise, lighting, excessive transport and other environmental problems.

6. Responding to the Feedback

This section of the report sets out a summary of the feedback received during the pre-application consultation period. All feedback has been recorded and analysed to enable the project team to understand and respond to issues raised.

The following section explores this feedback in more detail:

Category	Comment / Question	Response
Traffic/suitability of site access	Safety concerns relating to traffic as HGV's go onto A619. The T junction is difficult currently and 60 movements a day will impact.	The Environmental Report (Chapter 3) includes a draft Traffic Management Plan ('TMP'). It includes a range of traffic management measures, including signage proposals and the provision of temporary passing places within the highway. The approved TMP will set out the framework for managing site traffic, and in particular Heavy Goods Vehicles (HGVs), to minimise impacts on local communities. The Environmental Report includes a traffic and transport appraisal to assess the impact of the proposal on traffic flows and highway safety. This assessment concludes that due to the relatively low volumes of traffic, the proposal will not have a material impact on the highway network and will not cause impacts on pedestrian or highway safety, provided that the contents of the TMP are agreed and implemented.
Other	No information regarding fracking.	The current proposals are for the exploratory phase only, with the sole purpose of evaluating the geology of this area and its suitability for gas production. The proposals do not include undertaking either flow testing or production and therefore this information was not included in the exhibition. However, the team in attendance at the exhibition were available to discuss possible future operations at the site.
	Do our opinions matter?	INEOS have undertaken various forms of public consultation in advance of making a planning application. This consultation was undertaken to ensure that INEOS understands the views of the public and has informed the preparation of the planning application. Following the submission of the planning application, the Council will also undertake a period of statutory public consultation. This will provide another opportunity for members

		of the public to comment on the proposals.
	I am scared for my children.	INEOS understand that some people have concerns about safety aspects of the shale gas industry. The potential public health impacts from the proposals are considered at Section 8.2 of the Planning Statement. This concludes that the proposals will have a negligible impact on human health due to the embedded mitigation measures and the multiple layers of regulation that governs the industry.
	Awaiting the outcome from Kirby Moorhouse, North Yorkshire.	The planning permission at Kirby Misperton in North Yorkshire has been secured by Third Energy and is in a different Mineral Planning Authority area to INEOS' proposals. INEOS have no further comments to make on this approved scheme.
	There is little case history in the UK for this type of energy extraction. Fracking is considered undesirable (other than such as farming land owners and drilling companies), as homeowners and the wider public are very concerned that the process could affect the foundations, cause subsidence either during or at some later time in the future and ultimately significantly lower the value of their homes.	The Proposed Development relates to the exploration stage and proposes an exploratory core well only. As a result, there will be no hydraulic fracturing taking place at this stage. The application seeks permission for a vertical well. Existing collapsed mine workings will be drilled through and the bore hole cased with steel and cemented in place.This will shore up the bore hole in the vicinity of the mineworkings so there is not likely to be any effect of the drilling operations on historic subsidence as a result of passing through the mine workings. The bore hole and core removed from the bore hole will be approximately 6 inches wide and taken at depth. This is not likely to cause any effect in terms of wider subsidence issues. The operation is very different in scale, depth and nature from the mining activities that have caused subsidence historically in this area.
	The undesirable impact of visual, noise, lighting, excessive transport and other environmental problems.	The Environmental Report has assessed all environmental considerations, including landscape and visual impact (Chapter 5), noise (Chapter 2), lighting (Chapter 5) and transport (Chapter 3). The assessments conclude that, provided mitigatin recommendations are followed, the proposals will not cause any adverse impacts in respect of these topics..

7. Conclusions

This SCI summarises the consultation undertaken by INEOS Shale prior to submission of the planning application for the construction of a wellsite and the drilling of a vertical core well at land adjacent to Common Road, near Harthill.

As reported in this SCI, INEOS has delivered a number of consultation activities to raise awareness of the development proposals and to enable feedback prior to the submission of a planning application. This included pre-application meetings and a public exhibition in May 2017.

All relevant matters raised during pre-application consultation, stakeholder and public consultation have been addressed through the planning application and its supporting documents.

During the planning application process, INEOS will continue to provide updates via its consultation website and respond to any questions made via the contact details provided.

APPENDIX 1
Exhibition Invites

INEOS Shale

MAY 2017

Dear resident,

INEOS Shale is the division within INEOS Upstream Limited dedicated to exploring for gas within the shale layer of rock some 2,000 to 5,000 metres deep underground. With extensive licence interests across North and South Yorkshire, the East Midlands and Cheshire we are now ready to move into an operational exploration drilling phase.

INEOS is a global manufacturer of petrochemicals, speciality chemicals and oil products. Headquartered in the UK, we are one of the UK's largest manufacturing businesses, employing 4,000 people across seven sites including large sites at Grangemouth, Runcorn and Teesside. Our businesses produce the raw materials that are essential in the manufacture of a wide variety of goods: from paints to plastics, textiles to technology, and medicines to mobile phones – chemicals manufactured by INEOS enhance almost every aspect of modern life. We already supply UK homes and businesses with gas from our North Sea production assets.

We have identified a potential drilling site on land adjacent to Common Road, located approximately 0.7 km to the east of Harthill, Rotherham. We would like to evaluate the underground geology by drilling a vertical well and taking samples of the rocks for laboratory analysis. We are not planning to hydraulically fracture this well. A full planning application will follow in due course. Further information is outlined overleaf.

We have submitted an Environmental Screening Report on the proposed development to Rotherham Metropolitan Borough Council and we anticipate submitting a formal Planning Application in the near future.

Before we submit the Planning Application we wish to hear your views and answer any questions you may have. Accordingly we invite members of your household to a public drop-in exhibition.

Members of our team will be available throughout the event.

Venue: **Harthill Village Hall**
Date: **11 May 2017**
Address: **Village Hall, Winney Hill, Harthill, S26 7YL**
Time: **Between 14:00 and 19:30**

In the meantime please see our website **www.ineosshale.com** for information about us and shale gas extraction.

To contact INEOS Shale:

twitter: @INEOS_shale
tel: +44 (0)203 793 8066
email: shale.information@ineos.com

Purpose of well:

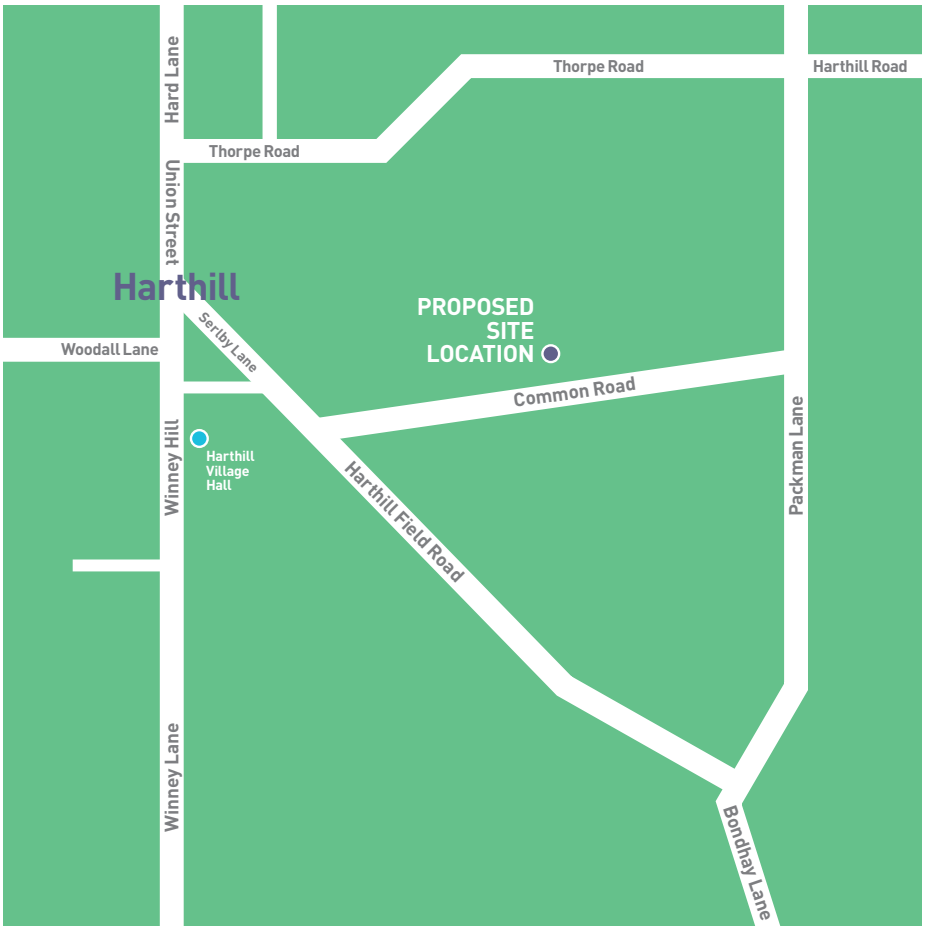
This vertical well will be drilled to a depth of c.2,800 metres and has been designed to extract "core" samples of the rocks for laboratory analysis to identify their geological characteristics and gas-producing properties. A pressure transient test (PTT) will be undertaken following drilling to establish whether the target zone is over pressured (encouraging for shale gas extraction) or under pressured (less encouraging for shale gas extraction). No flow testing of the well would be undertaken. The well will be retained for technical and safety reasons as a "listening well" if a well elsewhere is hydraulically fractured.

Transport route:

The proposed traffic route from the M1 (J30) will be A616, A619, Bondhay Lane, Packman Lane and Common Road.

Expected duration:

Site construction and rig assembly will take up to three months. Drilling, coring and the PTT will take up to five months with the drilling and coring being a three month 24-hours-a-day operation. Well suspension and rig removal will take up to one month.



Core sample

To contact INEOS Shale:

twitter: @INEOS_shale
tel: +44 (0)203 793 8066
email: shale.information@ineos.com

APPENDIX 2
Newspaper Advert

INEOS Shale

Public exhibition

INEOS Shale is preparing to make a planning application to temporarily use land off Common Road, near Harthill, to drill a vertical exploratory core well.

The purpose of the well is to extract core samples of rock for laboratory analysis. This will help us to identify the characteristics of the local geology and its potential ability to produce gas. The well will be drilled to a depth of around 2.8km from the surface.

We have submitted an Environmental Screening Report on the proposed development to Rotherham Metropolitan Borough Council and we anticipate submitting a formal Planning Application in the near future.

To allow us to gather as much feedback on our proposals as possible, we are holding a public exhibition which will give the local community a chance to ask members of our team questions and to make their views known.

Date: **11 May 2017**
Time: **Between 14:00 and 19:30**
Venue: **Village Hall, Winney Hill, Harthill, S26 7YL**

www.ineosshale.com

shale.information@ineos.com

APPENDIX 3
Feedback Forms

Comment Form

PEDL 304 Exploratory Wellsite off Common Road, Harthill
Public Consultation
2.00pm – 7.30pm 11 May 2017

Thank you for visiting our public consultation event.
We would appreciate if you could share your feedback on what you have seen today.

1. HOW DID YOU FIND OUT ABOUT TODAY'S PUBLIC EXHIBITION?

Letter	☐	Other (please state)	☐
Article in local newspaper	☐		
Word of mouth	☐		

2. WHAT DO YOU THINK ARE THE MOST IMPORTANT ISSUES FOR INEOS TO CONSIDER AS PART OF ITS TEMPORARY EXPLORATORY APPLICATION? PLEASE RANK IN ORDER OF IMPORTANCE WITH 1 BEING THE MOST IMPORTANT.

Vehicle movements to and from the site	☐	Protection of groundwater aquifers	☐
Visual impact of drilling rig	☐	Noise from operations	☐
Operational safety on site	☐	Other (please state)	☐
Light pollution	☐		

3. TAKING INTO CONSIDERATION FACTORS SUCH AS PROXIMITY TO THE HIGHWAY NETWORK, NATURAL SCREENING AND SEPARATING DISTANCE FROM NEARBY PROPERTIES, DO YOU AGREE THAT THIS LOCATION IS ACCEPTABLE FOR TEMPORARY EXPLORATION OF HYDROCARBONS? (please circle)

Strongly agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

4. WHAT SECTIONS OF THE PUBLIC EXHIBITION HAVE YOU FOUND THE MOST USEFUL TODAY?

About INEOS Shale	☐	The Case for Shale Gas	☐
Location plans	☐	Environmental considerations	☐
Project background	☐	How will this affect me?	☐
Proposed development	☐	Next steps	☐

5. HOW BETTER INFORMED DO YOU FEEL ABOUT INEOS'S PROPOSALS AFTER TODAY'S EXHIBITION?

Very informed	Somewhat informed	Not that informed	Not at all informed

Comment Form

6. HOW IMPORTANT DO YOU RATE THE FOLLOWING ISSUES? (circle as appropriate)

- Ensuring the UK develops a domestic supply of shale gas to meet national needs

Very important Important Not that important Not at all important Don't know

- Reducing the UK's reliance on gas imports

Very important Important Not that important Not at all important Don't know

- Promoting the use of shale gas to complement renewable energy sources (i.e. solar)

Very important Important Not that important Not at all important Don't know

- Developing more renewable energy sources to tackle climate change (i.e. wind)

Very important Important Not that important Not at all important Don't know

- Creating employment opportunities and rejuvenating local communities

Very important Important Not that important Not at all important Don't know

7. DO YOU HAVE ANY ADDITIONAL COMMENTS ABOUT THE PROPOSALS OR THE EXHIBITION THAT YOU WOULD LIKE TO SHARE?

8. TO HELP US ANALYSE THE FEEDBACK RECEIVED, PLEASE COULD YOU CONFIRM THE FOLLOWING ABOUT YOURSELF (circle as appropriate)

Gender: M/F

Age: U18 18-25 26-34 35-44 45-54 55-64 65+

Postcode:

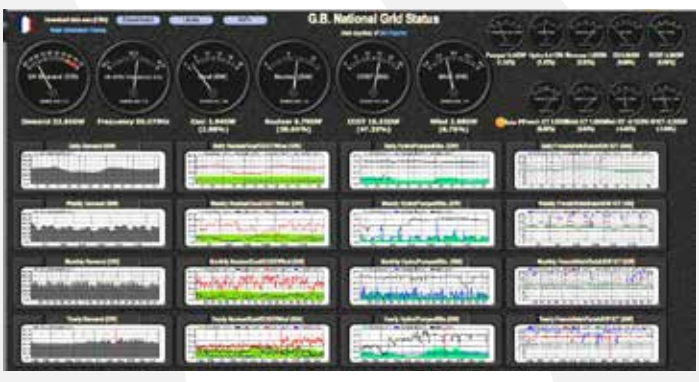
APPENDIX 4
Exhibition Materials

WHY DO WE NEED GAS?

For Heating (80% of homes use gas central heating)

For Cooking (30% of homes cook on gas)

For a stable electricity supply - gas provides flexibility to balance intermittency from renewables



For Industry

- as an energy source
- as a raw material to make chemicals and plastics

For the Renewable Energy Industry

- Wind, solar and tidal all rely on specialist chemicals produced from gas
- Without gas there wouldn't be a Renewable Energy industry

INEOS Shale

TRAFFIC MOVEMENTS

- <7.5 Tonnes (light vehicles and crew buses) c.28%

- >7.5 Tonnes (HGV's) c.71%

- Abnormal loads c.1%

- Maximum daily HGV movements 60 (30 vehicles).

Stage	Movements*	Average Daily	Peak Daily	Total days
Construction	2,300	28	70	84
Drilling, Coring & Suspension	3,500	25	70	140
Restoration	1,650	39	60	42
Intervention**	400	25	55	16
Listening operation**	900	25	50	35

* A movement is considered as being either an inbound or outbound trip; i.e. one HGV arriving then departing the site would equal two movements.
**Intervention and Listening Operations only if required.

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WELL DECOMMISSIONING AND SITE RESTORATION

Stage 5: Well decommissioning and site restoration

Well decommissioning

- Mobilisation of workover rig (up to 32m) with lighting, generators and low-level kit
- Cutting the casing 2m below ground level and plugging the well using cement in accordance with the Borehole Regulations.

Site restoration

- Removal of site hardstanding, concrete pad and cellar
- Removal of drainage perimeter pipe and site membrane
- Replacement of soils onto site in appropriate weather conditions
- Restoration of site to previous use (agriculture) including reinstatement of field drains
- Restoration of road modifications as agreed with landowner and Highways Authority.

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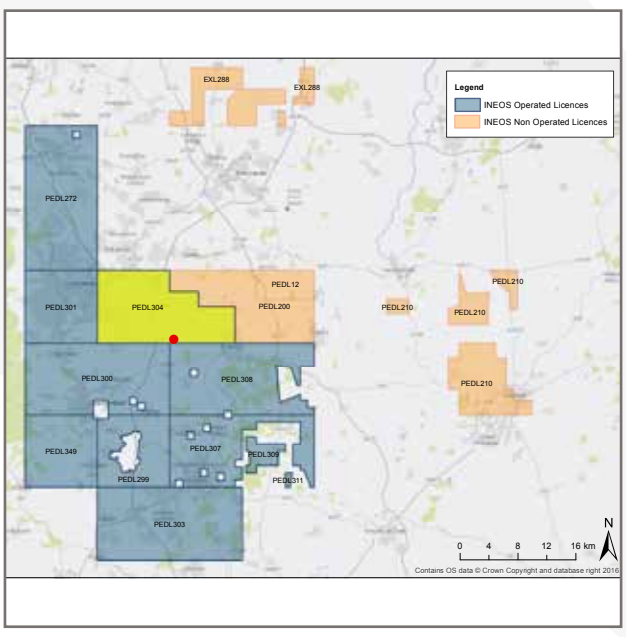
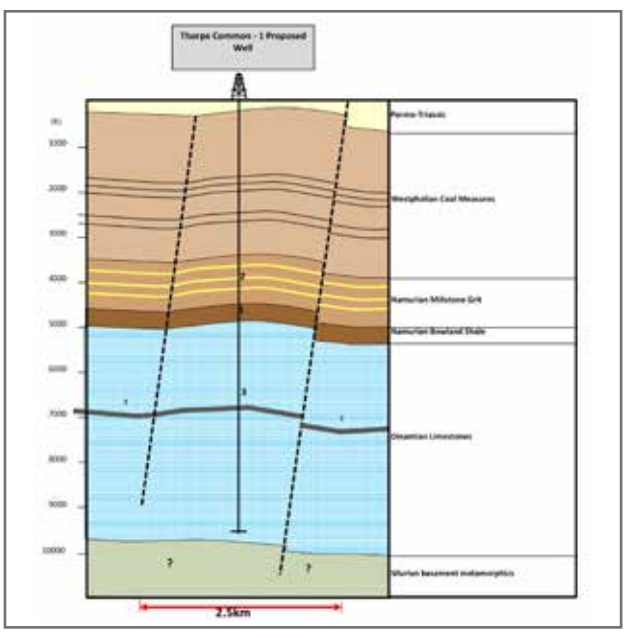
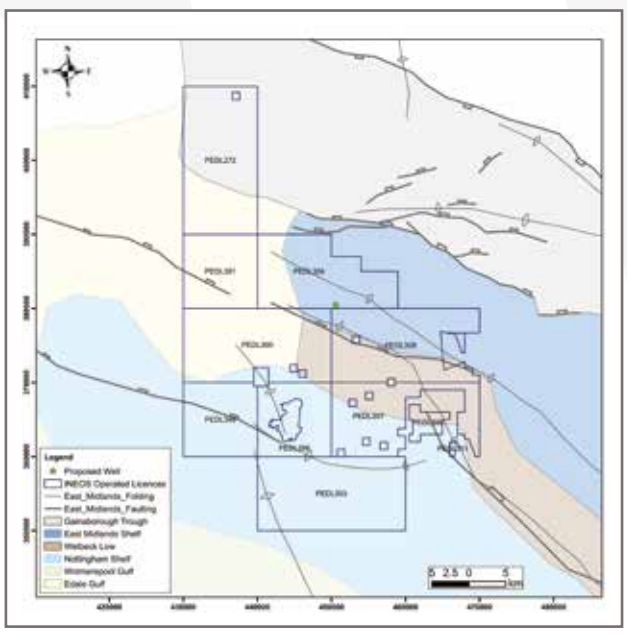
SITE LOCATION

The site off Common Road, Harthill was chosen following analysis of existing geophysical data.







We also took into account the following surface considerations:

- Environmental designations and scheduling
- Agricultural land
- Restrictions in Local Plans
- Groundwater protection zones
- Flood risk areas
- Possible presence of protected species
- Local residences and buildings such as schools and hospitals.

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SEISMIC SURVEY – HOW IT WORKS

A controlled seismic source, positioned on or near the surface, is used to generate a seismic signal which passes through the various layers of rock. At changes in rock type and density, the signal is reflected back to surface where a series of microphones (geophones) record its return. A three dimensional image can then be processed.

Stage 1: Pegging out
Ahead of the operational phase, teams of surveyors and ecologists finalise the survey design by marking the final positions of the receiver and source points with small flags.


Pegging out

Stage 2: Deploying the geophones (receivers)
These listening devices are placed in fields and road verges and occasionally in gardens. Between placement and recovery of the receiver, the only likely activity will be a technician changing the battery.


Receivers in position

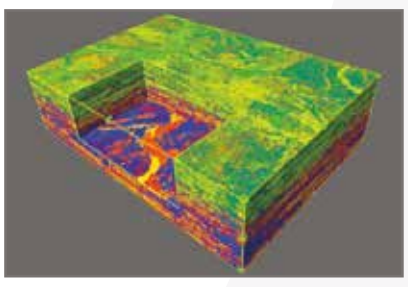
Stage 3: Seismic source generation
To generate the seismic sound signal, either vibroseis trucks or small seismic charges are used.


Vibroseis trucks

Vibroseis trucks – These vehicles will usually operate in groups of three and will be the most obvious sign of a survey taking place as some surveying is done on roads. All three units lower their plates and vibrate the ground in unison to create the sound wave.


Shot hole drilling

Shot hole drilling – A tractor mounted drill is used to drill a narrow hole up to ten metres in depth. The explosive charge (source) is placed at the bottom of the hole and the hole is back filled with earth. When the charge is detonated, a dull thud can sometimes be heard.


Final 3D image

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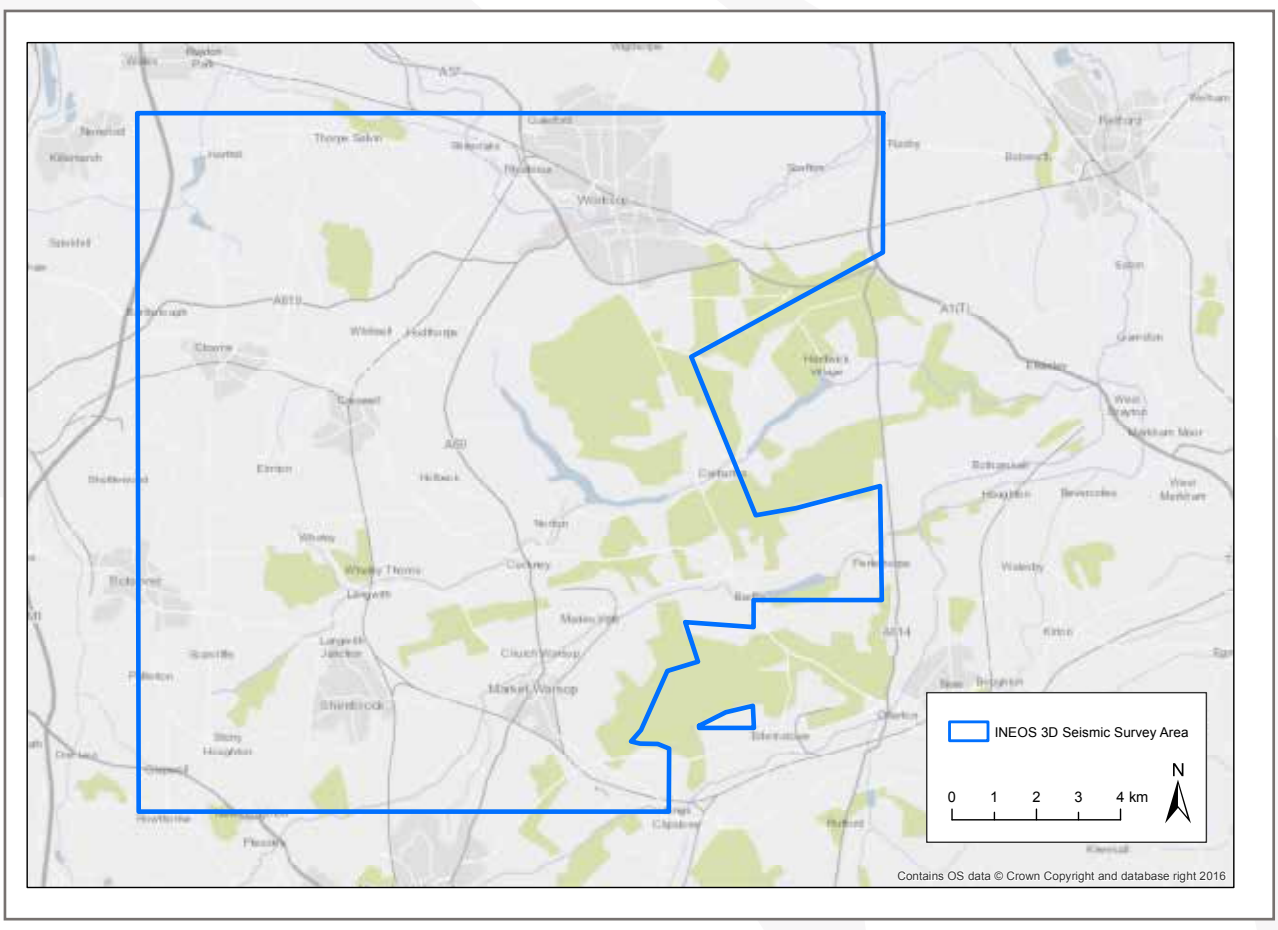
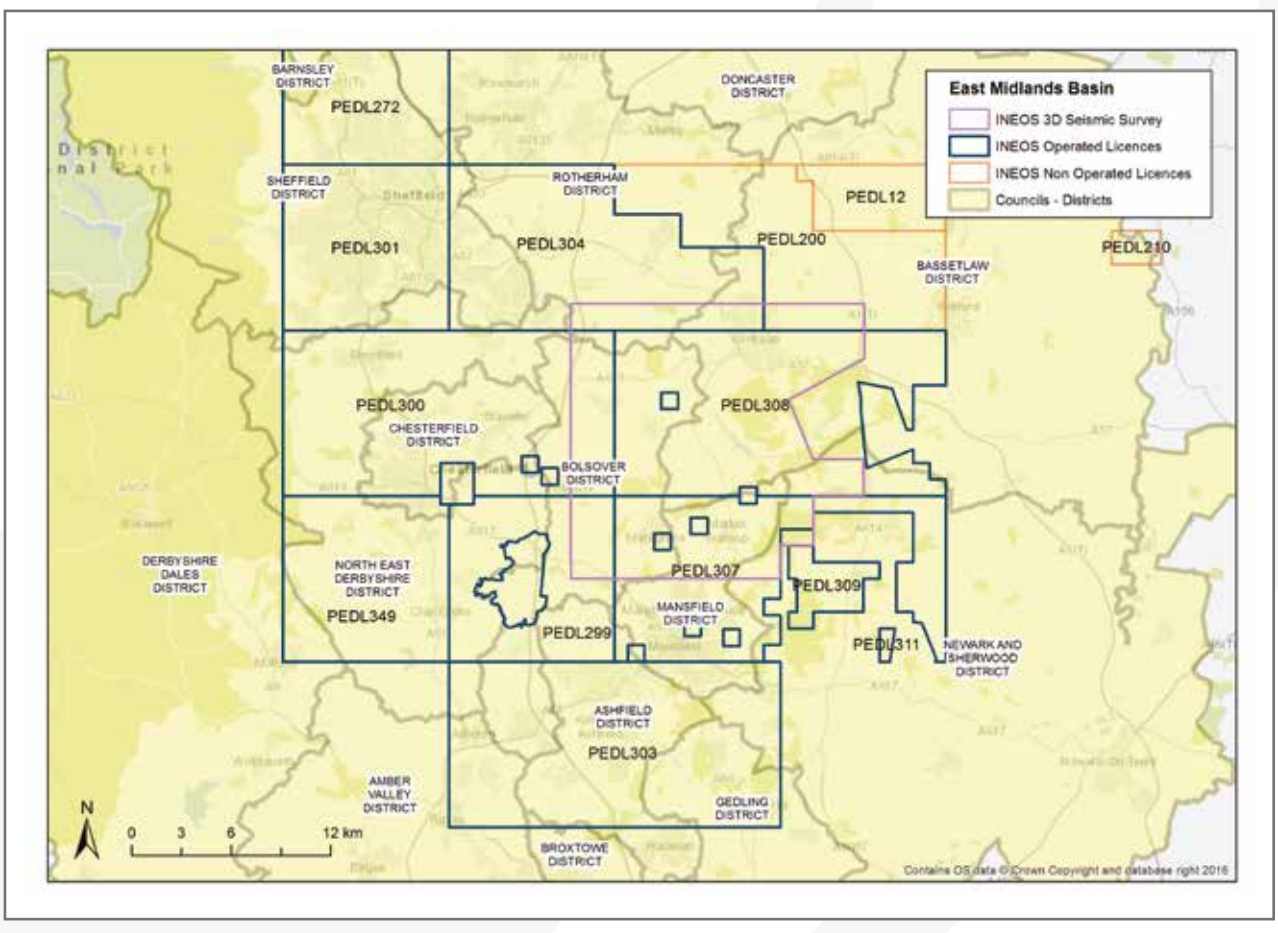
SEISMIC SURVEY –
EAST MIDLANDS



- This seismic survey is part of our scientific data gathering programme
- Survey area approximately 250 km^2 in the counties of Nottinghamshire, Derbyshire and South Yorkshire
- Taking place between June and November
- The survey will create a 3D picture of the deep underground geology and help inform our future activities
- Seismic surveys have been commonplace across the UK for more than 40 years.



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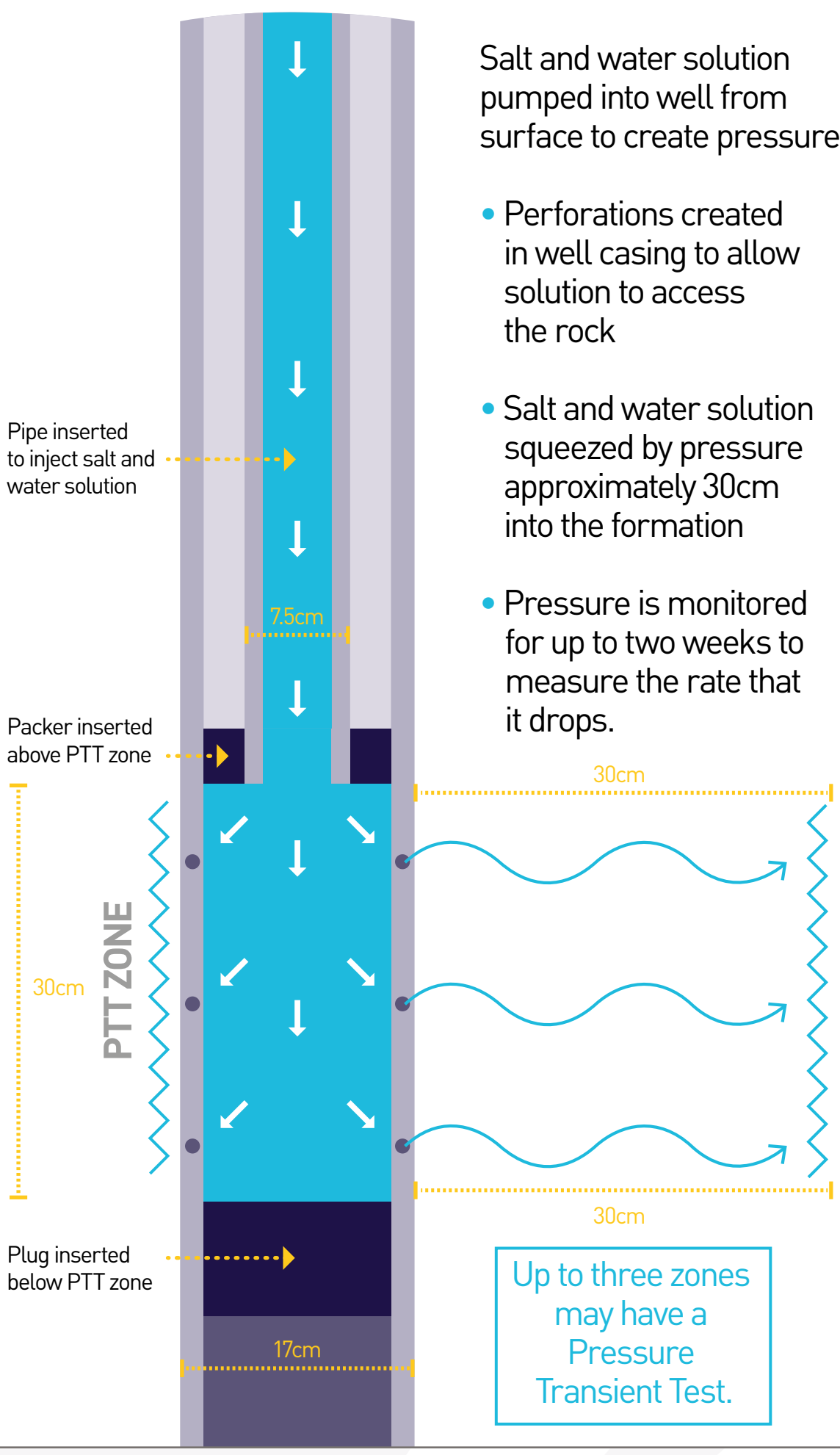
PRESSURE TRANSIENT TEST (PTT)

A PTT is a short duration operation where a small amount (up to 10m^3) of a salt and water solution is pumped into a zone within the wellbore and squeezed approximately 30cm into the formation.

The rate of pressure drop in the well will be monitored for two weeks.

This data will indicate if the reservoir is over pressured (encouraging for gas production) or under pressured (less encouraging for gas production).



Salt and water solution pumped into well from surface to create pressure

- Perforations created in well casing to allow solution to access the rock
- Salt and water solution squeezed by pressure approximately 30cm into the formation
- Pressure is monitored for up to two weeks to measure the rate that it drops.

Up to three zones may have a Pressure Transient Test.

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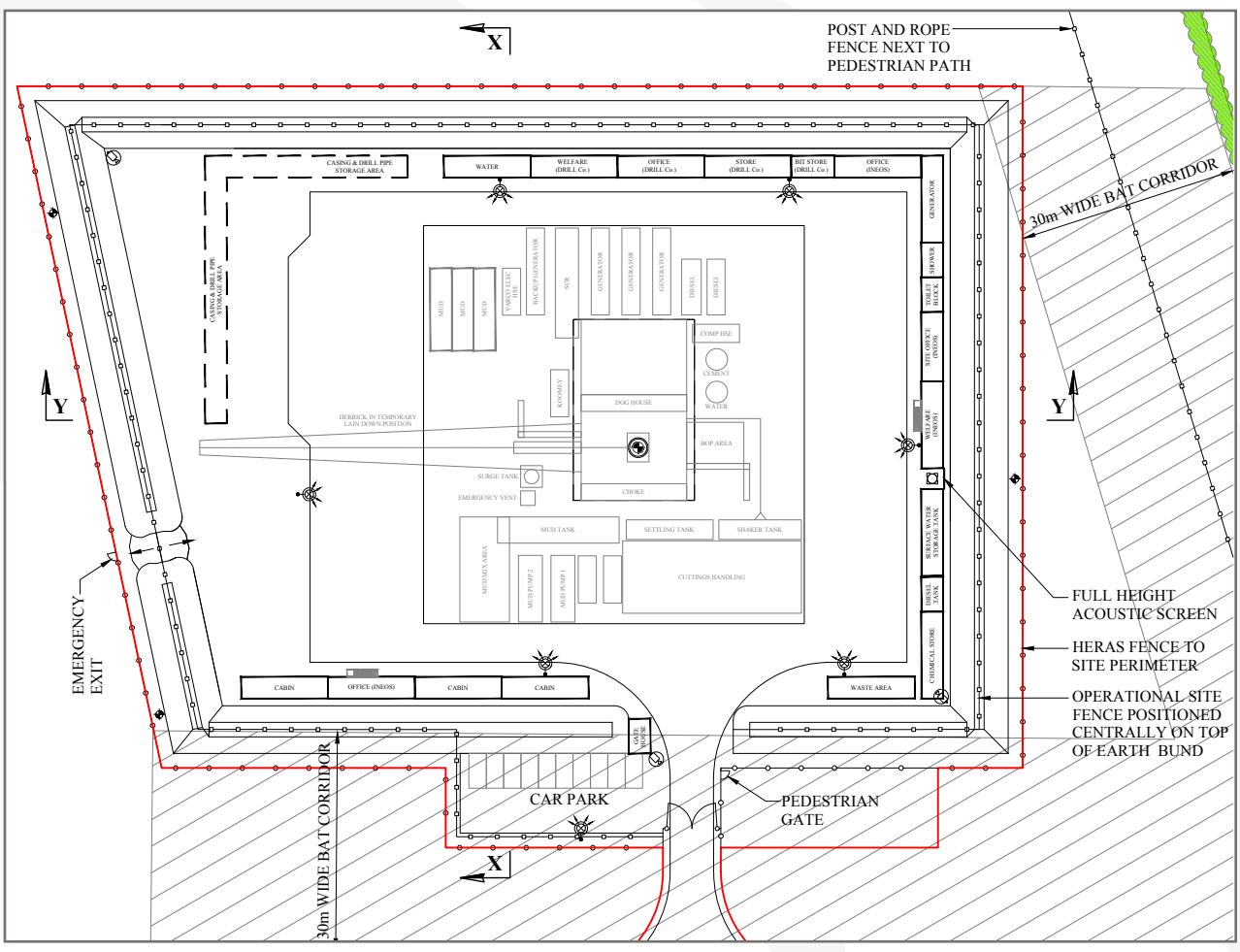
PROPOSED DEVELOPMENT



Stages over the proposed five-year life of the site.

The plan shows the site at **Stage 2**.

Stage 1: Site Development and Establishment – approx. three months

Stage 2: Drilling, Coring and PTT – approx. five months

Stage 3: Maintenance of the Suspended Well Site – retained until restoration

Stage 3a: Possible workover of the Suspended Well – up to three weeks

Stage 4: Possible Listening Well operations – up to three weeks

Only if required

Stage 5: Well decommissioning and site restoration – approx. six weeks.

Safety

- Well safety equipment will include a blow-out preventer, vent for emergency venting of gas and methane and radon monitoring
- Emergency response plan would be in place
- Pollution prevention measures including bunding, spill kits and training of staff.

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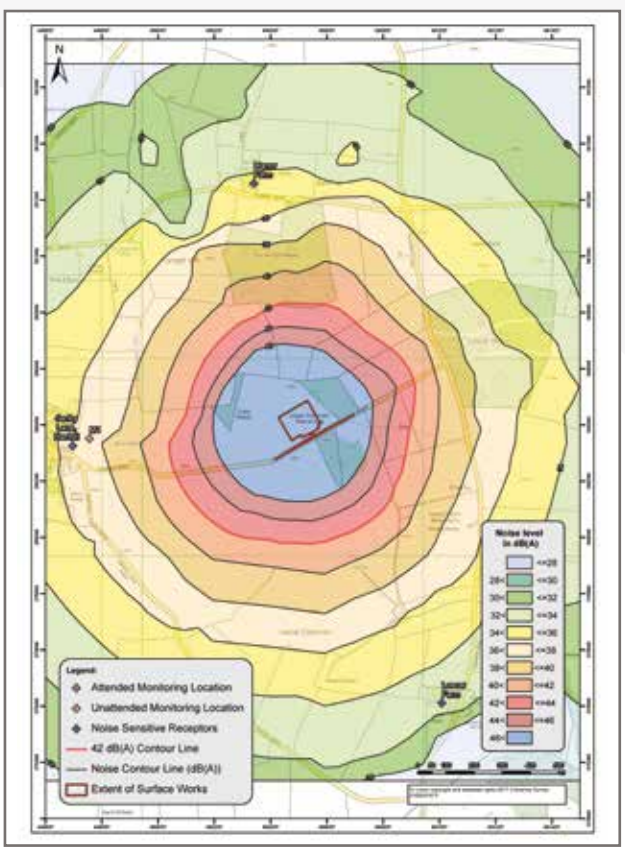
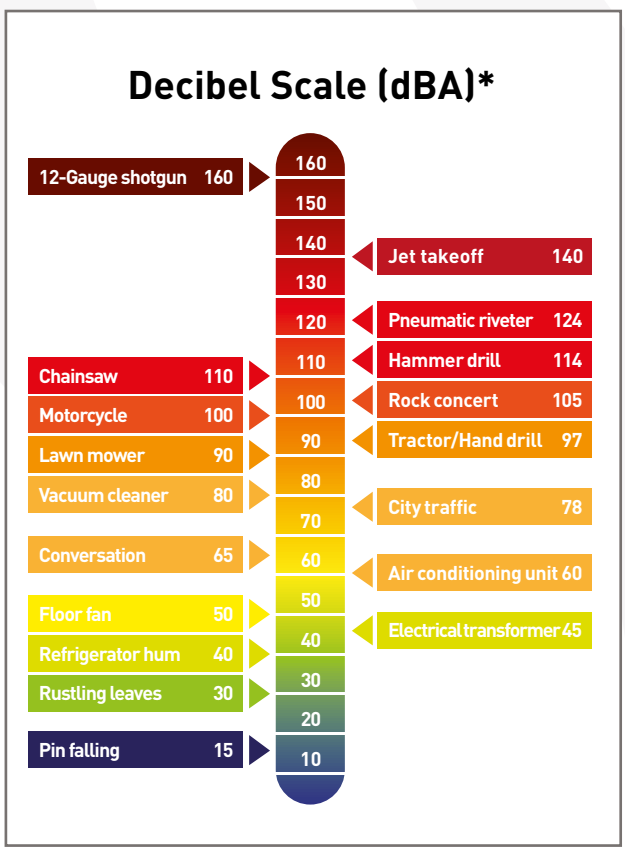
NOISE IMPACTS

A noise assessment was undertaken covering construction, drilling and coring activities.

Construction noise may be audible at times but will not exceed regulatory criteria.

The proposal has no significant adverse impacts on amenity.





The project has been designed to have noise levels within the night time noise criteria of 42dB. This is also well within the evening and daytime noise criteria at the nearest house.

Mitigation measures:

- Use of bunds, screens and double stacked cabins
- Positioning and rotating equipment
- Use of silencers, low noise equipment or enclosures
- Management of vehicle movements and audible vehicle reversing alarms
- Regular maintenance to minimise noise generation.

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NEXT STEPS

- Consider feedback from exhibition
- Pre-application discussions with Mineral Planning Authority
- Finalise application documents
- Submit planning application
- Mineral Planning Authority public and regulator consultation
- Officer report on application
- Presentations to Planning Committee by company and supporters/ objectors
- Decision made on application.

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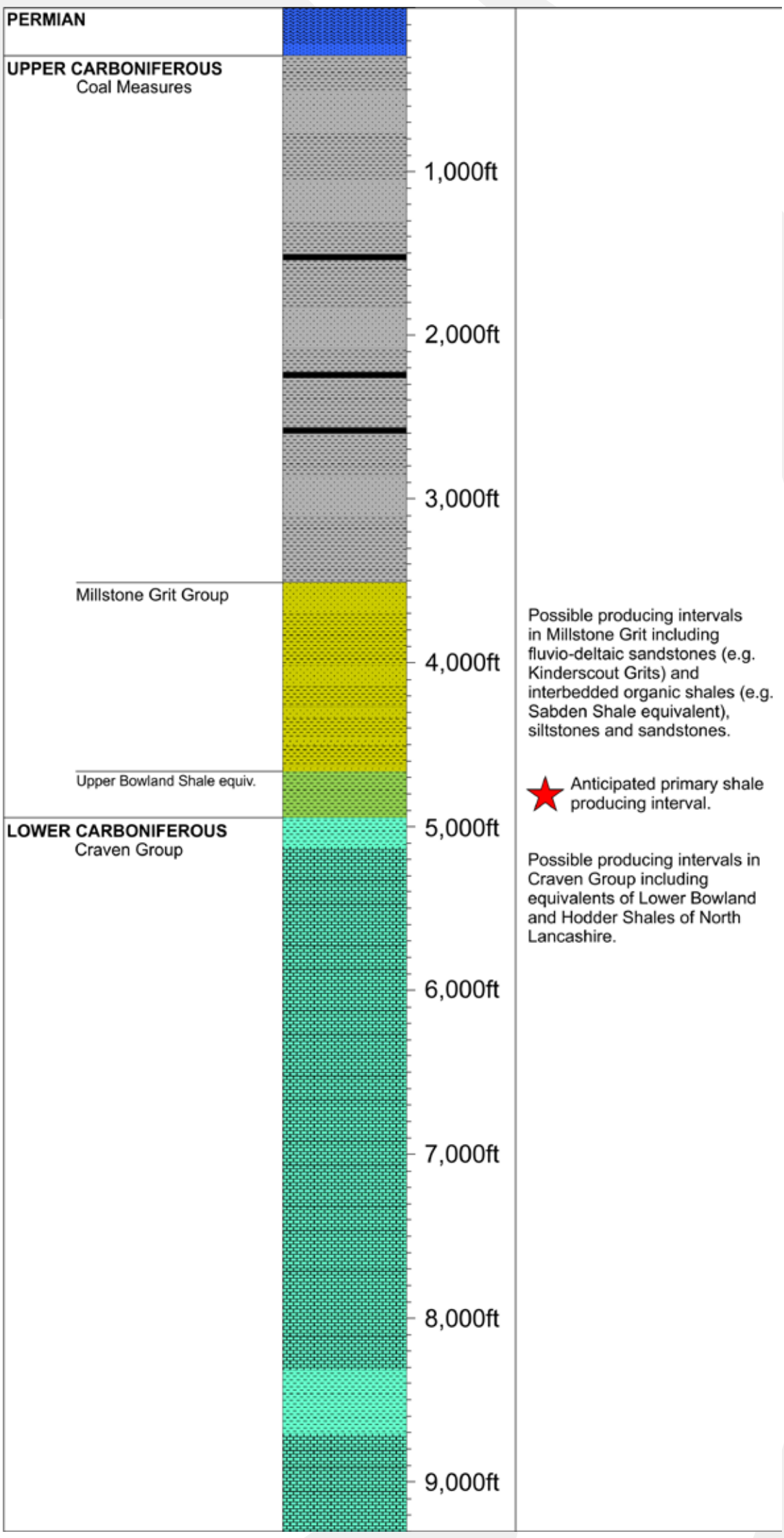
GEOLOGY

EAST MIDLANDS



Stratigraphic column

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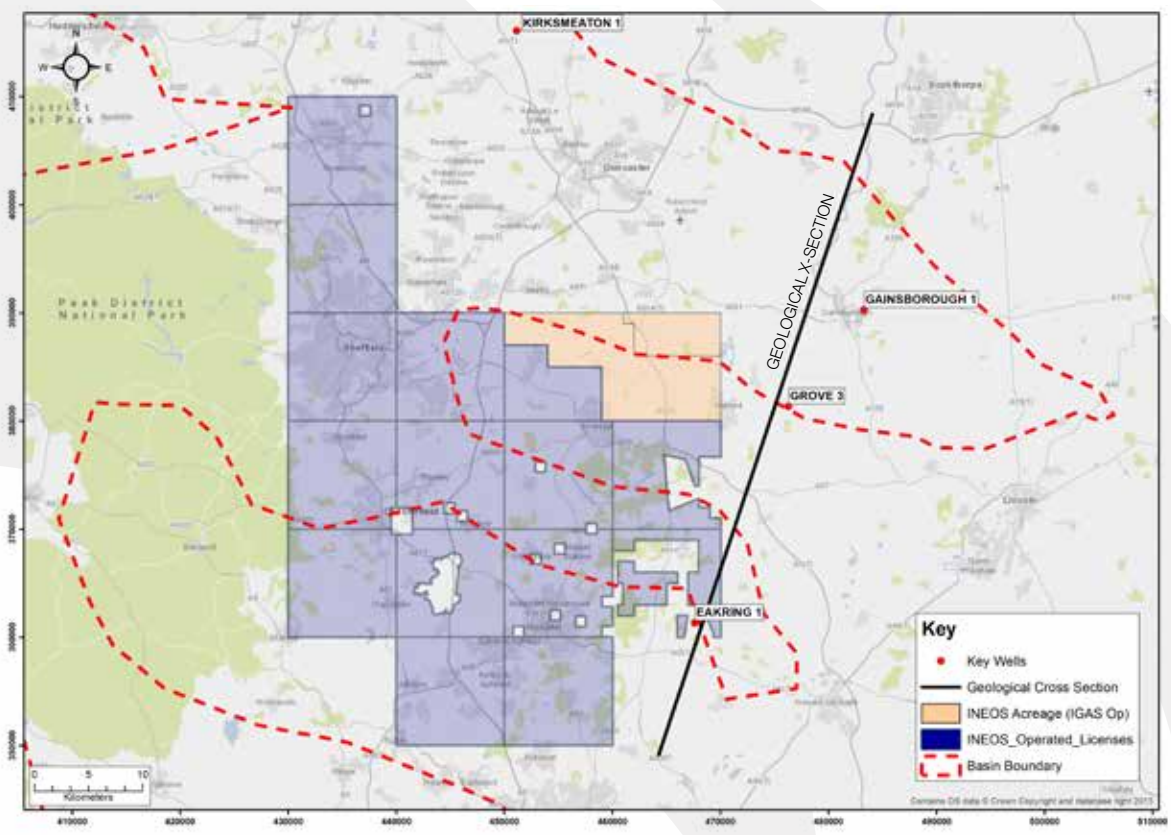
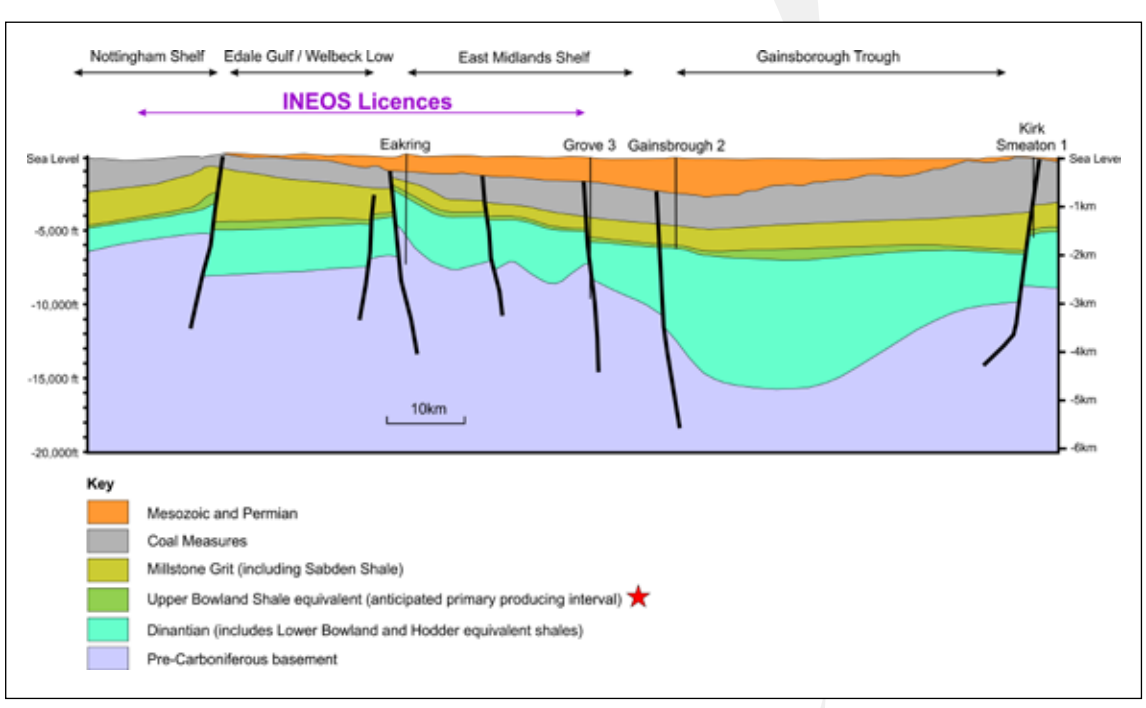
GEOLOGY

EAST MIDLANDS



Location map



Geological X-sections

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INEOS

- Is a global manufacturer of petrochemicals, speciality chemicals and oil products
- Comprises 18 businesses each with a major chemical company heritage
- 65 sites in 16 countries throughout the world
- Employs 17,000 people world wide
- 7 sites in the UK employing 4,000 people
- Produces raw materials for manufacturing businesses used in medicines, clothes, construction, cars computers and green technologies.

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Measures to protect the environment

Easements for utilities

A 3m standoff from pipelines. Underground cabling will be fenced off. Easements of 3m for overhead powerlines and 1m from roads will also be maintained for all works. A full utility search will be carried out at the site.

Surfacing and lining of site

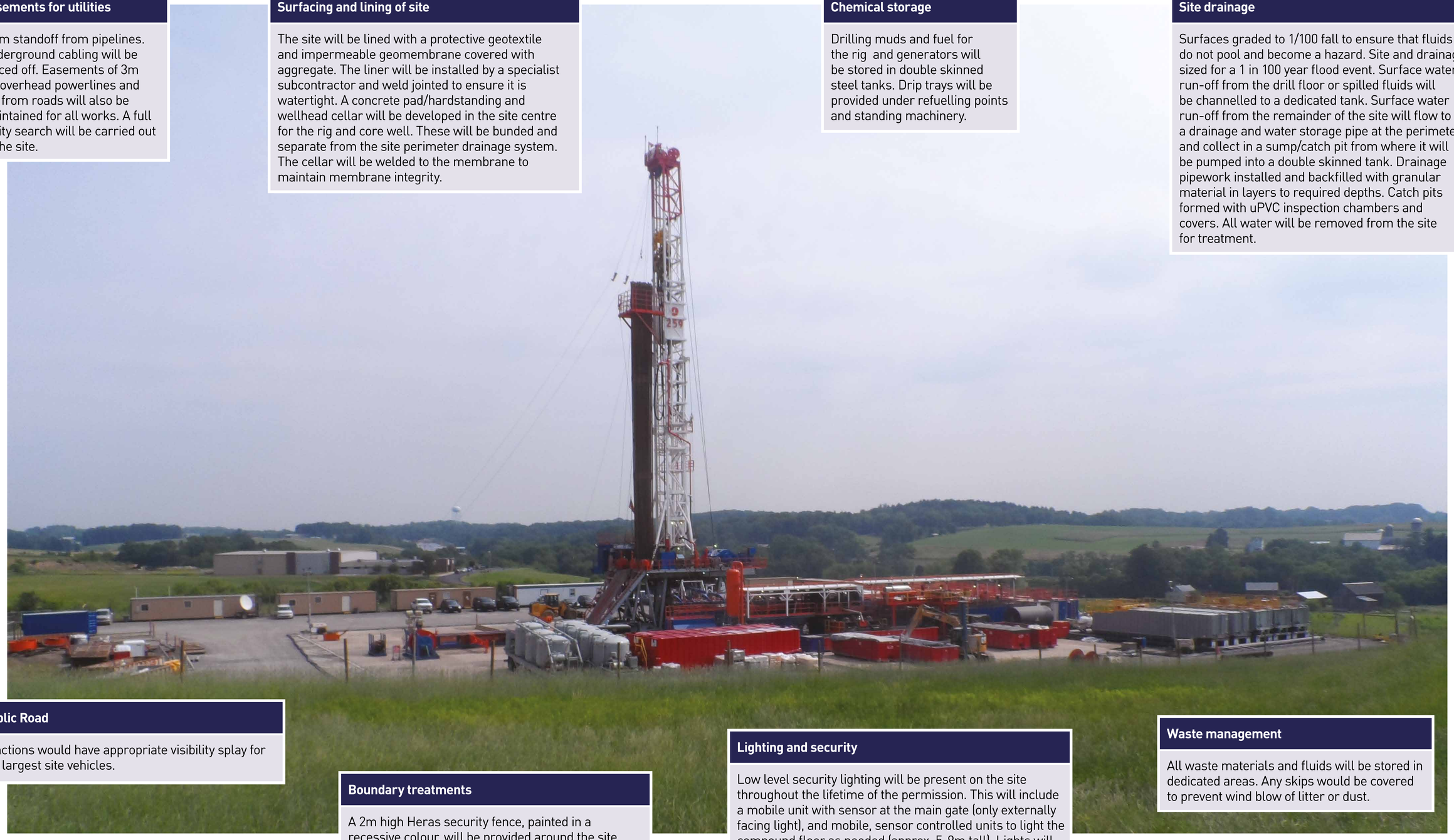
The site will be lined with a protective geotextile and impermeable geomembrane covered with aggregate. The liner will be installed by a specialist subcontractor and weld jointed to ensure it is watertight. A concrete pad/hardstanding and wellhead cellar will be developed in the site centre for the rig and core well. These will be bunded and separate from the site perimeter drainage system. The cellar will be welded to the membrane to maintain membrane integrity.

Chemical storage

Drilling muds and fuel for the rig and generators will be stored in double skinned steel tanks. Drip trays will be provided under refuelling points and standing machinery.

Site drainage

Surfaces graded to 1/100 fall to ensure that fluids do not pool and become a hazard. Site and drainage sized for a 1 in 100 year flood event. Surface water run-off from the drill floor or spilled fluids will be channelled to a dedicated tank. Surface water run-off from the remainder of the site will flow to a drainage and water storage pipe at the perimeter and collect in a sump/catch pit from where it will be pumped into a double skinned tank. Drainage pipework installed and backfilled with granular material in layers to required depths. Catch pits formed with uPVC inspection chambers and covers. All water will be removed from the site for treatment.



Public Road

Junctions would have appropriate visibility splay for the largest site vehicles.

Boundary treatments

A 2m high Heras security fence, painted in a recessive colour, will be provided around the site perimeter, which will be anchored in the ground. Between the fencing and the site compound, soil bunds up to 2m high and 6m wide with 45 degree batters will be constructed. The bunds will be covered with a grass seeded geotextile blanket.

Lighting and security

Low level security lighting will be present on the site throughout the lifetime of the permission. This will include a mobile unit with sensor at the main gate (only externally facing light), and mobile, sensor controlled units to light the compound floor as needed (approx. 5-9m tall). Lights will be designed to have minimal upward light output rating. Lighting will be angled down and into the site. CCTV will be installed at the site.

Waste management

All waste materials and fluids will be stored in dedicated areas. Any skips would be covered to prevent wind blow of litter or dust.

GENERIC FEATURES OF THE PROPOSED VERTICAL CORE WELL SITE THAT WOULD BE CONSTANT THROUGHOUT OPERATIONS

N.B. Photograph shows features that would not be present throughout operations, but illustrate a standard, similar site at one stage (drilling – Stage 2).

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Indicative Access Route

Site Location

384000
383000
382000
381000
380000
379000
378000
377000
376000

447000
448000
449000
450000
451000
452000
453000

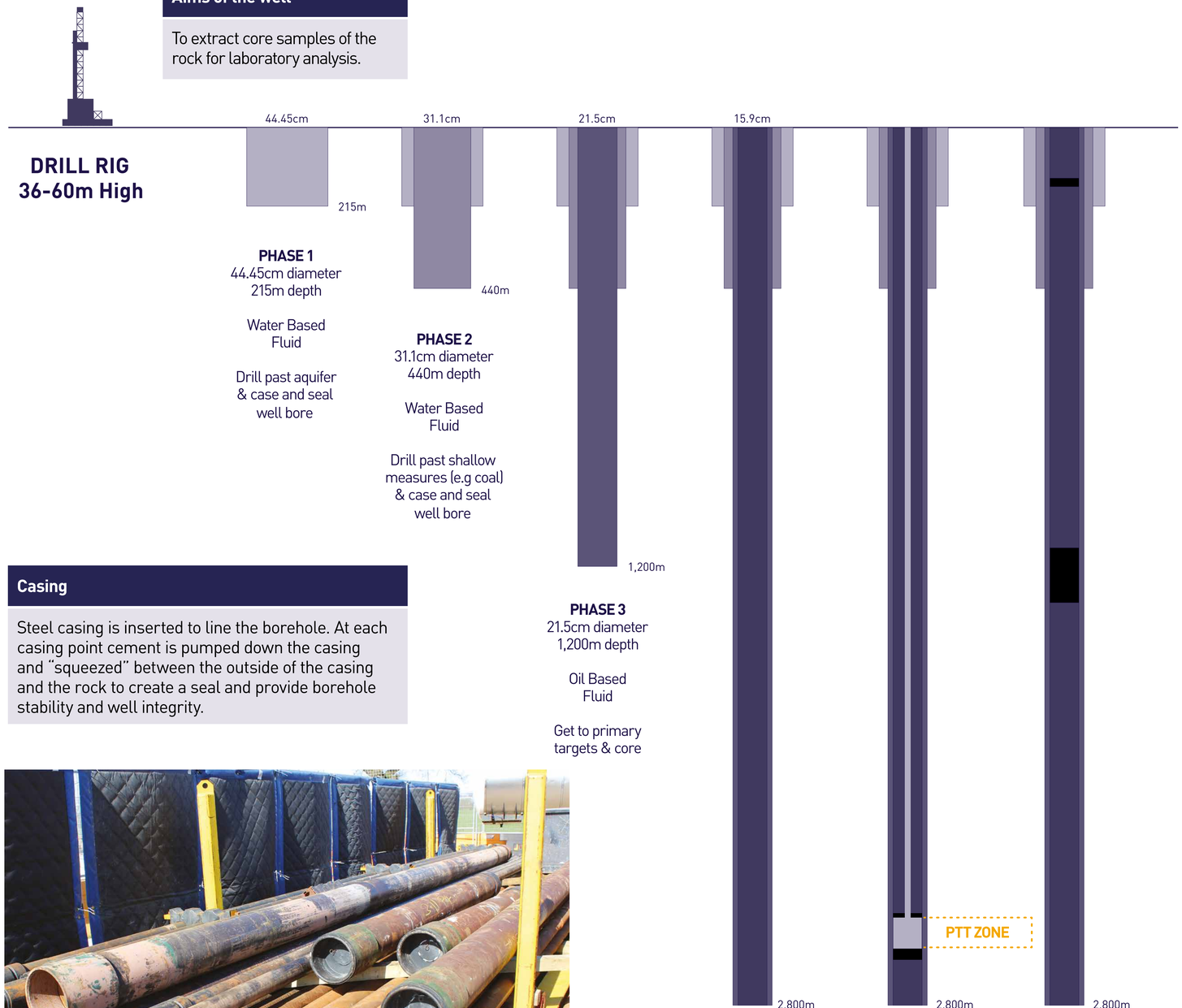
Features of the vertical core well during drilling, logging and PTT

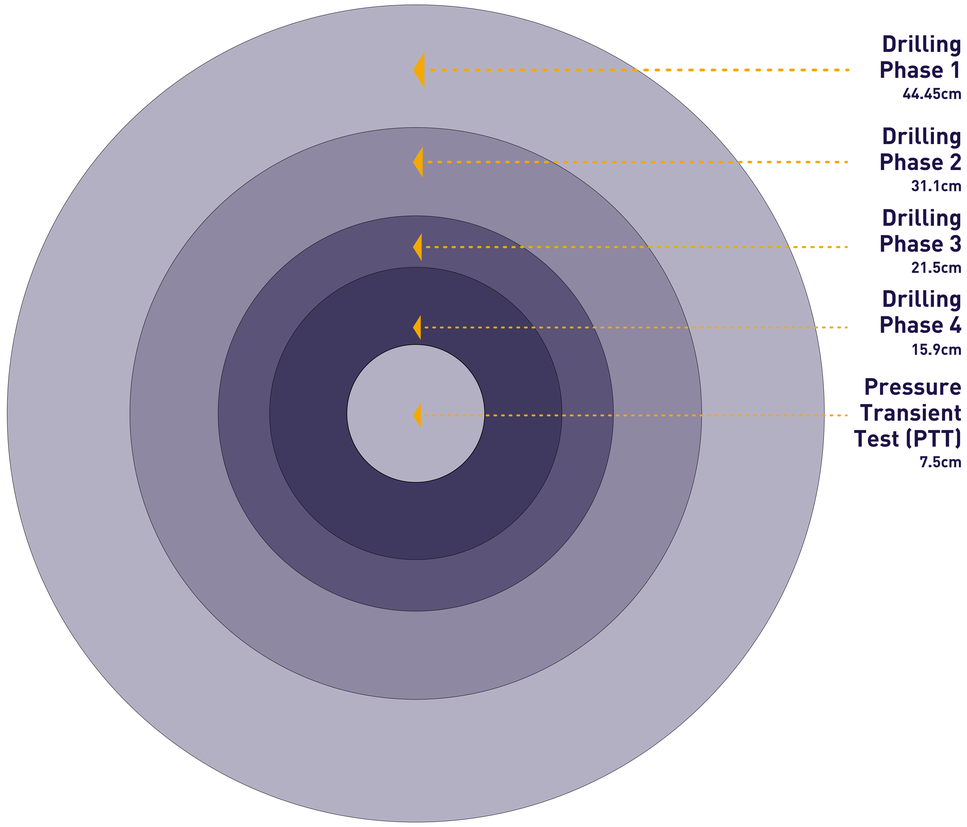
Aims of the well

To extract core samples of the rock for laboratory analysis.

Hole size

The deeper the hole gets, the narrower it has to be to allow the casing to be inserted. The initial diameter of the borehole is 44.45cm and steps down in size to 31.1cm, 21.5cm and from about 1,200m depth to the bottom of the hole it is only 15.9cm.





Casing

Steel casing is inserted to line the borehole. At each casing point cement is pumped down the casing and "squeezed" between the outside of the casing and the rock to create a seal and provide borehole stability and well integrity.

Drill pipe and casing

15.9cm drill bit

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Features of the vertical core well site during construction

Vegetation removal and stripping topsoil

All soil will be kept separate from other construction activities for restoration. Top 300mm of topsoil will be used for bunding.

Lighting

During construction site lighting will be supplemented with additional mobile, construction lighting masts.

Monitoring boreholes

Installed to allow ongoing monitoring of groundwater.

Site area

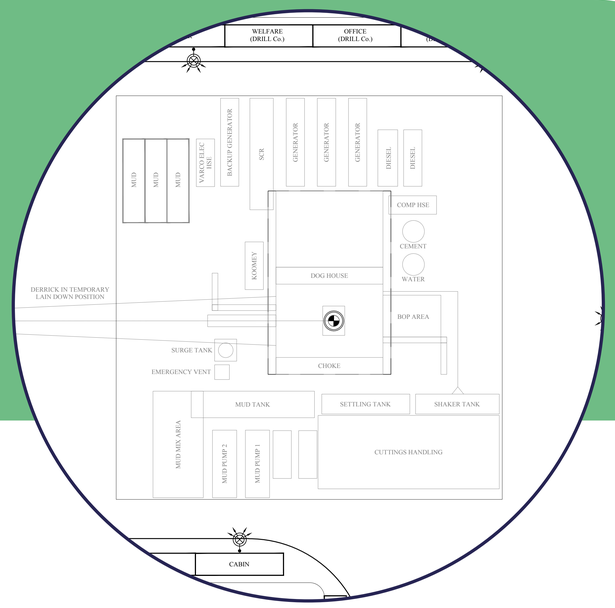
The site area has been designed with 1 in 100 falls to channel water to drainage/ water storage on site. Ramps developed for safe access and egress from hardstanding areas. Pedestrian segregation fencing placed on all sides of hardstanding area. Concrete pad developed in centre of site for rig. Drilling platform will comprise 300mm deep reinforced concrete strips lying on waterproof HDPE liner and geotextile membrane.

Cut & fill

If the site requires to be levelled, cut and fill may be required. The ground profiling required will be determined at the detailed site design stage and would not affect timings or numbers of plant and equipment required. A balance of cut and fill will be established to keep ‘cut’ material on site.

Soil bunding

2m high x 6m wide soil bunds formed from topsoil scraped from the site. Subsoil will be stored separately if required. Soil bunds will be grassed with a seeded geotextile blanket to improve stability and provide visual as well as acoustic screening.



Accommodation and welfare facilities

Offices and welfare facilities will be provided to accommodate personnel and space for workshops and storage. Site facilities, toilets and shower blocks are self contained and not connected to sewer. Solid and liquid waste are removed from site by licensed contractor as needed.

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Features of the vertical core well site during drilling and coring

Drilling fluids

Drilling fluids are used to cool the drill bit and to circulate drill cuttings back to the surface. The fluids will be stored within a closed-loop system comprising mud pumps and mud tanks with cuttings removed as they are circulated from the well.

Safety equipment

The well is not a production well so no flare is proposed on site, though the rig would incorporate a blow out preventer, methane monitoring and an emergency vent, in the unlikely case of an unexpected gas release.

Drilling rig

Up to 60m high. Additional lighting required to light mast and rig floor for night working. The lighting will be low intensity and angled to the floor to prevent overspill and angled away from sensitive receptors.

Vehicle circulation

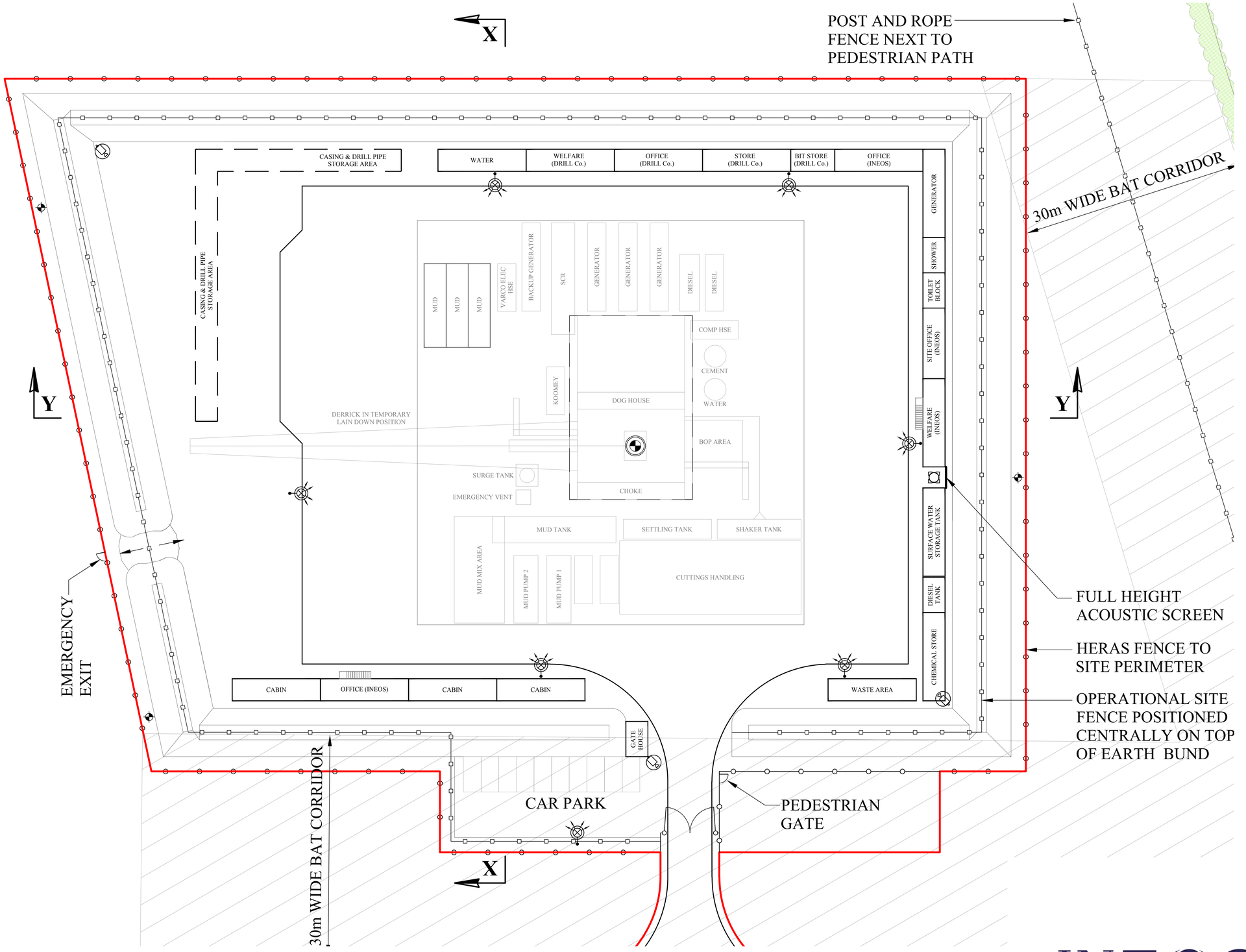
A one-way vehicle circulation system will operate on site.

Cabins

Cabins stacked up to two units high will be placed around the perimeter of the site to provide additional acoustic screening.

Waste

Solid and aqueous waste, including cuttings, waste mud and cement, will be stored in a designated area in enclosed tanks where necessary and removed by a registered waste contractor.



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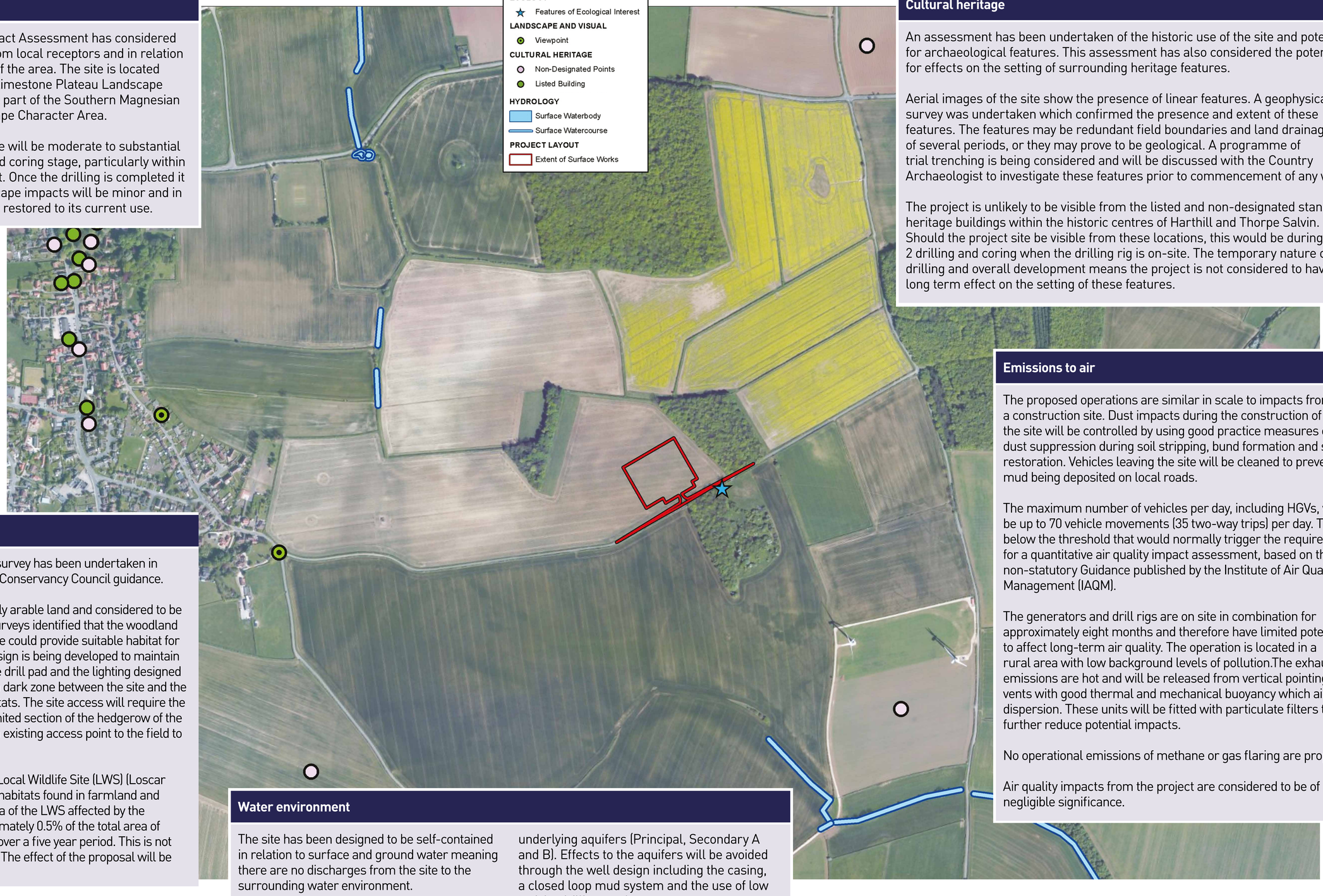
Environmental assessment

Landscape and visual

A Landscape and Visual Impact Assessment has considered the visibility of the project from local receptors and in relation to the landscape character of the area. The site is located within the East Rotherham Limestone Plateau Landscape Character Area which forms part of the Southern Magnesian Limestone National Landscape Character Area.

The assessment shows there will be moderate to substantial effects during the drilling and coring stage, particularly within close proximity to the project. Once the drilling is completed it is considered that the landscape impacts will be minor and in the long term the site will be restored to its current use.



Cultural heritage

An assessment has been undertaken of the historic use of the site and potential for archaeological features. This assessment has also considered the potential for effects on the setting of surrounding heritage features.

Aerial images of the site show the presence of linear features. A geophysical survey was undertaken which confirmed the presence and extent of these features. The features may be redundant field boundaries and land drainage of several periods, or they may prove to be geological. A programme of trial trenching is being considered and will be discussed with the Country Archaeologist to investigate these features prior to commencement of any works.

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. Should the project site be visible from these locations, this would be during Stage 2 drilling and coring when the drilling rig is on-site. 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.

Emissions to air

The proposed operations are similar in scale to impacts from a construction site. Dust impacts during the construction of the site will be controlled by using good practice measures e.g. dust suppression during soil stripping, bund formation and site restoration. Vehicles leaving the site will be cleaned to prevent mud being deposited on local roads.

The maximum number of vehicles per day, including HGVs, will be up to 70 vehicle movements (35 two-way trips) per day. This is below the threshold that would normally trigger the requirement for a quantitative air quality impact assessment, based on the non-statutory Guidance published by the Institute of Air Quality Management (IAQM).

The generators and drill rigs are on site in combination for approximately eight months and therefore have limited potential to affect long-term air quality. The operation is located in a rural area with low background levels of pollution.The exhaust emissions are hot and will be released from vertical pointing vents with good thermal and mechanical buoyancy which aids dispersion. These units will be fitted with particulate filters to further reduce potential impacts.

No operational emissions of methane or gas flaring are proposed.

Air quality impacts from the project are considered to be of negligible significance.

Ecology

An extended Phase 1 habitat survey has been undertaken in accordance with Joint Nature Conservancy Council guidance.

The habitat on the site is mainly arable land and considered to be of low ecological value. The surveys identified that the woodland to the east and south of the site could provide suitable habitat for badgers and bats. The site design is being developed to maintain an offset of over 30m from the drill pad and the lighting designed to maximise the presence of a dark zone between the site and the woodland and hedgerow habitats. The site access will require the removal and trimming of a limited section of the hedgerow of the south. The site design uses an existing access point to the field to minimise hedgerow loss.

The site is situated within the Local Wildlife Site (LWS) (Loscar Common), designated for the habitats found in farmland and scattered woodlands. The area of the LWS affected by the proposal accounts for approximately 0.5% of the total area of the LWS; with these changes over a five year period. This is not considered to be a significant. The effect of the proposal will be temporary.

Water environment

The site has been designed to be self-contained in relation to surface and ground water meaning there are no discharges from the site to the surrounding water environment.

The site is not located within a groundwater Source Protection Zone which are areas defined by the Environment Agency to show the risk of contamination from activities around groundwater sources used for drinking water. The drilling operations will pass through underlying aquifers (Principal, Secondary A and B). Effects to the aquifers will be avoided through the well design including the casing, a closed loop mud system and the use of low toxicity drilling muds.

The nearest surface water course is 520m (tributary of the River Ryton) south of the site.

The site is not within an area at risk from flooding.

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