

COMMUNITY ENGAGEMENT

# ARRETON AND GODSHILL PROJECT OVERVIEW

UK Oil & Gas PLC (UKOG) is an ambitious oil & gas exploration and production company, striving to support the drive for increased energy security for this country. We are committed to ensuring our sites, which are of a reasonably temporary nature, have minimal impact upon the locality. If our activities prove to be commercially viable, we plan to share the fruits of this success with the Isle of Wight's community.

**Thank you for visiting us today to find out more about our upcoming projects. Please have a look around our displays and feel free to discuss them with us. Our main aim is for you to leave with a clear and accurate understanding of our proposed developments and to gather your feedback. Key members of our team are here to answer any questions you may have about our proposed activities.**

Today's information event has been designed to give you the facts about our projects and to counteract the fiction being circulated by well-known and ill-informed scaremongers. We'd like to make it crystal clear that:

**UKOG is NOT a FRACKING company. Our business is focused upon conventional oil & gas, not shale gas, utilising conventional, proven and safe engineering methods. The rocks we target are all capable of good natural flow and, unlike shale gas, do not require the use of massive hydraulic fracturing to create commercially viable flow rates. Even if the current fracking moratorium is lifted, we will not seek permission to conduct fracking in the Isle of Wight.**

### **THE PURPOSE OF THIS PUBLIC EXHIBITION**

UKOG as operator of the government awarded PEDL331 Licence on the Isle of Wight, has a proven track record of good community engagement at its multiple oil & gas exploration, appraisal and production sites on the mainland. We are committed to a robust public engagement process. In keeping with both our own internal ethos and the IOW Statement of Community Involvement, this event is UKOG's first opportunity to share its proposed plans with you and to outline the measures we will employ to minimise the impact upon your day to day life during the relatively short lifetime of our projects.

As per our mainland operations, our aim on the Isle of Wight is to conduct our activities in harmony with their surroundings and the locality's residents.

UKOG wants to be a good neighbour. We are at the start of a relationship with you, the local community, which, if approved by Isle of Wight Council, would continue throughout the relatively short life of these developments. We want to make these developments the best fit for the environment and residents.

So once you have viewed our plans, we would like to hear your comments so that they can be incorporated, where possible, into our planning applications. To assist us with this objective, please fill in and add comments on the feedback forms provided.

### **THE NATURE OF OUR BUSINESS**

The outcomes of exploration and appraisal activities are by nature uncertain. It therefore remains a distinct possibility that after drilling and flow testing the two proposed wells on the island, they may not prove to be commercially viable. In this case, the wells would be plugged and the land returned to its original condition within a few years of the start of the project.

In the success case, where oil or gas production is established, this usually lasts for up to 20-25 years. At the end of the field's commercial life, the wells would then be plugged and the site restored to its prior state. UKOG is obliged to abandon wells and restore sites under the terms of its petroleum licence. It should be noted that any production phase would require a further separate planning consent.

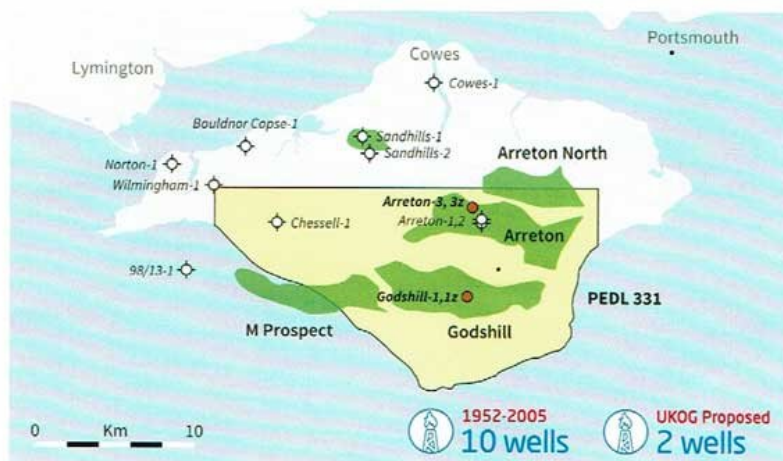
Drilling activities are also of short duration, with the two planned wells expected to last for no more than 60 days each.

# COMMUNITY ENGAGEMENT WELCOME



## ISLE OF WIGHT HYDROCARBON HISTORY

As can be seen in the figure right, the search for producible oil and gas on the Isle of Wight is not something new. Ten individual conventional oil and gas exploration wells have been drilled from 1952 through to 2005 on the island: Norton in the west, Cowes in the north, several places in-between and two here near Arreton.



Exploration at **Arreton** commenced in 1952 with the drilling of the Arreton-1 borehole by BP. It was followed up in 1974 by British Gas, with the drilling of a second exploratory borehole, the Arreton-2 oil discovery. Initial analysis demonstrated oil within the Portland limestone, but due to mechanical issues during the well's flow test, no flow of oil & gas to surface was obtained. Subsequently, UKOG's analyses have demonstrated the presence of oil within the underlying Purbeck limestone and the Inferior Oolite limestone rock formations.

No wells have been drilled at **Godshill**, exploration being by way of seismic surveying of the underlying geology by BP in 1972. UKOG's recent analysis demonstrates that an undrilled, potentially larger, look-alike geological feature to the Arreton-2 oil discovery exists. Should the proposed Arreton-3 appraisal well prove commercially viable oil flow rates, UKOG would plan to drill Godshill immediately following Arreton.

## UKOG'S PROPOSED DEVELOPMENTS

In anticipation of finding viable and economic reserves, UKOG intends to submit the necessary planning and environmental permit applications to authorise the following operations:

- **Arreton:** drilling of an appraisal borehole Arreton-3, with associated drilling of a sidetrack Arreton-3z, together with hydrocarbon testing operations prior to decommissioning and restoration.
- **Godshill:** drilling of an exploratory borehole Godshill-1, with associated drilling of a sidetrack Godshill-1z, together with hydrocarbon testing operations prior to decommissioning and restoration.

UKOG operates within a highly regulated industry, with oil & gas regulation by the Oil and Gas Authority, a Government agency reporting to the Department for Business, Energy and Industrial Strategy, who, among other things, are responsible for confirming the company's financial capacity and operational competency.

We are also regulated by the Health and Safety Executive, the Environment Agency and the local planning authority, in this case the Isle of Wight Council.

# LOCATION OF THE SITES

## ARRETON: SITE AND SURROUNDINGS

This site is privately-owned and currently worked as agricultural land. The proposed development comprises a new temporary well site set back 400m from the Newport to Sandown public highway (A3056) accessed by a new temporary highway junction and internal vehicular track. Views of the site from the north, east and south are restricted by the undulating landscape and mature hedgerows that form field boundaries and highway verges.

The wider area has the appearance of a worked landscape supporting intensive agricultural practices, a large-scale renewable energy installation and non-agricultural commercial uses. The land immediately to the east supports the Wight Farm Anaerobic Digestion Energy Power Station and land to the west supports the Blackwater Quarry and ancillary uses connected to the working of aggregates.

The nearest residential dwellings are 600m to the south-west on the A3056. The nearest farmsteads are Great East Standen Manor and Little Sullens, 700m and 950m to the north respectively. The village of Arreton is 1km to the east, Merstone 1km to the south and Blackwater 1.6km to the west. Rookley is 2.7km to the south-west and Newport is 3.8km to the north-west.





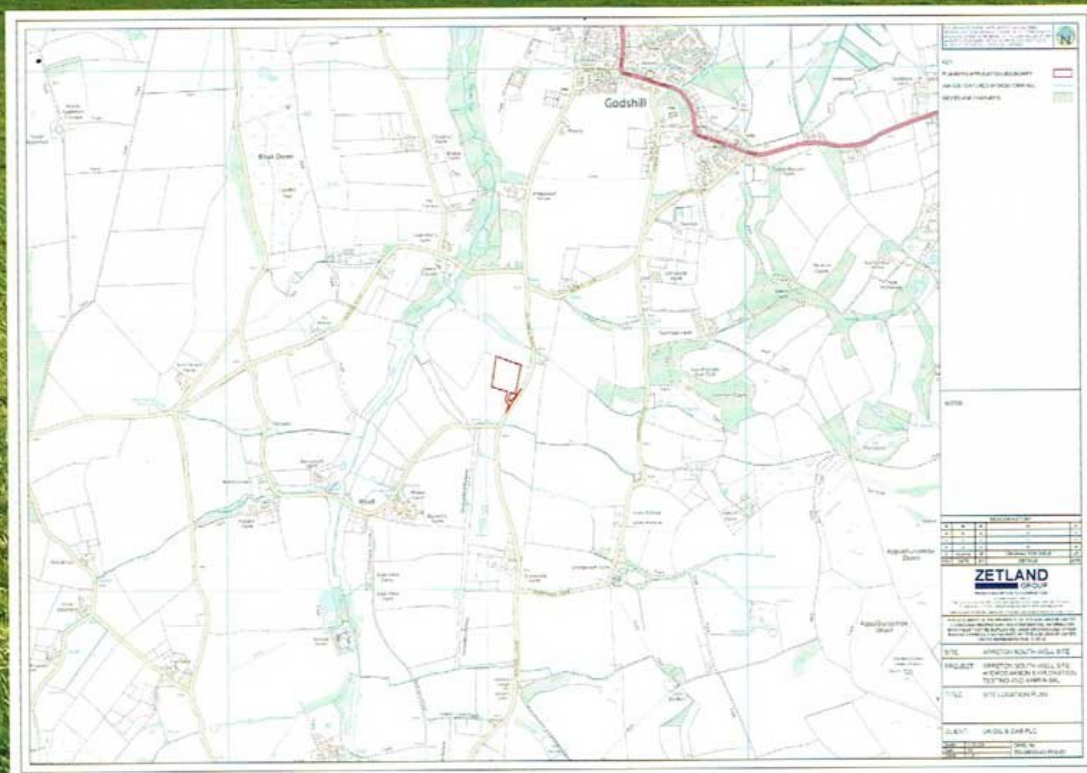
## COMMUNITY ENGAGEMENT

# LOCATION OF THE SITES

### GODSHILL: SITE AND SURROUNDINGS

This Site is privately-owned and currently worked as agricultural land. The proposed development comprises a new temporary well site set back from Whitwell Road, behind hedge screening. Open agricultural views surround the site with the nearest residential dwelling situated 400m to the northwest on Merry Lane.

The site is situated between the settlements of Godshill, 1km to the north, and Roud 600m to the south. Whitwell is 2.5km to the south, Wroxall 3km to the east and Rookley 3.5km to the northwest. The River Yar to the west of the site runs north south, parallel with Whitwell Road. A new agricultural farm building has recently been built to the south of the proposed site by the landowner.





# PHASES OF DEVELOPMENT

There will be two separate planning applications submitted to the Isle of Wight Planning Department in 2020. The Arreton application is more advanced than that of Godshill, but feedback received during this event will assist in the completion of both applications. Subject to the applications being approved, it is yet to be decided if the two projects are to be treated as individual projects running independently of each other but not necessarily at the same time, or alternatively, as a concentrated co-operative approach with benefits of scale and efficiency in an attempt to minimise disruption during mobilisation on and off the island.

For the purposes of this public event it is assumed they are one project with one mobilisation onto the island and one demobilisation off the island. Both sites will be constructed individually. The drilling rig and associated equipment will then mobilise to the first site and complete the drilling programme. The rig will then move to the second site and complete the drilling programme. The table below sets out the four phases of development at each site location, together with the anticipated works involved.

PHASES OF DEVELOPMENT - ARRETON	
Phase 1	<b>Access and Well Site Construction:</b> minor highway works to facilitate the installation of a new junction onto the Newport to Sandown Highway (A3056); the installation of up to 400m of new compacted-stone access track, construction of a compacted-stone level working platform on top of an impermeable liner with perimeter surface run off containment ditches; the installation of drilling cellars to accommodate a conductor casing; the erection of boundary fencing, entrance gates and ancillary development.
Phase 2	<b>Drilling and Testing:</b> mobilisation/demobilisation of surface plant and machinery ancillary to the drilling of one borehole (Arreton-3) and one sidetrack borehole (Arreton-3z), plus subsequent well testing. NB: there will only be one surface borehole, as the Arreton-3z sidetrack will be drilled from Arreton-3 below the surface.
Phase 3	<b>Well Plugging, Abandonment and Site Decommissioning:</b> the safe cement plugging of the Arreton-3/3z borehole followed by the removal of surface plant and machinery.
Phase 4	<b>Site Retention/Restoration:</b> retain the site to allow for a period of review prior to either a further application to authorise further work or restore the site to its original use subject to a period of aftercare.
PHASES OF DEVELOPMENT - GODSHILL	
Phase 1	<b>Access and Well Site Construction:</b> minor highway works to facilitate the installation of a new junction onto Whitwell Road construction of a compacted-stone level working platform on top of an impermeable liner with perimeter surface run off containment ditches; the installation of drilling cellars to accommodate a conductor casing; the erection of boundary fencing, entrance gates and ancillary development.
Phase 2	<b>Drilling and Testing:</b> mobilisation/demobilisation of surface plant and machinery ancillary to the drilling of one borehole (Godshill-1) and one sidetrack borehole (Godshill-1z), plus subsequent well testing.
Phase 3	<b>Well Plugging, Abandonment and Site Decommissioning:</b> the plugging and abandonment of the borehole followed by the removal of surface plant and machinery.
Phase 4	<b>Site Retention/Restoration:</b> retain the site to allow for a period of review prior to either a further application to authorise further work or restore the site to its original use subject to a period of aftercare.





## LIKELY IMPACTS AND EFFECTS OF THE DEVELOPMENT

Each site application is for a period of **3 years only**. The well sites are temporary structures, designed to be removed without any trace of their prior existence. Once exploration is complete the site will be **returned to its original** topography and land use.

Both sites have been selected to **avoid the Isle of Wight AONB**, with consideration given to ensure zero encroachment on any areas designated for their natural and built heritage and deliberately locating the sites away from natural and built assets to minimise the scope for disturbance, disruption or any adverse effects upon the setting of such features. The design of the sites **minimises residual adverse effects**, with both sites taking full advantage of any available natural screening. Only the top of the drilling rig mast will be visible from most directions. The rig will only be on the sites for a limited period when drilling of the boreholes is taking place. Other than the visual impacts, all other effects are largely contained to within the site boundary, or within the immediate vicinity of the site. **Considerate construction and operational activities** will largely be contained to within standard commercial transport operating hours, with the majority of heavy goods vehicle (HGV) movements being outside peak flow. Transport arrangements will be the subject of a traffic management plan that steers delivery routes away from villages and sensitive land uses such as schools.

We also plan to achieve an **environmental "net gain"** at our sites via a rolling programme of environmental and biodiversity enhancements designed to deliver a lasting legacy after the development has gone.

Throughout the life of our projects, UKOG will **commit to using local island suppliers** where possible to help boost the local economy. Should our developments be approved, UKOG would commence supply chain events to ensure that local firms and businesses can benefit.

In the event of success, UKOG will also **commit to paying a royalty from its production revenues** to the local community so that the Isle of Wight benefits from its success. The royalty would be separate from and in addition to its business rate taxes.

# COMMUNITY ENGAGEMENT KEY FACTS



**We are not fracking.** This is not shale gas. We do not want to frack and do not need to. The rock formations we are targeting have their own natural ability, via mother nature, to flow oil & gas at commercially viable rates. Our work uses only proven, safe, conventional oil field techniques used in over 2,000 wells in UK's onshore sector. Our wells will comprise small diameter holes, culminating in a 6-inch diameter hole (i.e. the size of a small domestic drainpipe) within the target reservoir horizon, which will then be lined with heavy duty steel pipe and impermeable concrete some three-quarters of a mile or more below the surface.

We are heavily regulated by four bodies that ensure our practices are physically safe (Health and Safety Executive), environmentally safe and in line with best practice (Environment Agency), have minimal impact on the locality (Isle of Wight Council) and comply with the terms and operational standards of the licence issued by the Government (Oil and Gas Authority). We cannot undertake any activities without the relevant approvals and permits from all four regulators.

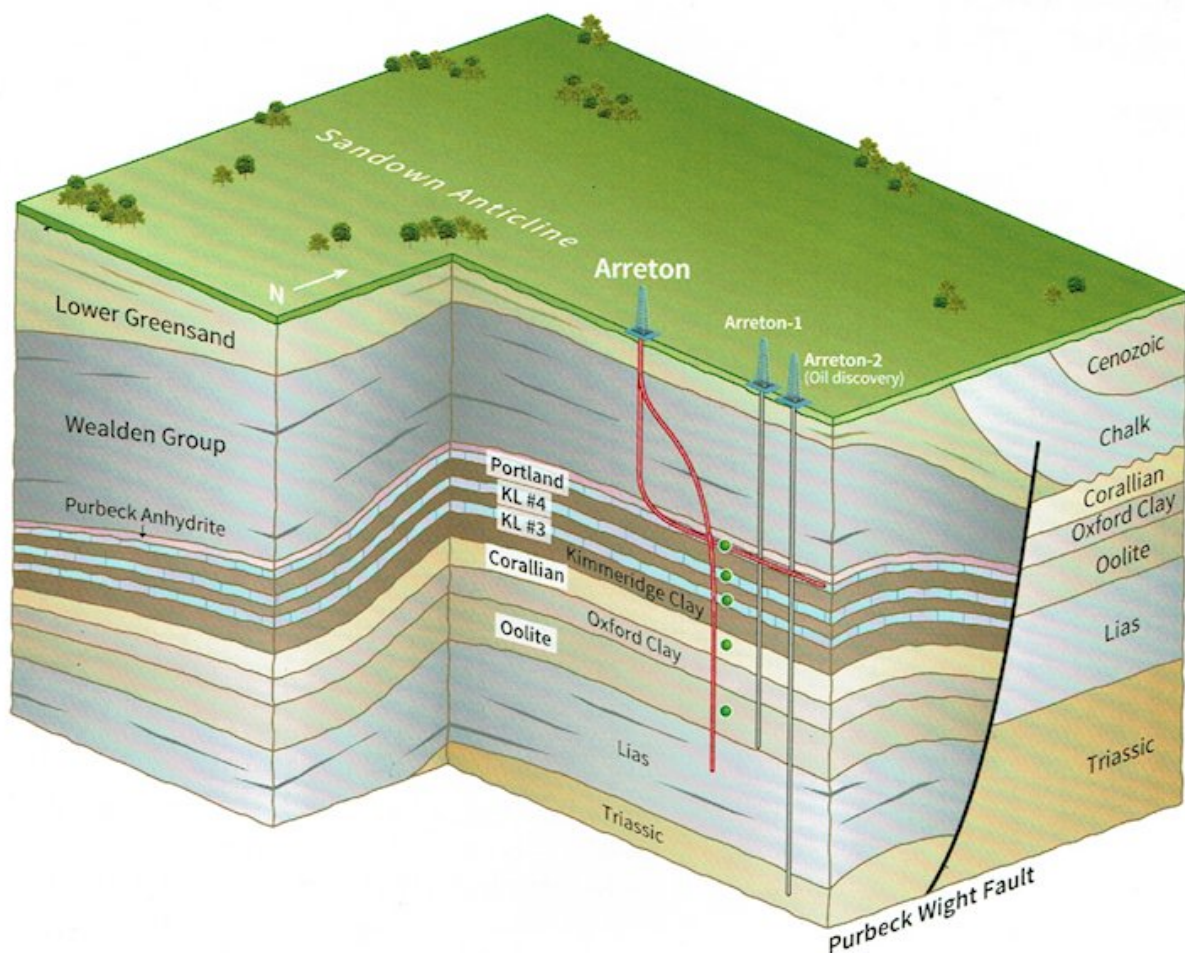
**We are not polluting the area.** Just like our SE England mainland sites, Arreton and Godshell will be zero-discharge sites. The ground will be protected over the whole "active area" well pad and perimeter ditches by an impermeable membrane. Any water (including rainwater) cannot penetrate below or away from the site and will be removed and disposed of at an Environment Agency approved waste-water facility. There will also be secondary containment protecting oil and chemical tanks.



**We are not causing earthquakes.** The British Geological Survey (BGS), Imperial College and the Government have concluded that seismic activity in Surrey is entirely natural in origin and not induced by oil and gas extraction. These small, low magnitude natural tremors are interpreted by the BGS to be centred on movements on a seismically active fault underlying Newdigate.

**We will not industrialise where we operate.** We select sites that are well screened and cause little or no disruption to the community and to the ecology and environment. Each site is less than the size of two football pitches. Other than the mast of the drilling rig (which is only present for around 60 days maximum on each site), our equipment is low-rise and low visual profile, being typically no higher than a portacabin. We are only seeking initial permission to drill and flow test on a limited-size well pad. Oil & gas exploration activities are temporary. Once our activities have finished at the sites, we will plug the wells by filling them with high grade impermeable concrete and restore the site, using the original topsoil back to their former usage.

**We will not create HGV chaos.** In terms of vehicle movements, from our experience and actual data from our mainland sites, the number of HGV's during the short drilling phase average around 2.5 per day, with a peak in the first and last week of drilling up to about 10 per day. This is significantly fewer than a construction site of the same size.



# DO WE STILL NEED OIL?

Apart from fuel for vehicles and ships, around 50% of UK oil consumption goes towards aviation and oil derived materials, which are a major component of countless everyday items, including medical equipment, mobile phones, computers, clothing, vehicles, car and bicycle tyres, toiletries and essential pharmaceuticals and even the turbine blades for wind farms.

It is estimated that up to 50% of components in future electric vehicles will be derived from oil-based materials as is the case for the new breed of fuel efficient, quiet aeroplanes.

Our activities are designed to increase the UK's energy security by reducing the increasing dependence on long-distance oil imports from places that often have far less rigorous safety and environmental standards than in the UK. Even if all vehicles become electric by 2030, we will still need to import 300,000 to 400,000 barrels of oil per day without increased UK onshore oil production.

Which of these can you do without?

- **Food** – fertilisers, pesticides, farm vehicles, refrigeration, transport vehicles, cooking heat
- **Habitat** – insulation, glass, plasterboard, nails/screws, carpets, curtains, concrete, transport
- **Security** – Police transport, communications, Fire transport, Ambulance transport, lighting
- **Education** – computers, ink, school buildings, display boards
- **Medical care** – hospital buildings, pharmaceutical products, anaesthetics, sterile dressings

In our working lives we need places of production, communication, transportation and again the list of petroleum derivative products is endless...which of these can you do without?

- **Production** – base materials, heating, freezing, pressure, lighting
- **Communication** – phones, computers, ink
- **Transportation** – vehicles, planes, trains, boats

Our industry is aware of the continuing need to find cleaner more efficient ways to bring our essential enabling products to the user and this will continue to evolve through the current energy transition and initiatives. We hope you have reflected on the fact that fossil fuels are not just a fuel, not just a choice of energy product for your car or heating but so much more. Where would you prefer your raw products were produced? Here in the UK you can be assured they are produced in a regulated way to UK standards and that UK PLC will benefit from them in employment and taxes. By producing and using oil & gas locally we actually reduce carbon emissions, by avoiding super-tankers, large compressors and long pipelines.



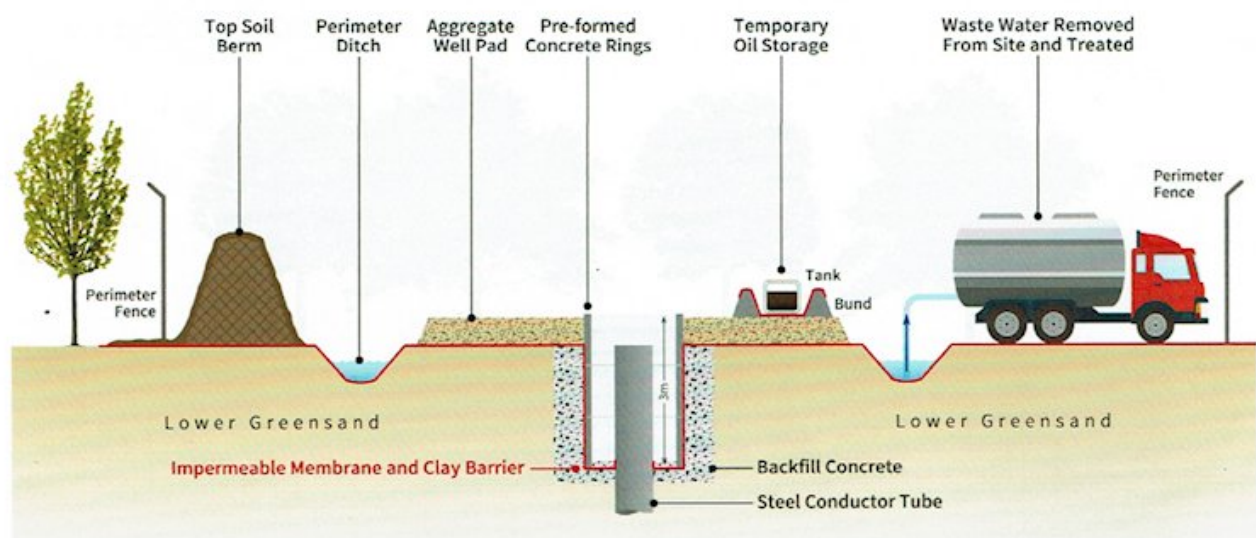
Image courtesy of IOGP

## ECOLOGY & ENVIRONMENT IMPACT STUDIES

Potential impacts of the proposed developments have been considered in respect of Ecology, Landscape and Visual, Cultural and Heritage, Air, Lighting, Noise, Traffic, Transport and Access. Independent Specialist Impact studies have been undertaken to ensure the selected sites can manage and mitigate any necessary measures and ensure the survey recommendations form an integral part of the design and planning application.

## GROUND AND GROUNDWATER PROTECTION

The Arreton and Godshill sites will be specifically designed and constructed to ensure that zero fluids, including rainwater, can discharge down into the ground beneath and adjacent to the site. The boreholes will be cased in steel and impermeable concrete hundreds of metres below any potential drinking water source. At and near the bottom of the wells, where the target oil & gas reservoirs are located, any water found would be many times more saline than sea water. Any water recovered, either from above or below ground, will be transported off site to an Environment Agency approved waste-water facility.



## VINEGAR/ACETIC ACID

There are many unfounded claims made about acidisation or acid-wash, which has been used safely in the global oil & gas and water industries for 120 years, and for over 50 years throughout the UK. As an example, this technique has been safely used over many years in a limestone oil reservoir in the Wyth Farm oil field in Dorset.

During a flow test, it may be apparent that the natural fractures within the target formation have become blocked by the drilling and well construction debris (drilling fluids and rock cuttings). Where this is the case, a dilute acetic acid (i.e. vinegar) will be used to clean out the natural fractures and restore natural permeability. This activity is known as an acid wash and is a similar technique to those used in the water industry. The acid reacts with the debris, resulting in carbon dioxide gas ( $\text{CO}_2$ ), water ( $\text{H}_2\text{O}$ ) and calcium chloride ( $\text{CaCl}_2$ ), a non-hazardous salt being a major component of sea water.



## EARTHQUAKES

As mentioned within our displays, there have been ten previous exploration drilling sites on the island without reports of ground tremors or intrusive surface vibrations. This an unfounded scare tactic from those opposed to oil and gas exploration. The "Surrey swarm" seismic events were not caused by oil & gas extraction, as demonstrated in specialist technical studies by Imperial College London and the British Geological Survey.

Lead author Dr Stephen Hicks, of Imperial's Department of Earth Science and Engineering, said: "The quakes seem to have occurred naturally, and our findings suggest their closeness to oil extraction sites is a coincidence." - August 2019

Surrey Live reports survey by British Geological Society: "While most of the earthquakes reported in the Blackpool area have been due to fracking, the BGS has concluded the cause of the ones in Surrey is natural." - November 2019

To add perspective to the levels of noise and vibration you may expect from a well site, we would highlight more familiar practices such as construction, pile driving and quarrying for minerals. At surface these can create much greater levels of noise and vibration than those of our drilling operations. Drilling creates little if any disturbance at the surface.



# COMMUNITY ENGAGEMENT

# HGV MOVEMENTS



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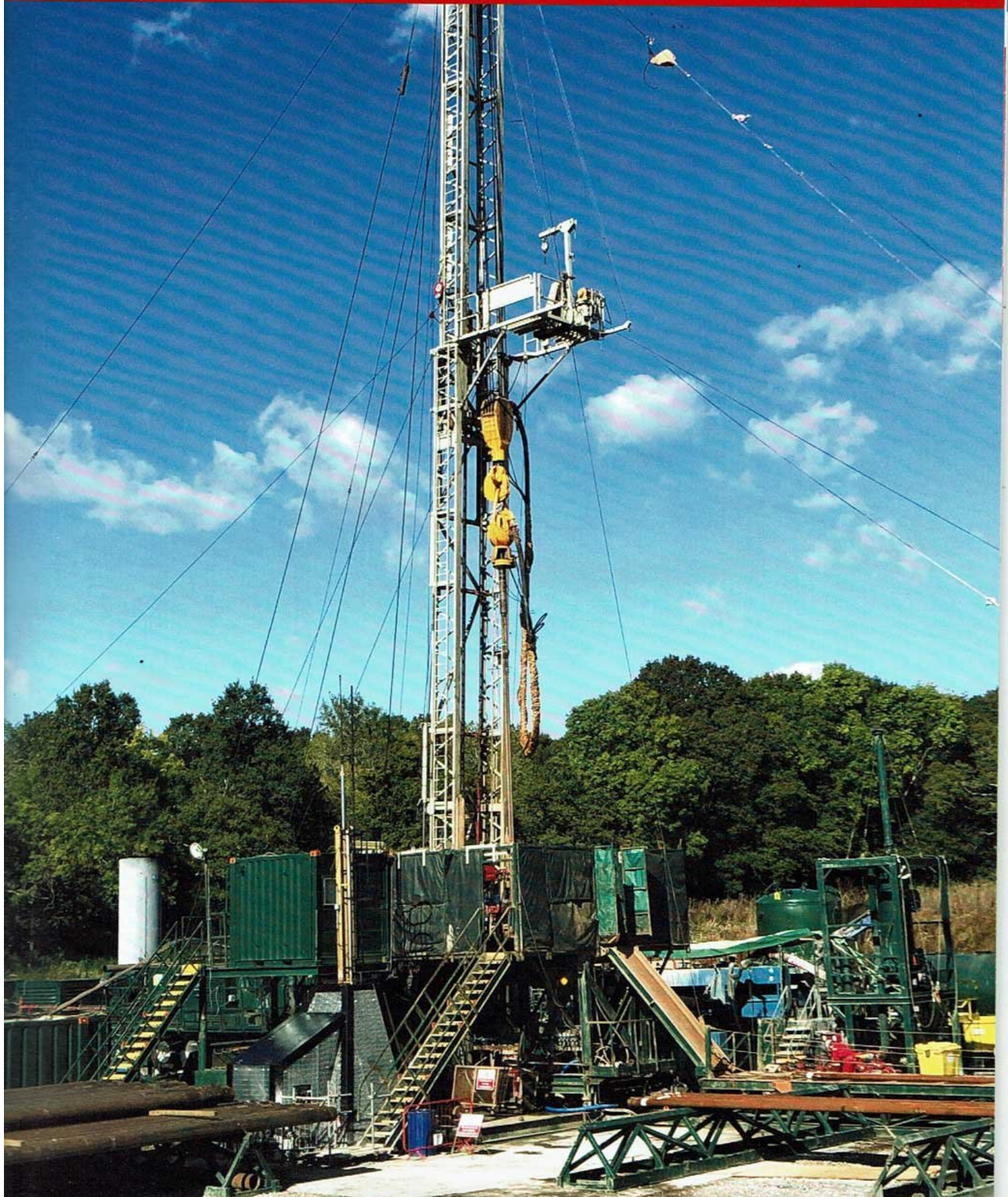


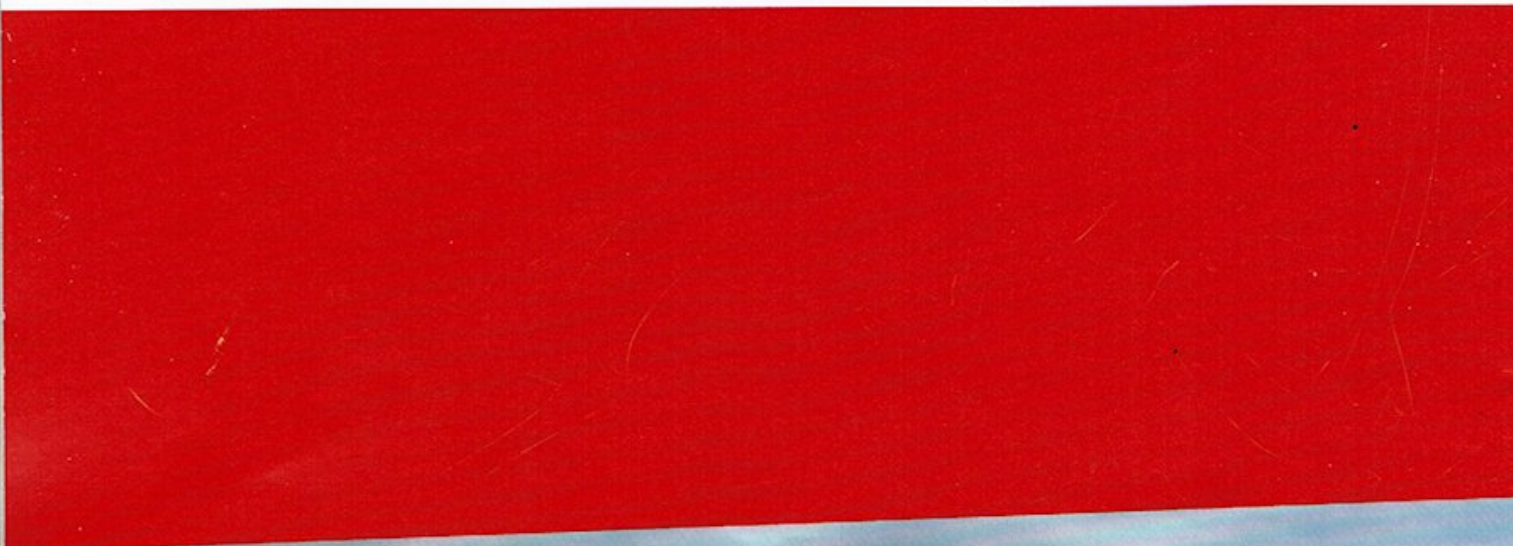


UKOG is very aware that tourism is a key commercial and social contributor to the island and does not wish to add additional traffic onto the road network during the peak Summer season. To this end, the project timing is intended to avoid peak season traffic and daily peak commuting traffic through our transport management plan to be approved by the island's transport authority. Rather our operations will, via targeted procurement of local transport, hospitality and services, enhance off season revenue and job opportunities, should permissions be granted.

The table below provides our forecast of **two-way movements per day** throughout the various project phases. These are based on actual recorded figures during UKOG's operations in West Sussex. NB: maximum peak numbers are quoted with average movements being far less.

<b>ARRETON WELL SITE: HGV MOVEMENTS SCHEDULE</b>						
PHASE	Sub-Phase	Hours of HGV Operation			Estimated Duration	Estimated 2-Way HGV Movements (in and out)
		Mon - Fri	Sat	Sun/Bank Hols		
<b>PHASE 1: ACCESS AND WELL SITE CONSTRUCTION</b>	1.A Access and Well Site Construction	07:00 - 19:00	09:00 - 13:00	None	10 weeks	up to 15 per day
<b>PHASE 2: DRILLING, TESTING AND APPRAISAL</b>	2.A: Drilling - Mobilisation/ Demobilisation	07:00 - 19:00	09:00 - 13:00	None	3 weeks	up to 15 per day
	2.B: Drilling	07:00 - 19:00	09:00 - 13:00	None	15 weeks	
	2.C: Testing - Mobilisation/ Demobilisation	07:00 - 19:00	09:00 - 13:00	None	3 weeks	
	2.D: (i) Well Testing	07:00 - 19:00	09:00 - 13:00	None	10 weeks	up to 15 per day
	2.D: (ii) Extended Well Testing	07:00 - 19:00	09:00 - 13:00	None	16 weeks	up to 5 per day
	2.E: Sidetrack Drilling	07:00 - 19:00	09:00 - 13:00	None	15 weeks	up to 15 per day
	2.F: Maintenance Workover	07:00 - 19:00	09:00 - 13:00	None	4 weeks	
<b>PHASE 3: WELL PLUGGING, ABANDONMENT AND DECOMMISSIONING</b>	3.A: Plugging and Abandonment	07:00 - 19:00	09:00 - 13:00	None	3 weeks	up to 10 per day
	3.B: Removal of Surface Equipment	07:00 - 19:00	09:00 - 13:00	None	2 weeks	up to 5 per day
<b>PHASE 4: SITE RESTORATION</b>	4.A Site Restoration	07:00 - 19:00	09:00 - 13:00	None	5 weeks	up to 10 per day





For further information about UKOG  
and its current portfolio please visit:  
[www.ukogplc.com](http://www.ukogplc.com)