

Permitting decision

Variation to permit

We have decided to issue the variation for Stockbridge Oilfield operated by IGas Energy Development Limited

The variation number is EPR/YP3537YK/V003

We have also carried out an Environment Agency initiated variation to the permit.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

This variation is required as the Environment Agency has a duty, under the Environmental Permitting (England and Wales) Regulations 2016, regulation 34(1), to periodically review permits. As a result of that review we have identified a number of necessary changes we must make to your permit to reflect current legislation and best practice. These changes principally relate to:

- Implementation of the Mining Waste Directive namely the variation of extractive waste management activities;
- Addition and variation of groundwater activities; and
- Variation of oil storage activities.

The variation also aims to:

- Consolidate all previous variations to the original permit so as to bring them together into one permit so the requirements will be clearer.
- Formalise changes to monitoring requirements and compliance limits where we have agreed them in writing, for example as the result of an environmental risk assessment review.
- Address site specific issues which result in a change to the current permit, for example incorporating completed improvement conditions into the permit and removing inconsistencies.

The permit comprises three separate sites five to seven miles North West of Winchester in Hampshire. The primary site is Larkwhistle Farm (postcode SO21 1HG) with satellite sites Folly Farm and Hill Farm. The Application was duly made on 12th July 2017.

We gave the Application the reference number EPR/YP3537YK/V003. We refer to the Application as “the Application” in this document in order to be consistent.

The number we have given to the permit is EPR/YP3537YK. We refer to the permit as “the Permit” in this document.

Purpose of this document

This decision document provides a record of the decision making process. It summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account.

This decision document provides a record of the decision making process. It:

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- explains why we have also made an Environment Agency initiated variation
- shows how we have considered the consultation responses.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit. The introductory note summarises what the permit covers.

Radioactive Substances Activity Permit

This has been assessed as part of pre-application discussions for this application. A separate bespoke radioactive substances permit is required for this operation for receipt of produced water from other IGas sites : Avington, Goodworth, Holybourne and other IGas sites in the Weald basin and for disposal of produced water into the Portland Sand Formation. This is subject of a separate permit application and associated decision document, which is number EPR/NB3692DA.

Brief outline of proposed process

The Installation comprises three separate sites, five to seven miles North West of Winchester in Hampshire. The primary site is Larkwhistle Farm which is manned 24/7. The satellite sites are Folly Farm and Hill Farm both of which are unmanned, but they are visited four times daily by operators from Larkwhistle Farm.

The installation comprises twelve oil production wells, six of which are actively producing across the three well sites, from the Great Oolite Formation. A well listing is provided in table 1 below. The oil is recovered by a 'Power Fluid' Jet pumping system widely used by the operator at their low reservoir pressure onshore sites. The produced fluids, the power fluid, crude oil and produced water are heated by diesel fuelled bath heaters, they are then passed into a separator unit. The separated produced water is sent to on-site storage, the crude oil is also sent to storage, whilst the power fluid is recycled; treated with chemicals and pumped back down the appropriate oil well on each site. The chemical treatment package consists of a de-emulsifier, corrosion inhibitor, wax and scale inhibitors to prevent formation damage, then finally biocides and oxygen scavengers to prevent reservoir souring.

The total crude oil storage capacity is 863 tonnes (Folly Farm 178 tonnes, Hill Farm 170 tonnes and Larkwhistle Farm 515 tonnes). Crude oil is transported by road tanker to the BP Hamble Terminal for subsequent export by sea tanker.

There are three permitted reinjection wells under this variation. One at Larkwhistle Farm and one at Hill Farm into the Great Oolite Formation for production support, and one at Folly Farm into the Portland Sand Formation for disposal. Larkwhistle Farm also receives produced waters from other IGas sites for reinjection, including: Avington, Goodworth Clatford and Horndean.

As part of this variation the operator has provided a Hydrogeological Risk Assessment and supporting information to demonstrate that the receiving groundwater in the Portland Sand Formation is permanently unsuitable for other purposes at this location (Folly Farm). We have assessed this discharge of produced

water for disposal at this location as acceptable. The operator would also like to convert additional wells to reinject into the Portland Sand Formation in future. These are not covered by this permit variation and a separate application with an updated Hydrogeological Risk Assessment would be required to consider these new proposals from a groundwater perspective.

Generally, site surface water run-off is collected in the site drains, passed through separators, any recovered oil is added to the crude storage and the separated surface water goes to the produced water storage for reinjection into the Great Oolite Formation. At Larkwhistle Farm and Hill Farm site surface water is collected for reinjection. At Folly Farm site surface water is collected and mixed with produced water and discharged into the Portland Sand Formation. This process will be reviewed as part of Improvement Condition 7 to identify alternative options for managing and discharging site surface water to ensure site surface water is not discharged for disposal in future. The operator may look to discharge this site surface water to ground via soakaways in future subject to satisfying the pre-operational condition PO 01 in this permit.

Produced gas is vented to atmosphere through flame-trapped vents. Improvement Condition 5 requires the operator to review alternative options for recovering and using the gas where practical.

The principal releases into the environment comprise:

- (a) Emissions to air of hydrocarbon gases from separation of volatiles in storage
- (b) Reinjection of produced water and clean rainwater into the oil bearing reservoir (Great Oolite Formation) and injection of produced water into the Portland Sand Formation. Surface water runoff may be discharged to ground via site soakaways in future following approval of the pre-operational conditions.
- (c) Releases of engineering waste resulting from maintenance work to a licensed waste disposal facility.

The variations issued on 17/08/15 and 13/04/18 authorised the drilling of 4 new sidetrack wells.

This variation under the permit review updates the permit in line with our Oil and Gas Sector guidance, consolidates the variation changes and contains a number of improvement conditions and pre-operational conditions for approval.

Table 1: Well listing summary and locations

Well Site	Well ID		Deviated	Type	Status	Well Surface Location		Well Bottom Hole Location	
						Easting	Northing	Easting	Northing
Larkwhistle Farm	STK	3z	Yes	Oil Producer	Producing	445092	135578	445044	134562
	STK	9	Yes	Oil Producer	Long Term Shutdown	445109	135579	445413	135809
	STK	13	Yes	Oil Producer	Long Term Shutdown	445103	135561	444300	135210
	STK	15	Yes	Oil Producer	Long Term Shutdown	445113	135573	446240	135749
	STK	16YI	Yes	Water Injector	Injecting	445085	135597	444945	136297
	STK	21	Yes	Oil Producer	Producing	445101	135590	443989	134907
	STK	24	Yes	Oil Producer	Producing	-	-	-	-
Hill Farm	STK	11	Yes	Oil Producer	Long Term Shutdown	443455	136418	444325	135931
	STK	14	Yes	Oil Producer	Producing	443442	136414	443031	135109
	STK	18	Yes	Oil Producer	Suspended	443476	136419	442619	135333
	STK	19i	Vertical	Water Injector	Suspended	-	-	-	-
	STK	25z	Yes	Oil Producer	Producing	-	-	-	-
Folly Farm	STK	WD2i	Vertical	Water Injector	Injecting	-	-	-	-
	STK	12	Yes	Oil Producer	Producing	442307	133860	443308	134390
	STK	17	Yes	Oil Producer	Producing	442286	133842	442000	134077
	STK	26	Yes	Oil Producer	Producing	-	-	-	-

Description of the changes introduced by the variation

This is a Normal Variation to add or change the following activities.

- 1) Installation Activities, Oil storage and handling has been changed to a schedule 1.2 A(1)(e)(i) activity under the Industrial Emissions Directive and updated Environmental Permitting (England and Wales) Regulations 2016, as a result of renumbering of schedule 1 activities in the updated regulations. This activity was previously permitted as 1.2A(1)(h)(i) in the existing permit. The existing oil storage activities on site have not changed from those currently permitted.
- 2) A Mining Waste Operation, involving a Mining Waste Facility as defined by the Mining Waste Directive (2006/21/EC) and Schedule 20 of the Environmental Permitting (England and Wales) Regulations 2016, as amended, relating to the management of extractive waste. The permit is being varied to include activities specified by the approved Waste Management Plan. This includes addition of a non-hazardous mining waste facility for storage of produced water on site prior to reinjection for disposal at Folly Farm, venting of gas from storage tanks, well maintenance and well workovers. Well maintenance includes hot oil washing, wax dissolver treatment and acid treatment for scale removal. These are not new activities, and were previously covered by the operators operating techniques in their existing permit. Well decommissioning is not included in this permit under the waste management plan as requested by the operator, and a future variation to the mining waste activities will be required prior to decommissioning.
- 3) Groundwater Activities as defined by the Groundwater Directive and Schedule 22 of the Environmental Permitting (England and Wales) Regulations 2016, as amended, for the re-injection of produced water for production support and disposal and for discharges of site surface water to ground via soakaways. There is one reinjection borehole for production support into the Great Oolite Formation at Larkwhistle Farm and one at Hill Farm. There is also one reinjection borehole for disposal into the Portland Sand Formation at Folly Farm. Groundwater activities for reinjection of produced water were previously permitted as a directly associated activity. There are soakaways at all three sites for discharge to ground of site surface water, which are subject to approval via pre-operation conditions prior to use.

Key issues of the decision

Background

This variation is part of a sector wide permit review of onshore oil and gas sites. The variation to the permit is for continued operation of an existing conventional oil and gas production site. This variation does not permit any hydraulic fracturing as specified in Schedule 1 of the permit under Table S1.1, activity A3.

The operator previously held an installation permit as an onshore oil and gas production facility, unloading, handling or storage of crude oil, or treatment under the Pollution Prevention and Control (England and Wales) Regulations 2000. During 2008, these permits automatically became environmental permits under the environmental permitting regime. This regime was expanded in 2010 and is now covered by the Environmental Permitting (England and Wales) Regulations 2016 (the 2016 Regulations).

Since 1 October 2013 we have taken the view that operators of new onshore oil and/or gas exploration or appraisal facilities require environmental permits where activities include:

- the management of extractive waste, whether or not this involves a waste facility (as a mining waste operation)
- flaring of waste gas using a flare which has the capacity to incinerate over 10 tonnes a day (as an installation)
- a water discharge activity
- a groundwater activity, such as an indirect discharge of pollutants as part of high pressure high volume hydraulic fracturing
- waste being managed that meets the thresholds for radioactivity set out in the 2016 Regulations (as a radioactive substances activity)

We now consider that the same environmental permits are required for existing onshore oil and/or gas facilities, in addition to the permit required for crude oil unloading, handling or storage, or treatment. This permit variation and consolidation brings these permits in line with the new regulations and approach for permits issued since 2013.

Installation Activities

The Installation activities (oil storage, treatment and handling) have not changed at the site. The activity reference has been amended to align with the legislative change as a result of the updated Environmental Permitting (England and Wales) Regulations 2016. Limits on activities have been specified in this permit to align with our current permit wording under the standard rules permit (SR2015 No.2) for oil storage.

Mining Waste Activities

This permit is subject to the Mining Waste Directive and covers the management of extractive waste generated during oil and gas production as mining waste activities under Activity A7. This variation does not permit any hydraulic fracturing. We have specified any limits in Schedule 1 of the permit under Table S1.1, activity A7. The mining waste activities include the drilling and completion of 4 sidetrack wells which were subject to the permit variations on 17/08/15 and 13/04/18 as described in the waste management plan submitted on 21/03/18 which we have retained as a operating technique under this permit. The operator has also confirmed that sidetrack STK 27 from the water injector STK19i at Hill Farm has been abandoned, and therefore does not form part of this permit. These variations previously also included any losses of water based muds used in the drilling which were not recovered as separate groundwater activities. As the drilling of these sidetracks is now complete and we have received an updated hydrogeological risk assessment as part of this application, we have removed these groundwater activities under this variation. The mining waste activities permitted under this permit do not include any future drilling of sidetracks or new wells, which would require a new permit variation. It also doesn't cover future abandonment or decommissioning of wells which the operator has chosen not to apply for under this variation despite our pre-application discussions, and instead will apply for as a separate variation at site closure.

We have also added a non-hazardous mining waste facility for the storage of produced water in two tanks at Folly Farm prior to reinjection for disposal only. We are satisfied based on the material data safety sheet data supplied by the operator (combined sample from Welton representing provided 18/08/2017, and MSDS sheet provided in response to permit questions by email on 04/06/2019 and part of revised waste management plan) that the produced water is non hazardous in nature, and therefore have defined the facility accordingly. We have also clarified with the operator under the revised waste management plan that any removed oily sludge, which is hazardous in nature is removed off site as part of routine clean out /maintenance activities. As this sludge is not stored on site there is no designated area and therefore no hazardous waste facility or category A description required for this waste, and as a result there are no additional financial obligations under the Mining Waste Directive.

The operator may also undertake workovers and near wellbore treatments during the lifetime of hydrocarbon production from the well, as part of routine maintenance activities. These will include hot oil washing, wax dissolver treatment and acid wash, which do not pose a risk to groundwater. The purpose of hot oil washing is to remove the build-up of paraffin precipitates. The process involves circulating heated oil down the well, to the production tubing above the perforations and is circulated back to the surface. Paraffin precipitates dissolved in the hot oil at the surface are passed through a free phase separator and directed to on-site storage tanks. The hot oil wash does not have any significant contact with the reservoir formation and does not pose a risk to groundwater. We have considered the hot oil wash treatment as described in the waste management plan and concluded it meets the groundwater activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

Wax dissolver is used to remove waxes and asphaltines that become deposited on the tubulars and rod strings that are not dissolved by either hot water or oil. The chemical does not have significant contact with the reservoir and circulated fluid returns to the oil phase. We have considered the wax dissolver treatment as

described in the waste management plan and concluded it meets the groundwater activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

The purpose of the acid wash is to remove produced water scales from production tubing which have been blocked during the production of hydrocarbons. 15% Hydrochloric acid with water is circulated down the well and across the perforated sections of the well. Acid may then be selectively pushed into the near wellbore area. The acid reacts with the minerals in the formation and all spent acid is recovered to the surface. We have considered the acid wash treatment as described in the waste management plan and concluded that it meets the ground activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

We have imposed an improvement programme for gas management at the site in line with the sector guidance under ICs 2, 5 and 6. We are satisfied that these measures to minimise the risk of air emissions, together with condition 3.1.1 provide acceptable controls.

Groundwater Activities

A groundwater activity, in general terms, is defined in Schedule 22 of the 2016 Regulations as meaning the discharge of a pollutant that results in the direct input of that pollutant to groundwater, or a discharge of a pollutant in circumstances that might lead to an indirect input of that pollutant to groundwater or any other discharge or activity that might lead to a direct or indirect input of a pollutant to groundwater.

There are a number of groundwater activities at this site. There are two re-injection boreholes which re-inject produced water resulting from the extraction of hydrocarbons into the Great Oolite Formation for production support. There is also one injection borehole which discharges produced water into the Portland Sand Formation for disposal.

These discharges are a direct discharge to groundwater which is prohibited under by the Water Framework Directive except under certain exemptions. One of these exemptions is:

The injection of water containing substances resulting from the operations for exploration and extraction of hydrocarbons or mining activities, and injection of water for technical reasons, into geological formations from which hydrocarbons or other substances have been extracted or into geological formations which for natural reasons are permanently unsuitable for other purposes, provided that the injection does not contain substances other than those resulting from the above operations.

We are satisfied that these activities meet the above exemption. A permit can only be granted provided it does not compromise the achievement of any of the environmental objectives relating to groundwater in Article 4 of the Water Framework Directive. We have given detailed consideration to the proposal we are satisfied that none of the relevant environmental objectives set out in Article 4 of the Water Framework Directive will be compromised.

We have reviewed the Hydrogeological Risk Assessment (HRA) submitted with the supporting documents against our information and conceptual understanding of the location. We are satisfied that the potential risks to groundwater have been identified and addressed through mitigation measures and controls specified in this permit. This includes a requirement for a revised groundwater monitoring plan to be carried out under IC3 to ensure that the risk of pollution from re-injection of produced water continues to be assessed throughout the lifetime of the permit. We are also satisfied that all chemicals used are either intrinsic to the operations or meet the requirements for a de minimis exclusion and are therefore not separate groundwater activities in their own right. These include biocides and corrosion inhibitors used as detailed in the HRA.

As outlined further down in this document, the Portland Sand Formation is classed as permanently unsuitable at this location in accordance with the Environment Agency's Groundwater protection technical guidance. We are satisfied that the discharge of produced water resulting from the extraction of

hydrocarbons into the Portland Sand Formation will not compromise any Water Framework Directive objectives for this groundwater bearing formation.

Permanently Unsuitable - Portland Sand Formation

To satisfy the requirement of 'permanently unsuitable' referred to in the first indent of Article 11.3.(j) of the Water Framework Directive, the produced water needs to be re-injected either into the formation from which it was extracted another from which hydrocarbon has been extracted, or injected into a geological formation, which for natural reasons, is permanently unsuitable for other purposes.

As part of the application, the operator has provided technical information to support a Permanently Unsuitable assessment for the Portland Sand Formation for a 1 kilometre (km) radius around injection well WD2. The operator discharges produced water from the extraction of hydrocarbons from the Great Oolite reservoir into the Portland Sand Formation between 587m and 621 metres (m) below ground level through injection well WD2. The Portland Sand is approximately 33m thick. At this site the Portland Sand is overlain by 75m of claystone marl with some limestone, gypsum and anhydrite and 178m of Wealden Beds including claystone with some siltstone and sandstone horizons.

Our conceptual understanding is that groundwater in the Portland Sand is very mineralised and not a quality likely to be used in the future as a source of drinking water supply. Groundwater in the Portland Sand within a 1km radius of injection well WD2 is considered permanently unsuitable due to the following factors taken into account regarding the Portland Sand Formation within 10 km distance of the discharge location. These are outlined in our Groundwater Protection Technical Guidance. In summary within 10km distance of the site:

- the Portland Sand is not currently exploited for ground resources, aquifer storage and recovery, geothermal energy or ground source heating and cooling. Groundwater in the Portland Sand is expected to have a similar chemical composition to that in the discharge. Therefore the discharge should not have an adverse impact on the existing or potential use of the Portland Sand for ground resources, aquifer storage and recovery, geothermal energy and ground source heating and cooling.
- groundwater in the Portland Sand is not abstracted due to the isolated nature of the formation at this location. The groundwater is highly saline, contains natural gas and traces of oil. Therefore the natural quality of the groundwater is not suitable for potable, agricultural or industrial use irrespective of treatment
- groundwater in the Portland Sand Formation does not support and is not capable of supporting spring flow, watercourse or a wetland and their ecosystems

There are no groundwater quality sample results for the Portland Sand from the Stockbridge oilfield. Historic groundwater quality data for the Portland Sand has been obtained from the construction of the Winchester 1 well approximately 10km from the site (at a similar depth). The data shows that groundwater is highly saline. Site specific data from logging during the drilling of Stockbridge wells also shows the salinity at the site to be consistent with Godley Bridge (approximately 31 miles east of Stockbridge) and natural gas is present in the Portland Sand.

Therefore it can be inferred from these results that at the discharge location WD2 hydrocarbons are naturally present in groundwater, the groundwater is also naturally saline and is therefore of poor quality.

Groundwater quality samples were obtained for Great Oolite reservoir at the Stockbridge site between December 2013 and January 2015. The results show that groundwater in the Great Oolite reservoir is highly saline and of extremely low quality. We are satisfied that the injection of produced water into the Portland Sand Formation via well WD2 will not cause a discernible change in groundwater quality within 1km of the discharge location.

Conceptual Site Model

During the review of the operator's permanently unsuitable assessment, we requested additional information on the lateral and vertical extent of any faults within the receiving groundwater discharge area and an assessment of the risk of the potential for faults to act as a preferential pathway for fluid to move along and up any faults.

A minor fault was identified approximately 270m west of injection well WD2 from seismic survey data and interpretation. The fault has a north west – south east trend and extends vertically over approximately 700 - 800 metres from the Great Oolite reservoir through the Portland Sand Formation and terminates in the Wadhurst Clay. The Wadhurst Clay is present at approximately 400 m true vertical depth below ground level which is significantly below the Upper Greensand and Chalk Principal Aquifers.

The throw/ offset of the fault increases with depth and has a maximum throw of 30m near the Great Oolite oil reservoir (the producing reservoir at this site). The throw of fault is a maximum of 12m in the Portland Sand Formation. This results in a sandstone to sandstone contact across the fault and therefore groundwater can flow across the fault away from injection well WD2.

The Portland Sand is overlain by approximately 300m of predominantly impermeable strata including anhydrite with some limestone, very fine claystone, mudstone and siltstone with some minor horizons of fine grained sandstone. Any vertical permeability associated with the fault is likely to be limited considering the impermeable nature of the overlying strata and the fault tailing out in the Wadhurst Clay.

Seismic survey data also shows the fault 270m west of injection well WD2 to intersect one of the main east – west trending Stockbridge field faults approximately 2km north west of WD2. Further review of the data shows that this main east – west trending fault decreases in throw upwards and tips out in the overlying impermeable strata below the Wadhurst Clay. Considering the presence of overlying impermeable strata and the fault tailing out in this strata below the Wadhurst Clay, we are satisfied that there is low risk of produced water migrating along and up the main Stockbridge field fault and discharging into aquifers closer to the surface.

The operator has modelled the predicted extent of the produced water and pressure change in the Portland Sand formation based on a historical average injection rate of 160m³/day and a maximum injection rate of 300 m³/day. For an average injection rate of 160m³/day, the estimated radius of the pressure change is approximately 500m. The increase in average formation pressure within the Portland Sand will be less than 3% for the average injection rate and 6% for the maximum injection rate.

The Environment Agency is satisfied that there is a low risk of seismic reactivation along faults from the discharge of produced water via WD2 into the Portland Sand Formation at the proposed rates and injection pressure.

There is no evidence of any adverse impacts from injection of produced water into the Portland Sand Formation to date which has been undertaken since 1996. The presence of approximately 300m thick low permeability strata overlying the Portland Sand will limit any vertical permeability of the minor fault, the main Stockbridge field fault and the potential for any vertical movement of produced water into the Lower Greensand, Upper Greensand and Chalk Principal Aquifers.

We have included in the following limits and conditions in the permit to mitigate against the potential pollution of groundwater from fault reactivation:

We have included in the following limits and conditions in the permit to mitigate against the potential pollution of groundwater from fault reactivation:

- The operator can only discharge up to a maximum of 191 m³/day of produced water into the Portland Sand Formation. This is also limited to a rate of 2.2 litres per second. The operator is required to monitor the rate of discharge and report this to us every six months.

- We have limited the injection pressure (tubing head pressure) to a maximum of 690 psia. This is the injection pressure that well WD2 has been operated at previously and operating at this pressure will ensure that the formation pressure is maintained below the fracture pressure of the formation. The permit includes a requirement for the injection pressure to be continuously monitored and reported to us every 6 months.
- The permit includes a requirement for the operator to report annually a summary of the well integrity for injection well WD2 and re-injection wells STK16Yi and STK19i which re-inject produced water into the Great Oolite reservoir for production support.

Future injection wells

As part of their application, the applicant applied to inject produced water into the Portland Sand Formation using four wells which had previously been used as production wells and converting these to injection wells. There was insufficient information in the Hydrogeological Risk Assessment to assess the risk of converting these wells from production wells to re-injection wells. We have therefore not included these wells as permitted discharge points under this permit variation. Should the applicant wish to convert these wells in future, a permit variation application would be required. This application would need to be supported with a satisfactory Hydrogeological Risk Assessment and technical information to demonstrate any further areas of the Portland Sand Formation are permanently unsuitable for other purposes.

Discharge of site surface water to ground

The permit includes three groundwater activities for the discharges of site surface water to ground via soakaways at each site. There is one soakaway present at Larkwhistle Farm, two soakaways at Folly Farm and two soakaways at Hill Farm. The discharge of site surface water to ground is an indirect discharge to groundwater and therefore a permitted groundwater activity in accordance with Schedule 22 to the Environmental Permitting Regulations 2016.

The soakaways have not been in service for several years and do not currently discharge site surface water to ground. Therefore we have included pre-operational condition 1 (PO 01) in Table S1.4 of the permit which requires the operator to provide an updated groundwater risk assessment that outlines the soakaway construction details, method of treatment of the site surface water before discharge and any proposals to re-instate the soakaways to ensure that groundwater will be protected before the soakaways are used in future to discharge site surface water. Discharge parameter limits for volume, chloride, pH, sodium and total petroleum hydrocarbons are included in Table S3.2 of the permit to assess any potential impact to groundwater in the underlying Chalk Principal aquifer. Pre-operational condition 1 also requires the operator to review these limits as part of the groundwater risk assessment and propose alternative limits should the conclusions of the groundwater risk assessment differ from those limits in Table S3.2.

Site surface water at Larkwhistle Farm and Hill Farm is currently collected and used to supplement the produced water used for reinjection into the Great Oolite reservoir. Site surface water at Folly Farm is currently collected and discharged with produced water via well WD2i into the Portland Sand Formation. This practice will be reviewed as part of Improvement Condition 7 because this is not currently in accordance with the Environment Agency's Onshore oil and gas sector guidance. Section 11.1 of our Onshore oil and gas sector guidance states that site surface water run-off must not be mixed with produced water for disposal purposes. Therefore the operator will be required to review their site surface water management and identify and implement alternative arrangements for their site surface water management practices at Folly Farm to ensure site surface water is not discharged into the Portland Sand Formation for disposal.

As part of Improvement Condition 7 the operator will also review the interim discharge parameter limits in the permit for the soakaway discharges to clarify how the environment is being protected. The operator shall monitor the quality of the soakaway discharge for a suite of parameters that could be present in the discharge for a duration and frequency approved in writing by the Environment Agency. The operator will

use the data collected to carry out a numerical risk assessment and derive site specific quality limits for the discharge that are protective of the groundwater environment and outline how these will be implemented in the Surface Water Management Plan.

We have also included Improvement Condition 3 which requires the operator to review their groundwater monitoring proposals and submit an updated groundwater monitoring plan to help demonstrate that the monitoring measures are appropriate and satisfactory precautions are in place to prevent pollution of groundwater from the groundwater activities undertaken at the site.

Previous Groundwater Activities

The previous variations in 17/08/15 and 13/04/18 authorised two groundwater activities for potential losses of water based mud to the Great Oolite Formation during drilling of sidetrack wells at Hill Farm, Larkwhistle Farm and Folly Farm. As this drilling is now complete we are satisfied that these groundwater activities are no longer required and have been removed under this variation. The drilling activities, process and chemicals used are all described in the waste management plan submitted in January 2018 referenced STOCK-EPA-005, in connection with variation YP3537YK/V002) remains an operational technique under Table S1.2 of the permit for future compliance purposes.

Gap Analysis

We have assessed the Operators gap analysis response which was received on 19/07/2017. We have included a number of additional Improvement conditions in response to this. In particular we have specified some improvements to the operator's management system under IC4 to review:

- i) The procedure for identifying bund fill levels, e.g. high level alarm on unmanned sites
- ii) The procedures for testing the impermeable membrane and subsequent remediation measures if required.
- iii) The monitoring procedures and testing in place to confirm the integrity of the re-injection wells for the lifetime of those wells, monitoring frequency, remediation measures (and reporting procedures) should the integrity monitoring results indicate that a well integrity failure has potentially occurred.

Schedule 5 responses

We requested additional information to be provided under a schedule 5 notice issued on 18/10/2017 and 04/10/2018. We also raised some additional questions by email on 13/12/2018 on the localised faulting present as part of the permanently unsuitable groundwater assessment for the disposal reinjection well WD2. We received a response to this email on 19/03/19. We are satisfied that the notices have been complied with and additional information provided in order that the permit can be determined. Any outstanding issues have been included as part of our improvement programme under table S1.3 and pre-operational conditions under table S1.4 under the permit.

Improvement conditions

We have specified the improvement conditions in the table below to bring this permit in line with our sector guidance. The Existing ICs from the previous permit, which are reproduced below, have been superseded by these new ICs and have therefore been removed under this variation. IC16 has been replaced by IC3, IC15 has been superseded by IC7 and IC 13 and 14 have also been removed as a result.

	writing to the Agency.	
IC 13	<p>The operator shall review the current water re-injection practices employed at the Folly Farm Site, having regards to but not limited to :-</p> <ul style="list-style-type: none"> • The indicative BAT requirements of section 3.2 of EPR 1.02 and sections 2.2.3 & 3.2.2 of IPPC S1.02 ; • The results of the hydrogeological risk assessment completed under IC14; • The results of the sampling and analysis programme under IC14. <p>The results and conclusions of the review shall be submitted in writing to the Agency for approval, and identified improvements and recommendations shall be implemented to a timetable agreed with the Agency.</p>	20/08/2015
IC 14	<p>The operator shall carry out a 12 month programme of sampling and analysis of produced water prior to re-injection at the Folly Farm site in order to determine the quality of the re-injected water. During the programme the operator shall conduct a Hydrogeological Risk Assessment (HRA) of the re-injection process. A report of the results of the sampling and analysis programme and the HRA shall be submitted to the Environment Agency.</p> <p>The report shall also include proposed limit values for the produced water.</p>	20/08/2015

IC15	<p>The Operator shall provide a written report reviewing the operation of the soakaways and interceptors at Larkwhistle Farm, Hill Farm and Folly Farm Sites. The Operator shall have regard to section 3 Emissions and monitoring of EPR 1.02. The conclusions and recommendations from the review shall be agreed with the Agency. These must be implemented to a timetable agreed with the Agency.</p>	<p>Within 6 months of issue of variation EPR/GP3731CK/ V002</p>
IC 16	<p>The operator shall submit in writing for agreement by the Environment Agency monitoring plans for all the groundwater monitoring boreholes and for the produced water which will be re-injected at Larkwhistle Farm, Hill Farm and Folly Farm sites. The plans should include:-</p> <ul style="list-style-type: none"> • Analysis suite to be used 	Complete

Permit number
EPR/GP3731CK

	<ul style="list-style-type: none"> • Frequency of monitoring • Methods to be used • Monitoring procedures 	
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Other permit applications issued during this permit determination

This occurred due to the length of time to determine this application and the need of the operator to make some interim changes which could not be included as part of this variation. The permit was transferred by separate application from Island Gas Limited to IGas Energy Development Limited on 16/10/17 during this permit determination process. As a result the permit number has changed from GP3731CK to YP3537YK. A separate variation was also applied for and issued on 13/04/18 prior to this permit determination for drilling of the sidetrack of the existing well STK19.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has been made in respect of the information provided on 19/03/19.
Identifying confidential information	We have excluded part of this submission containing detailed seismic information as commercially confidential from the public register. The decision was taken in accordance with our guidance on confidentiality.
Consultation	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website because of the high levels of public interest in the onshore Oil and Gas Sector. The application itself is NOT high public interest. We consulted the following organisations: <ul style="list-style-type: none"> • Local Authority, Environmental Protection • Food Standards Agency • Health and Safety Executive • Mineral Planning Authority The comments and our responses are summarised in the consultation section .
Operator	
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits. The permit was transferred by separate application from Island Gas Limited to IGas Energy Development Limited on 16/10/17 during this permit determination process. As a result the permit number has changed from GP3731CK to YP3537YK. We are satisfied that despite this transfer, the original operator who applied for this variation is still in control of this facility.
The facility	
The regulated facility	We considered the extent and nature of the facilities at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits. The extent of the facilities are defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.
The site	
Extent of the site of the facility	The operator has provided plans which we consider are satisfactory, showing the extent of the site of the facility including emission and discharge points. The plans are included in the permit.

Aspect considered	Decision
Site condition report	<p>The operator has provided a description of the condition of the site. We have assessed the site condition report and concluded that it will need updating in order to comply with requirements of Article 22 of the Industrial Emissions Directive. We have therefore imposed an improvement condition IC8 requiring the operator to review and update their site condition report include at least the following:</p> <ul style="list-style-type: none"> i) consideration of oil storage areas including oil storage vessels, bunds, loading and unloading areas and other potential sources of contamination as shown in the site location plan. ii) reference to any historical spillages, the chemicals involved and locations, baseline soil sample results and groundwater data. We have included an improvement condition (IC8) in the permit to review the site condition report to ensure Article 22 of the Industrial Emissions Directive is complied with. <p>The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.</p>
Waste management plan	<p>The operator has provided a waste management plan which we consider is satisfactory.</p>
Biodiversity, heritage, landscape and nature conservation	<p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. These include River Itchen (SAC), River Test (SSSI) (lowland river and stream) and Brockley Warren (SSSI) (calcareous grassland) identified by the easimap screening report.</p> <p>We have not consulted Natural England on the application. The decision was taken in accordance with our guidance. The habitat assessment forms have been completed for information and filed on EDRM.</p> <p>Emissions to air: This is an existing site which has been permitted since 2007 with no increases in air emissions as a result of this variation and consolidation. The H1 submitted with this application from 2009 is still valid.</p> <p>The emissions to air are from the oil storage tanks only on site. There are no emissions to surface water. There are 3 reinjection wells to groundwater and soakways for site surface runoff at each wellsite, but this water is currently collected for reinjection and controls are in the permit via IC7 and PO 01 along with monitoring requirements in schedule 3 to ensure that there is no impact on receiving groundwater.</p> <p>The River Itchen (SAC) is located approximately 4km from the wellsites, River Test (SSSI) (lowland river and stream) is approximately 650m and Brockley Warren (SSSI) (calcareous grassland). is approximately 1,500m away. No deterioration in this SSSI has been noted as a result of air quality impacts. The H1 submitted with the application screens out all air emissions as insignificant. In addition as part of this variation and consolidation monitoring limits have been set on the point source emission points to air (oil storage tanks) to minimise any impact, and a review of gas management has been requested though IC5 to further reduce any future air impacts if required.</p> <p>Emissions to water: There are no surface water discharges. All 5 discharges of site surface water to ground are subject to prior approval via IC7 and PO 01 in the permit. The surface water is currently collected and added to the produced water used for reinjection. These are site surface discharges to ground from rainfall runoff from non process areas of the site via an oil interceptor. We have included conditions to monitor these discharges, but as are rainfall dependant these are considered to be low risk and as a result will have no effect on the SAC or SSSIs identified above.</p>
Environmental risk assessment	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>There will be no increase in emissions as a result of this variation, and consequently no increase in environmental risk.</p>

Aspect considered	Decision
Operating techniques	
<p>Operating techniques Water Quality</p>	<p>We have reviewed the Operators Hydrogeological Risk Assessment and operating techniques proposed by the operator and compared these with the relevant technical guidance and we consider these to be appropriate for the facility.</p> <p>We are satisfied that the risks to groundwater have adequately been assessed and the proposed activities are not likely to have an adverse impact on the hydrological and hydrogeological features in this area.</p> <p>To the extent that it might lead to a discharge of pollutants to groundwater (a “groundwater activity” under the EPA 2016), the Permit is subject to the requirements of Schedule 22, which delivers the requirements of EU Directives relating to pollution of groundwater. The Permit will require the taking of all necessary measures to prevent the input of any hazardous substances to groundwater, and to limit the input of non- hazardous pollutants into groundwater so as to ensure such pollutants do not cause pollution, and satisfy the requirements of paragraph 6 of Schedule 22 and Article 6(1) Groundwater Daughter Directive. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p> <p>In addition we have imposed condition 3.5.1 which requires the operator to monitor groundwater and surface water quality.</p> <p>IC1 requires the operator to review their site containment in order to demonstrate there is no pollution risk to surface and groundwater.</p> <p>IC3 requires the operator to review groundwater monitoring to monitor reinjection activities on site.</p> <p>IC4 requires the operator to ensure the procedures for well integrity are maintained during for all reinjection wells.</p> <p>IC7 requires the operator review their surface water management and implement any agreed changes.</p> <p>PO 01 requires the operator to provide further details prior to discharging any site surface runoff to soakaway to prevent any potential pollution pathways to groundwater</p>
<p>General operating techniques</p>	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit. This includes the requirement for the Operator to provide a waste management plan and the information required within this. The waste management plan, including associated documents, has been assessed in accordance with these requirements and is approved subject to conditions. Condition 2.3.1 ensures that the operations are limited to those described in the WMP and in table S1.2. It also ensures that the Operator follows the techniques set out and that any deviation will require our written approval. Any significant changes will require a formal variation of the permit. Where a condition imposes a specific requirement that will take precedence over anything in the plan.</p> <p>In addition we have specified additional improvement conditions as part of the permit review to ensure these operations continue to meet the requirements of our Onshore Oil and Gas Sector Guidance, August 2016.</p>
<p>Operating techniques for emissions that screen out as insignificant</p>	<p>Air emissions of Methane, ethane, propane, butane, hydrogen sulphide, carbon monoxide, nitrogen dioxide and sulphur dioxide have been screened out as insignificant in the operators H1 assessment provided with the application. To ensure that gas management and utilisation on site is BAT in accordance with our sector guidance we have included IC5, 2, 6 and 7 to review gas management, leak detection and emissions and vapour recovery during unloading in order to agree that the applicant’s proposed techniques are BAT for the installation.</p> <p>We consider that the emission limits included in the installation permit along with the ICs above reflect the BAT for the sector.</p>

Aspect considered	Decision
Odour management	<p>We have considered potential odour emissions from the activity during our determination. We do not consider that the activity will give rise to significant levels of odour. The use of the proposed ground flare, with automatic control of combustion temperature provides satisfactory mechanisms to prevent odour emissions. Condition 3.3.1 in the permit requires that emissions from the activities shall be free from odour at levels likely to cause pollution outside the site.</p> <p>We are satisfied that appropriate measures will be in place to manage odour. However, we have included condition 3.3.2 in the permit. This condition enables us to require the Operator to submit a specific odour management plan, should odour become a problem. If a plan be required in the future, once we have assessed this plan as suitable, it will form part of the permit and the Operator must carry out the activity in accordance with the approved techniques.</p>
Noise management	<p>We have considered emissions from noise and vibration during our determination. Condition 3.4.1 in the permit requires that emissions from the activities shall be free of noise and vibration at levels likely to cause pollution outside the site.</p> <p>We have included condition 3.4.2 in the permit. This condition enables us to require the Operator to submit a specific noise and vibration management plan, should noise and vibration become a problem. If a plan be required in the future, once we have assessed this plan as suitable, it will form part of the permit and the Operator must carry out the activity in accordance with the approved techniques.</p>
Permit conditions	
Use of conditions other than those from the template	Based on the information in the application, we consider that we do not need to impose conditions other than those in our permit template.
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. We have also updated permit conditions to make reference to the most modern legislation. The conditions will provide the same level of protection as those in the previous permit(s).
Changes to the permit conditions due to an Environment Agency initiated variation	<p>We have varied the permit as stated in the variation notice.</p> <p>This variation is required as the Environment Agency has a duty, under the Environmental Permitting (England and Wales) Regulations 2016, regulation 34(1), to periodically review permits. As a result of that review we have identified a number of necessary changes we must make to your permit to reflect current legislation and best practice. These changes principally relate to the improvement programme specified in condition 2.4 of the permit</p>
Pre-operational conditions	Based on the information in the application, we consider that we do need to impose pre-operational conditions prior to use of the soakaways under PO 01.
Improvement programme	<p>Based on the information on the application, we consider that we need to impose an improvement programme.</p> <p>We have imposed an improvement programme to ensure that the standards of operation for the sector are consistent and reflect those currently required by newly permitted sites (since 2013) and meet the requirements of our Onshore Oil and Gas Sector Guidance, August 2016.</p> <p>The following ICs have included in this permit to address the gap analysis responses we received from operator to demonstrate compliance with our Onshore Oil and Gas Sector Guidance, August 2016. This is explained in our key issues above.</p> <p>IC1 - Secondary and Tertiary Containment Review</p> <p>Improvement condition IC1 is necessary to ensure that secondary and tertiary containment systems meet the standards required of a new oil and gas site. This will reduce the likelihood of any uncontrolled polluting discharges to the environment.</p> <p>The permit also previously required annual hydraulic testing of the well cellars under IC7. This improvement condition was previously signed off on 20/11/2008, so we have included it under the process monitoring requirements in Table 3.6, but it will also form part of this review of the site infrastructure under this IC.</p>

Aspect considered	Decision
	<p>IC2 - Leak Detection and Repair Plan</p> <p>Improvement condition IC2 is necessary because a leak detection and repair plan is needed to manage fugitive VOC emissions from potential leak points such as seals, flanges, pumps and valves. This standard technique is a method for identifying and prioritising potential sources of leaks, developing a leak detection and repair programme using the monitoring standard EN 15446 including assessing reductions in emissions resulting from the programme and estimation/calculation of any residual emissions. The EN 15446 method is described in the Refineries BRef (2015) as an available method for carrying out monitoring of fugitive emissions. Alternative but equivalent methods can be proposed.</p> <p>IC3 - Groundwater Monitoring Plan</p> <p>Improvement condition IC3 is necessary in order to review groundwater monitoring at the site to ensure the groundwater monitoring plan meets our requirements.</p> <p>Groundwater Monitoring is required at the site because the operator is undertaking a groundwater activities for reinjection of produced water and discharge of site surface water to ground via interceptor.</p> <p>We have included Improvement Condition IC3 which requires the operator to submit for written approval a groundwater plan. The groundwater monitoring plan, once approved, shall be incorporated into the permit as an operating technique.</p> <p>Groundwater Monitoring is necessary to help determine whether the reinjection activities are affecting the quality of groundwater and whether satisfactory measures are being undertaken to prevent groundwater pollution. Groundwater monitoring is required for the purposes of requisite surveillance in accordance with the Environmental Permitting Regulations 2016. The submission of a groundwater monitoring plan will ensure that groundwater monitoring is based on the site conceptual model and hydrogeological risk assessment.</p> <p>IC4 - Environmental Management System Review</p> <p>Improvement condition IC4 is necessary as based on the information submitted with the application we have identified a number of procedures that do not appear to be in place</p> <p>This improvement condition requires the relevant procedures to be written into the Operator's management system, and to be adhered to. The management system will be subject to usual compliance audit in future</p> <p>The specific management requirements include: bund filling procedures, testing of the membrane and monitoring to confirm integrity of the re-injection wells.</p> <p>IC5 - Gas management</p> <p>Improvement condition IC5 is necessary as the operator does not appear currently to be applying appropriate measures for the management of waste gas arising from their production of hydrocarbons.</p> <p>Gas management is required as the impact of releasing large quantities of uncombusted hydrocarbons leads to a significant environmental impact which can be readily mitigated using available techniques.</p> <p>We have included improvement condition 5 which requires the operator to submit for written approval a plan identifying their identified method for reducing the impact of gas emissions to atmosphere.</p> <p>Gas management is necessary to reduce the environmental and human health impacts of emitting natural gas directly to atmosphere.</p>

Aspect considered	Decision
	<p>IC6 - Air emissions monitoring</p> <p>Improvement condition IC6 is necessary as the site features emissions to air with the potential to cause pollution. We have applied improvement condition 6 to require the operator to undertake appropriate emissions monitoring from each of the emission points on the site to understand the current performance of the process/equipment which gives rise to the emission. We will use the results of this monitoring to determine whether the operator's processes and equipment minimises the emission to air to as low as reasonably achievable in line with best available techniques. Where appropriate, we will use these monitoring results to set appropriate assessment levels or compliance limits for the operator to comply with in future.</p> <p>We consider this condition necessary as although the volume of each individual emission is comparatively small, the quality of combustion employed in each case can significantly alter the levels of various pollutants ultimately present within the emission. By requiring ongoing emissions monitoring, this condition will ensure that the operator achieves, and then continues to operate their processes and equipment to an acceptable standard, and commensurately reduces their environmental impact to as low a level as is reasonably practical.</p> <p>IC7 - Surface water management</p> <p>Improvement condition IC7 is required to deal with longer term surface water management and future potential use of soakaways for site surface water runoff. The operator will be required to review and update their site surface water management practices at Folly Farm to ensure that site surface water is not discharged for disposal in future. The condition also requires the review of the quality of the site surface water being discharged to soakway due to the sensitivity of the receiving groundwater at this location.</p> <p>The development of a plan to demonstrate how rainfall is managed to ensure the environment is not compromised, will clarify how the requirements are being met and how the environment is being protected.</p> <p>IC8 - Site Condition Report Review</p> <p>Improvement Condition IC8 is necessary because the operator is required to produce a Site Condition Report where there is a possibility of soil and groundwater contamination from activities that involve the use, production or release of a relevant hazardous substance, as defined in the Industrial Emissions Directive.</p> <p>The Operator has provided a Site Condition Report with the application, but this does not contain baseline data to confirm the current state of any soil and/or groundwater contamination, or confirmed that existing soil and groundwater data for the site enables a baseline to be defined for the site.</p> <p>Vapour recovery</p> <p>There is no sector standard IC required for vapour recovery as the operator already has a line in place for back venting to the storage tanks as confirmed in their permit comments response on 04/06/2019. This is regulated under activity A1 under table S1.1 of the permit.</p> <p>Pre-operational conditions</p> <p>Whilst there are a number of soakaways on each site for site surface runoff, the operator currently collects all surface water, which is used to supplement the produced water. This is reinjected for production support and is discharged at Folly Farm into the Portland Sand Formation. As a review of surface water management at the site in future or as a result of IC7 the operator may decide to reuse these site soakaways in future. We have included PO 01 under this variation in order that the operator provides further information on the soakaways to us prior to any planned future use in order to demonstrate there will be no groundwater risks/impacts as a result of using them in future.</p>

Aspect considered	Decision
Emission limits	<p>We have considered emissions to air during the determination of the application. Fugitive emissions associated with the proposed activities will be at insignificant levels which are unlikely to cause negative impact on nearby receptors.</p> <p>The Operator has provided environmental risk assessments and consideration in the WMP for the management of waste gas and we have found these to be satisfactory.</p> <p>ELVs equivalent parameters have been set for the following substances in Schedule 3 of the permit. For air emissions from the storage tanks.</p> <p>Gas vented (calculation method)</p> <p>Hydrogen Sulphide</p> <p>For reinjection of produced water to groundwater limits have been set for:</p> <p>Maximum daily discharge volume</p> <p>Maximum rate of discharge</p> <p>For surface water discharges to ground via soakaway Interim limits have been set based on drinking water standards. This will be reviewed by the operator under IC7:</p> <p>Maximum daily discharge volume</p> <p>Maximum rate of discharge</p> <p>Chloride</p> <p>pH</p> <p>Sodium</p> <p>Total Petroleum Hydrocarbons</p>
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. Condition 3.5 of the permit requires the Operator to monitor emissions to air from the storage tank vents.</p> <p>We also require monitoring of rate and volume of produced water reinjected along with concentrations and volumes of chemicals added to the produced water prior to reinjection. The operator will also be required to monitor the injection pressure for groundwater activity A10.</p> <p>The soakaway discharges are required to be monitored for maximum daily discharge volume, maximum rate of discharge, chloride, pH, sodium and total petroleum hydrocarbons. In addition following approval of the groundwater monitoring and the surface water management plan under IC3, IC7, and PO 01 we may also require additional groundwater and surface water monitoring under S3.5 under the permit.</p> <p>The Operator will keep records of the data collected, which must be submitted to the Environment Agency on a regular basis.</p> <p>We made these decisions in accordance with the requirements of our Onshore Oil and Gas Sector Guidance, August 2016 and the Groundwater Directive and to baseline report required under the Industrial Emissions Directive.</p> <p>Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate as required under 3.5.3 of the permit.</p>
Reporting	<p>We have specified reporting in the permit.</p> <p>The reports will enable information on trends to be assessed and interventions to be carried out when required.</p> <p>We made these decisions in accordance with the requirements of our Onshore Oil and Gas Sector Guidance, August 2016 and the Groundwater Directive and to baseline report required under the Industrial Emissions Directive.</p>
Operator competence	
Management system	<p>There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.</p> <p>The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.</p>

Aspect considered	Decision
Financial competence	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.
Financial provision	We are satisfied that the waste from the site has properly been characterised as a non-hazardous mining waste facility for extractive waste. By virtue of paragraph 9(3) of Schedule 20 to the Environmental Permitting (England and Wales) Regulations 2016 the requirements mentioned in Article 2(3) of the MWD are waived. These requirements don't include the need for a financial guarantee for non-hazardous waste, unless deposited in a Category A facility.
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>
Further Legislation	
Schedule 22 to the EPR 2016 – Water Framework and Groundwater Daughter Directives	To the extent that it might lead to a discharge of pollutants to groundwater (a “groundwater activity” under the EPR 2016), the Permit is subject to the requirements of Schedule 22, which delivers the requirements of EU Directives relating to pollution of groundwater. The Permit will require the taking of all necessary measures to prevent the input of any hazardous substances to groundwater, and to limit the input of non- hazardous pollutants into groundwater so as to ensure such pollutants do not cause pollution, and satisfy the requirements of paragraph 6 of Schedule 22 and Article 6(1) Groundwater Daughter Directive.
Water Environment (Water Framework Directive) (England and Wales) Regulations 2003	Consideration has been given to whether any additional requirements should be imposed in terms of the Environment Agency’s duty under regulation 3 to secure compliance with the requirements of the Water Framework Directive through (inter alia) environmental permits, but we consider that existing conditions are sufficient in this regard, and no other appropriate requirements have been identified.

Consultation

The application was publicised on the GOV.UK website because of the high levels of public interest in the onshore Oil and Gas Sector. The application itself is NOT high public interest.

We consulted the following organisations:

- Local Authority, Environmental Protection, Winchester
- Food Standards Agency
- Health and Safety Executive
- Mineral Planning Authority, Winchester

No objections were received from the all the Statutory consultees whom we consulted. No objections were received from members of the public.