

Permitting decisions

Variation to permit

We have decided to issue the variation for Bletchingley Central (previously permitted as Bletchingley Wellsite 5) operated by Island Gas Ltd

The variation number is EPR/VP3632ZJ/V002

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;
- 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 site comprises of a single on-shore crude oil well extraction site, known as Bletchingley Central and consists of two wells (wells 5 & 6). The site area is approximately 0.41 ha centred on TQ 34723 47970. It is located in a rural area and is surrounded by agricultural land to the south west of South Godstone. The Application was duly made on 29th June 2017.

We gave the Application the reference number EPR/VP3632ZJ/V002. 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/VP3632ZJ. 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 in to 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 standard rules radioactive substances permit is required for this operation for export of produced water from this site to Palmers Wood for reinjection. This is subject of a separate permit application and associated decision document, which is EPR/RB3694DS.

Brief outline of proposed process

The site comprises of a single on-shore crude oil well extraction site, known as Bletchingley Central and consists of two wells (wells 5 & 6). There is a separate well (BL2) which is currently suspended/under review for future development. This is not included under this permit and will require a separate permit variation to add in future. The remaining abandoned wells on the site (BL1, 3 and 4) have all been fully decommissioned in accordance with the relevant regulations and do not form part of this permit. The site area is approximately 0.41 ha centred on TQ 34723 47970. It is located in a rural area and is surrounded by agricultural land to the south west of South Godstone.

The installation consists of the loading, unloading, handling, storage of, and the physical and thermal treatment of crude oil at the site. These activities are described under Schedule 1, Part 2, Section 1.2 A(1) (e)(i) of the Environmental Permitting Regulations 2010 (as amended). Crude oil is extracted from an oil bearing reservoir using Venturi jet pumps. It is then then passed through an oil heater and three phase separator to remove water and natural gas from the crude oil. The stabilised crude oil is stored within two banded bulk storage tanks, with a third used for produced water. The total capacity is 149 tonnes.

Associated activities include: storage of raw materials, storage of 'produced' water, utilisation of natural gas from the production process as a primary fuel for the dual fuel oil bath heater which heats the crude oil to enhance the separation and the generation of electricity using a diesel generator. Flaring of surplus gas is listed as a separate Installation activity as the capacity of the flare is greater than 10 tonnes per day.

A proportion of the oil from the separation process is used in the extraction process Venturi jet pumps, the remainder of the oil and the 'produced water' is stored on site prior to being transferred off site by road tankers.

Natural gas separated on site from the production process is utilised as a primary fuel for the dual fuel oil bath heater, the oil bath heater can also be run on kerosene if required.

There are four atmospheric release points to air from the: crude oil heater exhaust, diesel generator exhaust, tank storage vent and ground flare.

There are no discharges to groundwater, surface water or sewer. Bund and surface run off collected within the perimeter ditch sump is removed by suction tanker as required and transported to the nearby IGas Palmers Wood wellsite for processing through the separator to remove any hydrocarbons present, prior to

storage and re-injection into the same oil bearing strata.. The produced water is transported from site by road tanker to nearby Palmers Wood site for re-injection into the same oil bearing strata.

A new Standard Rules radioactive substances (RSR) Permit is required for the temporary storage of 'out of scope' produced water prior to exporting from site for re-injection at other IGas sites (e.g. Palmers Wood).

The application is within the relevant distance criteria of a Special Area of Conservation (SAC)– Mole Gap to Reigate Escarpment (Approximately 9 km). There are also 7 local Wildlife Sites and 10 Ancient woodlands within 2 km of the site.

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 in the updated regulations (previously 1.2A(1)(h)(i) in the existing permit). The oil storage and handling activities on site have not changed from those currently permitted. The flaring of natural gas has been changed from a mining waste activity to a Section 5.1 Installation A1 activity for incineration hazardous waste (>10 tonnes per day) based on the flare maximum design capacity of 21.78 tonnes, despite typical volumes flared on site being below this (0.2 tonnes per day).
- 1) A Mining Waste Operation, as defined by the Mining Waste Directive and Schedule 20 of the Environmental Permitting (England and Wales) Regulations 2016 as amended, relating to the management of extractive waste not involving a Mining Waste Facility. The Mining Waste activities authorised under this permit include: 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.

There are no groundwater activities associated with this permit. All site surface water and produced water is collected and stored in a tank prior to being exported offsite. There are no other changes to the permit.

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 site name change from Bletchingley Wellsite 5 to Bletchingley Central is in order to align with the current planning permission. The oil storage Installation 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. As the amount stored on site is under 500 tonnes (149 tonnes in total) the subsistence charge falls under table 2.8 of our charging scheme.

The existing activity for flaring of natural gas has been changed from a mining waste activity to a Section 5.1 A1 activity for incineration hazardous waste (>10 tonnes per day) based on the flare maximum design capacity of 21.78 tonnes (12.5 MWth), with no physical limitations being installed by the Operator, despite typically volumes being flared on site being below this (0.2 tonnes per day in 2016). As such we have concluded it is a schedule A1 Installation activity instead of the previously permitted mining waste activity under this permit variation. The gap analysis application information provided by the applicant states: *"The ground flare system is designed to handle a maximum 1.0MMSCF gas/day (21.8 tonnes/day) the maximum reached during 2016 has been 8,000 scf/day (0.2 tonnes/day). Infeed to the flare is via a branched manifold that feeds 4 rows of burners each one of which has a butterfly valve in the inlet so that the number of burners on line can be adjusted according to the flare capacity ensuring an efficient burn at all times."*

This permit variation is for the currently permitted wells BL5 and BL6 only. During pre-application it was explained that other wells could be added to the permit as part of the variation/ permit review if required. The operator has confirmed in their schedule 5 response on 07/11/2017 that well BL2 currently listed as suspended under review is not to be included as part of this permit variation. The remaining wells BL1, BL3 and BL4 listed as 'abandoned' have been fully abandoned following IGas Well Examination (Well Abandonment) Procedures and the following relevant Regulations and Guidelines:

1. DCR Regulation 18 and Guidance.
2. Oil and Gas UK Guidelines for Well Operators on Well Examination.
3. Oil and Gas UK Guidelines for Well Operators on Competency of Well Examiners.

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. This variation does not permit any hydraulic fracturing. We have specified this limit in Schedule 1 of the permit under Table S1.1, activity A6. It also does not include any future drilling of sidetracks or new wells, or for future abandonment or decommissioning of wells which the operator has chosen to apply for as a separate variation at site closure.

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 treatment. 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 are therefore satisfied that the activity 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. The acid reacts with the scale in the well that is blocking

access to the target oil reservoir formation and all spent acid is recovered to the surface. This operation does not involve the pressurization of the circulating fluids in order to penetrate the reservoir. We have considered the acid wash treatment as described in the waste management plan and concluded that it meets the groundwater 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 Improvement conditions (ICs) 2, 5 and 7. We are satisfied that these measures to minimise the risk of air emissions, together with condition 3.1.1 provide acceptable controls.

Groundwater Activities

There are no groundwater activities undertaken at this site. No re-injection takes place at this site, so there is no risk to the groundwater beneath the site from re-injected fluids. As the site is situated directly on the Weald Clay (which forms a natural protective layer to the deeper aquifers), the site has containment measures in place and there are no discharges from the site to the ground there is no risk to the groundwater environment beneath the site. All produced and surface water is tankered offsite to Palmers wood for further separation and reinjection.

As a result of there being no groundwater activities undertaken at this site we have not required the operator to install groundwater monitoring.

We are satisfied that all chemicals used are either intrinsic to the operations or in the case of the well maintenance activities meet the requirements for a de minimis exclusion and are therefore not separate groundwater activities in their own right. These activities include the use of biocides and corrosion inhibitors, well maintenance activities: hot oil washing, acid treatment, wax dissolver and the use of the venturi pumps as detailed in the application and schedule 5 response.

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 Improvement condition IC4 to review:

- i) The procedure for identifying bund fill levels, e.g. high level alarm on unmanned sites
- ii) The procedures for confirming the ongoing integrity of the impermeable membrane and subsequent remediation measures if required.

All other aspects from the gap analysis response are picked up through the IC programme included in this permit. See details on specific ICs below for more information.

Schedule 5 responses

We requested additional information to be provided by 27/10/2017 under a schedule 5 notice issued on 01/09/2017. We are satisfied that the notice has been complied 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 condition under table S1.3 under the permit.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
Consultation	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>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.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> • Local Authority, Environmental Protection • Food Standards Agency • Health and Safety Executive • Mineral Planning Authority • Local water companies including SES Water, Southern Water and Thames Water • Public Health England <p>The comments and our responses are summarised in the consultation section.</p>
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 facility	
The regulated facility	We considered the extent and nature of the facilities at the site in accordance with our Regulatory Guidance Note No 2 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.
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> <ol 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	The operator has provided a waste management plan which we consider is satisfactory.

Aspect considered	Decision
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 the Mole Gap to Reigate Escarpment (Approximately 9 km away). There are also 7 local Wildlife Sites and 10 Ancient woodlands within 2 km of the site.</p> <p>We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.</p> <p>An Appendix 11 have been completed for information and filed on EDRM.</p> <p>Emissions to air: This is an existing site which has been permitted since 2013 with no increases in air emissions as a result of this variation and consolidation. The emissions to air are from the oil storage tanks, flare, bath heater and diesel generator on the site.</p> <p>The H1 submitted with the application screens out all air emissions as insignificant, with the exception of nitrogen dioxide. This has been demonstrated not to have an impact as described below in the operating techniques section. In addition as part of this variation and consolidation monitoring limits have been set on the point source emission points to air to minimise any impact, and a review of gas management has been requested though IC4 to further reduce any future air impacts if required.</p> <p>Emissions to water: These are not applicable as there are no surface water discharges. All site surface water is collected and tankered off site.</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>
Operating techniques	
Operating techniques Water Quality	<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 features in this area. There are no groundwater activities permitted as part of this variation. We are satisfied that in the case of the well maintenance activities they meet the groundwater activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.</p> <p>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. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</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>IC7 requires the operator review their surface water management and implement any agreed changes.</p>

Aspect considered	Decision
General operating techniques	<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>

Aspect considered	Decision																																													
<p>Operating techniques for emissions that screen out as insignificant</p>	<p>We have previously assessed the operators H1 assessment as part of the original permit application in 2013 and concluded that all air emission have either been screened out as insignificant or do not require further assessment. We have presented our conclusions from 2013 in italics below.</p> <p>From the H1 assessment provided with this application we had some initial concerns about potential for NOx generation from the flare (which is operating at a significantly lower level than is design capacity) and the generator on site.</p> <p>We have however confirmed for the flare that it is unlikely that NOx would be an issue as:</p> <ol style="list-style-type: none"> 1) Sub-optimal flaring is likely to reduce combustion temperatures which would limit NOx formation (NOx only forms at high temperatures – main formation temperature is >1500 C) 2) Reduced flaring volumes will lead to a decrease in mass emissions compared to operating a maximum rate. <p>We have also concluded based on the operators submission that the generator, although of a different type to that submitted in the H1 assessment is comparable in terms of scale and emissions. We have therefore concluded that all air emissions have either been screened out under H1 or remain insignificant.</p> <p>In addition, to ensure that gas management and utilisation on site is BAT in accordance with our sector guidance we have included IC2, 4, 5 and 6 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. We consider that the emission limits included in the installation permit along with the ICs above reflect the BAT for the sector.</p> <p>Our conclusions from assessment of the permit application in 2013 were: <i>We have reviewed the H1 screening assessment provided in support of the application. All emissions apart from Nitrogen oxides (short term) are screened as insignificant</i></p> <table border="1" data-bbox="523 1205 1398 1420"> <thead> <tr> <th>Substance</th> <th>Long term EAL</th> <th>Short term EAL (ug/m³)</th> <th>PC ug/m³</th> <th>% long term EAL</th> <th>>1% of EAL ?</th> <th>PC ug/m³</th> <th>% PC of EAL</th> <th>>10% of EAL ?</th> </tr> </thead> <tbody> <tr> <td>Carbon Monoxide</td> <td>-</td> <td>10,000</td> <td>8.99</td> <td></td> <td></td> <td>129</td> <td>1.29</td> <td>No</td> </tr> <tr> <td>Nitrogen Dioxide</td> <td>40</td> <td>200</td> <td>15.6</td> <td>38.9</td> <td>Yes</td> <td>196</td> <td>98.2</td> <td>Yes</td> </tr> <tr> <td>Sulphur Dioxide</td> <td>-</td> <td>350</td> <td>0.688</td> <td></td> <td></td> <td>19.3</td> <td>5.51</td> <td>No</td> </tr> <tr> <td>Butane</td> <td>14,500</td> <td>181,000</td> <td>0.767</td> <td>0.00529</td> <td>No</td> <td>17.0</td> <td>0.00937</td> <td>No</td> </tr> </tbody> </table> <p><i>The greatest contribution to Nitrogen dioxide emissions is the diesel generator the applicant is actively pursuing connection to the electricity grid and it is anticipated this will be completed by the end of 2013.</i></p> <p><i>The above table shows that Nitrogen Dioxide is the parameter which cannot be screened as insignificant using the H1 impact assessment tool.</i></p> <p><i>Normally under such results, we would require the operator to provide detailed air dispersion modelling (which is considered to be more accurate in predicting impacts than H1, which is a crude tool and can produce over-conservative results.</i></p> <p><i>In considering whether we needed to require dispersion modelling, we consulted our specialist air quality modelling and assessment unit (AQMAU). This was done because the diesel generator is a small apparatus, and has a low stack height of which the over conservativeness of H1 is multiplied, and therefore might have been unreasonable to base the decision to provide detailed air dispersion modelling on H1.</i></p> <p><i>Making reasonable conservative assumptions about model input parameters, we can confirm that the risk to exceedance of air quality standards (EQS) at human receptors is low. Our checks show that contributions are likely to be insignificant relative to respective air quality EQS for sulphur dioxide, carbon monoxide and nitrogen dioxide.</i></p>	Substance	Long term EAL	Short term EAL (ug/m ³)	PC ug/m ³	% long term EAL	>1% of EAL ?	PC ug/m ³	% PC of EAL	>10% of EAL ?	Carbon Monoxide	-	10,000	8.99			129	1.29	No	Nitrogen Dioxide	40	200	15.6	38.9	Yes	196	98.2	Yes	Sulphur Dioxide	-	350	0.688			19.3	5.51	No	Butane	14,500	181,000	0.767	0.00529	No	17.0	0.00937	No
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Aspect considered	Decision
	<p><i>The H1 tool assumes low plume rise and also models the peak impact anywhere (on the modelling grid). We have incorporated the locations of human receptors that are a considerable distance from the peak predicted impact.</i></p> <p><i>In addition to this, we have checked the predicted process contribution compared to critical levels (NOx and SO2) and critical loads (nutrient nitrogen and acid deposition). We have found that the contribution is not likely to exceed the action threshold of 100% of a critical level or load at the local non-statutory ecological receptor. Birchen Coppice.</i></p> <p><i>Short Term dispersion modelling for nitrogen dioxide has not been undertaken. It was considered that this was not relevant for the following reasons:-</i></p> <ul style="list-style-type: none"> • <i>the local geographical setting (rural location) ,</i> • <i>the over conservativeness of the H1 assessment and</i> • <i>the low stack heights (local dispersion only – with emission concentrations likely to reach background levels at the site boundary).</i> <p><i>As a result of this (and confirmation from AQMAU) we were able to proceed with the determination without the need for requiring detailed Air Dispersion modelling</i></p>
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.
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 not need to impose pre-operational conditions.

Aspect considered	Decision
Improvement programme	<p>Based on the information on the application, we consider that we need to impose an improvement programme.</p> <p>The existing permit has two ICs that weren't completed by the original 2014 deadline due to proposed changes on site and the upcoming permit review. ICs 2 and 3 (containment & pollution prevention measures for tanker loading and utilisation of gas). These specific requirements have been superseded by the improvement programme outlined (in particular ICs 1, 2, 4 and 6) below so have not been carried forward as part of this variation.</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>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 - Environmental Management System Review</p> <p>Improvement condition IC3 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 well. The last point is to cover any remedial measures in event of a failure</p> <p>IC4 - Gas management</p> <p>Improvement condition IC4 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 4 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>IC5 - Air emissions monitoring</p> <p>Improvement condition 5 is necessary as the site features emissions to air with the potential to cause pollution. We have applied improvement condition 5 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>IC6 - Vapour recovery</p> <p>Improvement condition IC6 is necessary as the operator does not appear to be currently complying with the requirement to capture and recover all hydrocarbon vapours arising from the loading and unloading of liquid hydrocarbons into vehicles. Vapour recovery is necessary both for safety reasons and also to reduce the environmental impacts of storing, loading, transporting and unloading hydrocarbons.</p> <p>IC7 - Surface water management</p> <p>Improvement condition IC7 is required because the operator has indicated that rainwater is not always being dealt with in accordance with requirements necessary to protect the environment from uncontrolled contaminated discharges of site surface water.</p> <p>The development of a plan to show 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>
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>We have required monitoring for the following substances in Schedule 3 of the permit. Oxides of nitrogen, carbon monoxide, total organic compounds (VOCs), methane, flare gas feed flow rate, temperature, Gas vented (calculation method) and Hydrogen Sulphide</p> <p>There are no discharges to water or land.</p>

Aspect considered	Decision
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 as listed above in emission limits and as specified in table S31 of 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>
Financial competence	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.</p>
Financial provision	<p>We are satisfied that there is no mining waste facility at this site and therefore the requirements for financial provision do not apply. 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 include the need for a financial guarantee for non-hazardous waste, unless deposited in a Category A facility.</p>
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>

Aspect considered	Decision
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
- Food Standards Agency
- Health and Safety Executive
- Mineral Planning Authority
- Local water companies including SES Water, Southern Water and Thames Water
- Public Health England

No objections were received from the all the Statutory consultees whom we consulted. 6 objections were received from members of the public (5 in general opposition to oil and gas development, rather than specific site comments and 1 in support).

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

- **Responses from organisations listed in the consultation section**

Response received from
Environmental Health Department, Tandridge District Council, 26/07/17
Brief summary of issues raised
No objections raised. No noise of amenity issues at this site.
Summary of actions taken or show how this has been covered
No action required

Response received from
Public Health England, 18/04/2017
Brief summary of issues raised
No objections raised. Recommended that additional organisations were consulted: Local Authority, Food standards Agency, Director of Public Health and local water company.
Summary of actions taken or show how this has been covered
Other consultees already dealt with as part of standard application process

Response received from
Mineral Planning Authority, Tandridge District Council, 23 rd August 2017
Brief summary of issues raised
No objections raised. Letter includes the current planning status and conditions associated with Bletchingley 5&6 and the new wellsite 2.
Summary of actions taken or show how this has been covered
No Actions required. Information provided for info only. We are in regular conversation with the planning Authority regarding this site.

Response received from
SES Water, 21 st August 2017
Brief summary of issues raised
No comments to make on this application.
Summary of actions taken or show how this has been covered
No Actions required.