

Perenco UK Limited
Thrashers Lane
Corfe Castle
Wareham
Dorset, BH20 5JR



19th July 2022

Mr R Jefferies
Principal Mineral Planning Officer
Minerals & Waste Development
Environmental Services
Dorset Council
County Hall
Colliton Park
Dorchester
DT1 1XJ

Dear Rob,

**RE: The Town and Country Planning (General Permitted Development) (England) Order 2015:
Proposed Installation of Temporary Flare Unit located at the Kimmeridge Wellsite.**

In accordance with Schedule 2 Part 17 Class B *other developments ancillary to mining operations* (b) – install, erect plant and machinery of the Town and Country Planning (General Permitted Development) (England) Order 2015, Perenco UK Ltd Wytch Farm are writing to notify the Mineral Planning Authority of a proposal to install a temporary flare unit to provide emissions reductions at the wellsite while a gas compression system is installed by the end of 4Q 2022.

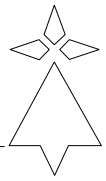
Introduction & Overview

Due to unforeseen global circumstances regarding the manufacture and supply of the equipment required to reduce the venting of gasses at the Kimmeridge Wellsite and related to the planning consent 6/202/0143, Perenco Wytch Farm are seeking approval through the prior approval process from the Mineral Planning Authority to install a temporary flare unit on site to achieve the combustion of untreated gases that are currently vented to the atmosphere. The unit will operate over a six-month period.

The wellsite is being prepared to securely locate the unit on the western side of the wellsite.

The preparation works include:

- The leveling of the surface to create a level hard standing
- A concrete base and bund measuring 6.4m long, 4.4m wide and 20cm high, with direct free flowing drainage to the existing surface water containment for any rainwater collection. Please refer to drawing **EWF-KA-OB-00-0001 Kimmeridge Wellsite Plot Plan**
- Small diameter gas pipe supply from the existing oil storage tanks and safety controls, please refer to drawing **EWF-KA-OB-00-0001 Kimmeridge Wellsite Plot Plan**
- Electrical connections
- Instrument Control system linkages to GG control



The flare unit is supplied as a compact and skid mounted system which complies with safe operation in environmental and hazardous settings, such as the Kimmeridge wellsite. Please refer to drawing schematic titled **GA drawingPart-2** that details the flare connections and overall dimensions.

These combustion systems are commonly used at landfill sites and other UK onshore hydrocarbon production sites to manage the untreated and vented of gases.

Additional Information & Environmental Considerations

Existing planning consents related to the Kimmeridge Wellsite are:

- 6/2020/0143 Installation of plant to facilitate reduction in the venting of gases (Methane & VOC's)
- 6/2012/0607 Erection of plant and equipment for the recovery of gas and the generation of electricity
- 6/2012/0608 Renewal of oil production wells

Included with this letter are the following drawings:

- EWF-KA-OB-00-0001 Kimmeridge Wellsite Plot Plan
- Flare unit - GA drawingPart-2
- Kimmeridge Civils for Flare Slab (showing bund & drainage)

The site is accessed via a private Access Road across part of the Smedmore Estate from the toll booth located in Kimmeridge village to the wellsite.

Traffic associated to the delivery and installation will not impact the existing road networks.

There are no impacts or effects regarding visibility from the relevant public footpaths, bridleways and local view points. The wellsite is a highly visible operational site and the top of the flare stack will sit within the back drop of the existing tree screen planting and existing production plant.

Due to the minimal impact on the surrounding landscape and 6 month duration of the unit on site, there is no requirement to paint the stack to the historic Wytch Farm low sheen black or dark brown specification. The flare stacks narrow diameter (796mm dia) and standing 6m tall, the external appearance will be similar to a brushed stainless steel, so reflection will be minimal. Please refer to GA drawing Part-2.

There are no requirements for any additional lighting for the flare unit.

Existing site drainage and onsite surface water treatment systems will be used for surface water management from the unit bund and managed under existing and established procedures.

Decommissioning Restoration & Aftercare of the temporary construction to accommodate the installation will be completed in line with existing planning consents listed above and section 106 obligations.

Existing Emissions / Current gas management



The Kimmeridge Wellsite is a remote, standalone well site located on top of coastal cliffs overlooking Kimmeridge Bay in Dorset. The site comprises a single oil production well (KA-01). Oil is pumped to the surface using a beam pump and transferred to two oil storage tanks via an above ground pipeline.

The site lies approximately 9km south-west of the Wytch Farm Gathering Station. Due to the remote location, oil is transferred to Wytch Farm Gathering Station by road tanker, three times per week.

There is no separation of associated gas prior to tank storage. Gas that comes out of solution in the oil storage tanks is currently vented direct to atmosphere via elevated vent stacks. The site has a 2022 annual vent consent from the North Sea Transition Authority (NSTA, formally the OGA) for 1.114 tonnes per day. This consent considers that the venting project would be in operation by 1st July 2022.

The gas vented is quantified using the daily oil production from the well and applying a Gas:oil ratio (GOR). Perenco have also periodically measured the vented gas to quantify the emissions and validate the GOR.

The GOR for the well is 1,071 scf/bbl and current oil production is in the region of 53 bbls / day (2022 year to date average). This equates to a mass flow rate of vented gas of 1.6946 Te/day. The methane content of the gas is approximately 52.10 % weight¹.

As Methane has a Global Warming Potential (GWP) 28 times² more potent than CO₂, there is a significant environmental benefit to combusting the vent gases in a flare, even on a temporary basis of six months.

The proposed flare is designed to control the combustion air supply to achieve a temperature of 1000degC and 0.3 seconds retention time at this temperature, which enables 99% destruction of Methane. This is in-line with the emission standard stated in the SEPA/EA Guidance on Landfill Gas Flaring.

Table 1 summarises the potential reduction of CO₂ emissions that could be achieved by operating the flare at Kimmeridge. In total, burning the vent gas in the high temperature flare could achieve a potential reduction of CO₂e emissions of around 4,000 Te³.

Table 1- Summary of the potential reduction in CO₂ emissions from the combustion of Methane from the vent stream during the 6-month temporary flare period

	Venting				Flaring
Temporary Flare Period	Predicted Vent Emissions (Te)	Methane CH ₄ Emissions (TeCO ₂ e)	NM VOC Emissions (TeCO ₂ e)	Total CO ₂ Emissions from Venting (TeCO ₂ e)	Total CO ₂ Emissions from Flaring (TeCO ₂ e)
Aug 2022 – Jan 2023	308.69	4,504.08	661.56	5,165.64	875.91

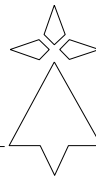
Notes/Assumptions for calculation of emissions:

¹Vent gas composition based on 2019 sampled gas composition, converted to mass % using AspenTech Hysys software v10:

- Methane (CH₄) content: **52.10 %**
- Non-Methane Hydrocarbons (NM VOCs) content : **46.59%**
- Other: **1.31 %**

²Global Warming Potential (GWP) for calculating CO₂e from venting, as per EA 'Waste Gas Management at onshore Oil and Gas sites: framework for technique selection':

- CH₄ = **28** (IPCC 2013)



P E R E N C O

- NMVOC = **4.6**

³Flaring CO₂e emissions calculation assumes 100% combustion efficiency.

Please don't hesitate to contact me if you require any further information.

Yours sincerely



Ade Parvin

Perenco WYF – Environmental Lead