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Offshore Petroleum Regulator  
for Environment & Decommissioning

SERICA ENERGY (UK) LIMITED  
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ENGLAND  
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Registered No.: 04073712

Date: 2nd March 2021

Department for Business, Energy  
& Industrial Strategy

AB1 Building  
Crimon Place  
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[www.gov.uk/beis](http://www.gov.uk/beis)  
[bst@beis.gov.uk](mailto:bst@beis.gov.uk)

Dear Sir / Madam

**THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING  
AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS  
2020  
COLUMBUS FIELD, MAERSK RESILIENT DRILLING PLANNED PRODUCER  
WELL 23/16f- CDev-1**

A screening direction for the project detailed in your application, reference DR/2061/0 (Version 2), dated 26th February 2021 has been issued under regulation 6 of the above Regulations. The screening direction notice, and any relevant conditions and comments are attached. A copy of this screening direction will be forwarded to the application consultees, the Oil and Gas Authority and published on the gov.uk website.

If you have any queries in relation to this screening direction or the attachments, please do not hesitate to contact [REDACTED] on [REDACTED] or email the Environmental Management Team at [bst@beis.gov.uk](mailto:bst@beis.gov.uk).

Yours faithfully

Signature valid

Digitally signed by Environmental Section  
Date: 2021.03.02 16:22:37 GMT  
Reason: On behalf of the Department for Business  
Energy and Industrial Strategy  
Location: The Department for Business Energy  
and Industrial Strategy

**THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING  
AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS  
2020**

**SCREENING DIRECTION CONFIRMING THAT AN ENVIRONMENTAL IMPACT  
ASSESSMENT IS NOT REQUIRED**

**COLUMBUS FIELD, MAERSK RESILIENT DRILLING PLANNED PRODUCER  
WELL 23/16f- CDev-1**

**DR/2061/0 (Version 2)**

Whereas SERICA ENERGY (UK) LIMITED has made an application dated 26th February 2021, under The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020, and whereas the Secretary of State has considered the application and is satisfied that the project is not likely to have a significant effect on the environment; in exercise of the powers available under regulation 6, the Secretary of State hereby directs that the application for consent in respect of the project need not be accompanied by an Environmental Impact Assessment, provided that the project is carried out as described in the application for the screening direction and in accordance with the conditions specified in the attached schedule.

In giving a screening direction under regulation 6 of the above Regulations, the Secretary of State accordingly gives his agreement to the Oil and Gas Authority to the grant of consent for the project as detailed in the application.

Effective Date: 2nd March 2021

# **THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2020**

## **SCHEDULE OF SCREENING DIRECTION CONDITIONS**

The grant of this screening direction is conditional upon the screening direction holder complying with the following conditions.

### **1 Screening direction validity**

The screening direction shall be valid from 3 March 2021 until 30 June 2021.

### **2 Commencement and completion of the project**

The holder of the screening direction must notify the Department for Business, Energy & Industrial Strategy (hereinafter called the 'Department') of commencement and completion of the project within two days:

- a) of commencement of the project and
- b) of completion of the project.

Notification should be sent by email to the Environmental Management Team Mailbox: [bst@beis.gov.uk](mailto:bst@beis.gov.uk)

### **3 Extended well tests**

- a) Associated flaring and venting

The holder of the screening direction shall, ensure that any associated flaring of hydrocarbons during the well test does not exceed the level(s) detailed in the application for the screening direction and/or that any associated venting of gas during the well test does not exceed the level(s) detailed in the application for the screening direction.

### **4 Prevention of pollution**

The holder of the screening direction must ensure that appropriate measures are taken to minimise discharges, emissions and waste, in particular through the appropriate use of technology; and to ensure that necessary measures are taken to prevent incidents affecting the environment or, where they occur, to limit their consequences in relation to the environment.

### **5 Inspections**

Should the Department consider it necessary or expedient for an inspector appointed

by the Secretary of State to investigate whether the conditions of the screening direction are being complied with, the holder of the screening direction shall afford the inspector with such facilities and assistance as the inspector considers necessary to exercise the powers conferred by the regulations. The holder of the screening direction shall additionally ensure that copies (electronic or paper) of the screening direction and any other relevant documents are available for inspection by the inspector at:

- a) the premises of the holder of the screening direction; and
- b) the facilities undertaking the project covered by the screening direction.

## **6 Check monitoring**

Should the Department consider it necessary or expedient to undertake an independent monitoring programme to assess the impact of the project covered by the screening direction, the screening direction holder shall afford the Department with such facilities and assistance as the Department considers necessary to undertake the work.

## **7 Atmospheric emissions returns**

Following completion of the project covered by the screening direction, the holder of the screening direction shall report all relevant atmospheric emissions, such as combustion emissions, extended well test emissions or flaring and venting emissions relating to a well test, using the appropriate Environmental Emissions Monitoring System (EEMS) reporting forms. In the case of atmospheric emissions relating to drilling projects undertaken from a fixed installation, they should be included in the annual EEMS reporting forms for the fixed installation.

## **8 Unauthorised deposits**

Following completion of the project covered by the screening direction, the holder of the screening direction shall recover any materials accidentally or temporarily deposited on the seabed, such as debris, temporary containers, structures or deposits, or scientific instruments, and shall return the materials to land. If it is not possible to recover any of these deposits, full details of the materials remaining on the seabed must be reported to the Department in accordance with the requirements of Petroleum Operations Notice No.2 (PON2).

## **9 Screening direction variation**

In the event that the holder of the screening direction proposes changes to any of the particulars detailed in the application for a screening direction, the holder must notify the Department immediately and submit an application for a post screening direction amendment. The post screening direction must be in place prior to the amended proposals taking effect.

## COMMENTS ON THE APPLICATION FOR SCREENING DIRECTION

### Section 1

The attention of screening direction holders is drawn to the following provisions regarding The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020.

1) You are deemed to have satisfied yourself that there are no barriers, legal or otherwise, to the carrying out of the project covered by the screening direction. The issue of a screening direction does not absolve the screening direction holder from obtaining such authorisations, consents etc that may be required under any other legislation.

2) The Department would draw your attention to the following comments:

The Department has no further comments.

3) All communications relating to the screening direction should be addressed to:

#### **Out-of-hours emergency screening direction variations:**

Telephone Met Office out-of-hours service (0330 135 0010) and ask to be connected to the Department's On-call Response Officer (Offshore Environmental Inspectorate).

#### **Routine communications**

bst@beis.gov.uk

or

Offshore Petroleum Regulator for Environment & Decommissioning  
Department for Business, Energy & Industrial Strategy  
AB1 Building  
Crimon Place  
Aberdeen  
AB10 1BJ

Tel [REDACTED]

## **SCHEDULE OF SCREENING DIRECTION DECISION REASONS**

This document provides a summary of the assessments undertaken by OPRED to determine whether an Environmental Impact Assessment is required for this project. This document summarises the information considered, the potential impacts and sets out the main reasons for the decision made.

In considering whether an Environmental Impact Assessment is required or not, the following have been taken into account:

- a) the information provided by the developer;
- b) the matters listed in Schedule 5 of The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Regulations 2020) (the Regulations);
- c) the results of any preliminary verifications or assessments of the effects on the environment of the project; and
- d) any conditions that the Secretary of State may attach to the agreement to the grant of consent.

### **Characteristics of the Project**

Having regard, in particular, to the matters identified at paragraphs 1(a) to (g) of Schedule 5 to the Regulations, the characteristics of the project include the following.

#### Summary of the project :

- 36" and 26" Water Based Mud (WBM) sections
- 17.5", 12.25" and 8.5" Low Toxicity Oil Based Mud (LTOBM) section
- Extended Well Test (EWT)
- Well clean-up
- Well suspension

#### Description of the project :

Columbus Development Well 23/16f-CDev 1, will be drilled from the Maersk Resilient Heavy Duty Jack-Up, a Mobile Offshore Drilling Unit (MODU) owned and operated by Maersk Drilling with operations expected to take 70 days. The well will target the Columbus gas condensate reservoir.

No cumulative impacts are expected to occur between this project and other existing or approved projects. Following completion of drilling operations, the well will be connected to the Columbus tie-in structure using a dive support vessel. A screening direction will be assessed to cover this operation.

The well will be drilled with a combination of Water Based Mud (WBM) and Low

Toxicity Oil Based Mud (LTOBM). Cuttings from the WBM sections will be discharged at the seabed, whilst cuttings generated in the LTOBM sections will be returned to shore for treatment and disposal.

As part of the well clean-up operations and to meet data acquisition requirements an Extended Well Test (EWT) will be run. The well will be flowed to remove the base oil, completion brines and to clean up the reservoir sand face. To account for the complexity of the reservoir formation and length of the directional drill, Serica have applied for a 6 day flow duration. The resultant hydrocarbons will be flared with a maximum of 1,202 m<sup>3</sup> of condensate (ca. 917 tonnes) and 3,966 thousand m<sup>3</sup> of gas (3,218 tonnes) resulting in 11,944 tonnes of CO<sub>2</sub>.

Drilling of a condensate producing well was assessed in the original scope of the Columbus Field Development Environmental Statement which was approved 2 October 2018.

It is not considered to be likely that the project will be affected by natural disasters. The risk of a major accident such as a well blowout has been assessed. The Developer has control measures in place to reduce the risk of a major accident occurring and the probability of such an event occurring is very low.

### **Location of the Project**

Having regard, in particular, to the matters identified at paragraphs 2(a) to (c) of Schedule 5 to the Regulations, the environmental sensitivity of geographical areas likely to be affected by the project has been considered as follows:-

The well is located approximately 230 kilometres (km) east of Peterhead and 8 km east-south-east of the United Kingdom-Norway median line.

The operations are part of the existing Columbus development and were included in the original scope of the Environmental Statement which included the well and its connection by a spool piece to the Arran to Shearwater subsea pipeline via a tie-in structure. The Columbus field comprises gas condensate stratigraphically trapped within sandstone reservoirs of the Palaeocene Forties Formation. It was discovered in 2006 by well 23/16f-11 and subsequently appraised by wells 23/16f-12, 23/16f-12z, 23/21a-7x and 23/21a-7z. Once drilling operations are completed, the single subsea development will be produced to the Shearwater platform via the Arran pipeline, both operated by Shell UK Limited.

The project is located in an area characterised by Holocene silty sand with occasional cobbles and boulders, areas of shell, gravel and cobbles were also present with a water depth of 85 metres (m). Analysis of the macrofaunal sample dataset suggested that the faunal community across the survey area was generally homogenous. The community at each station was moderately diverse, although relatively uneven in distribution with species dominance influenced by the abundance of the polychaete *P. jeffreysii* at each station. Polychaeta, the most abundant phylum, accounted for 84% of all individuals and 48% of taxa overall, this is typical of

continental shelf marine sediments.

A low number of ocean quahog (*Arctica islandica*) were found in grab samples during surveys in 2008, 2015 and 2018. The 2018 survey found a total of four ocean quahog across all stations. The ocean quahog is listed as a threatened and/or declining species by OSPAR, and as a species feature of conservation importance.

The waters of the proposed Columbus development well location act as a nursery area for anglerfish (monkfish), blue whiting, cod, European hake, haddock, herring, horse mackerel, ling, mackerel, Norway pout, plaice, sandeel, spotted ray, spurdog and whiting.

There are no charted wrecks located in the vicinity of the proposed Columbus development well location. There are no licensed dredging or charted dumping areas within the vicinity of the proposed Columbus development well location.

The proposed operations do not take place within an offshore Marine Protected Area (MPA). The nearest MPA is East of Gannet and Montrose Fields NCMPA and is situated approximately 33 km from proposed operations.

Given the location of the project, it is not likely that the areas identified at paragraphs 2(c)(i), (iii), (iv), (vi), (vii) and (viii) of Schedule 5 to the Regulations will be affected by the project.

### **Type and characteristics of the potential impact**

In accordance with paragraph 3 of Schedule 5 to the Regulations, the likely significant effects of the project on the environment have been considered. Potential effects on the environment from the activities associated with the project were assessed, including impacts arising from atmospheric emissions, seabed disturbance, physical presence, planned discharges and accidental spills.

Other than the matters considered further below, there is not likely to be any significant impact of the project on population and human health.

There will be a 500 m radius safety zone around the Maersk Resilient MODU, excluding unauthorised access of vessels and prohibiting access to fishing vessels. No additional impacts to fisheries are identified as part of the operations at the proposed Columbus development well location. Residual effects resulting from the physical presence of the Maersk Resilient MODU, the establishment of a 500 m safety exclusion zone and the support vessels at the sea surface on other sea users (shipping and commercial fishing) have been assessed as not likely to have significant effect.

The overall impacts from seabed disturbance have been assessed as not likely to have a significant effect on the environment:

- A total of 170 m<sup>3</sup> of water-based mud drill cuttings will be discharged to the seabed and result in seabed disturbance. Seabed disturbance could result in



the smothering and mortality of benthic fauna which will result in some short term temporary impacts, however the benthic communities are expected to regenerate the area impacted by drill cuttings over time.

- The ocean quahog is listed as threatened and/or declining species by OSPAR (2018), and a species feature of conservation importance. A low number of ocean quahog (*Arctica islandica*) were found in grab samples during previous surveys in 2008, 2015 and the 2018 survey found a total of four ocean quahog across all stations. Any specimens buried by deposition of drill cuttings, muds and cement on the seabed are likely to be able to recover to the surface before succumbing to anoxia. It is therefore unlikely that the project will have any significant impact on this species.

- Cementing operations may involve discharges of cement when cementing the top hole section. This will, however, be confined to a small area within the immediate vicinity of the wellbore and will not extend beyond the area where the drill cuttings are predicted to be deposited.

- The Maersk Resilient MODU will 'jack-up' onto the seabed, with each of its three legs terminating in a spud can that will be placed on the seabed. The contact area of spud cans is approximately 1,039 m<sup>2</sup> with penetration depths of 2.3 - 3.3 m. The maximum volume of seabed sediment to be disturbed is 3,429.36 m<sup>3</sup>. When the MODU leaves the Columbus location it may leave spud can pull out pits however, these pull out pits have been assessed as not likely to have a significant effect on the environment.

Discharge of chemicals associated with the WBM and the risk posed to the marine environment has been assessed as not having a likely significant effect on the environment. Chemicals associated with LTOBM will be returned to shore for treatment and disposal, resulting in no significant impact to the offshore environment.

Operations at the proposed Columbus development well location may result in the discharge of produced water contaminated with LTOBM during the well test. No discharge will take place until it has been confirmed that the concentration of oil in water is below 30mg/l, and a maximum of 954 m<sup>3</sup> of water with a maximum of 28.6 kg of oil may be discharged. This discharge is not considered to have a likely significant effect on the environment.

There are no expected transboundary effects from the operations at Columbus. The nearest boundary (UK/Norwegian Median Line) is located approximately 8 km east of the operations. It is not considered likely that any planned operational discharge (cuttings, chemicals or base oil) will be detectable at this distance from the Columbus well.

A worst-case major accident scenario resulting from a potential well blow-out was modelled and assessed. The maximum hydrocarbon blowout rate of oil from the Columbus 23/16f-CDev 1 well is 1,116 m<sup>3</sup>/day of condensate (approximately 848 tonnes/day) for a maximum of 210 days. The stochastic modelling predicts there is zero probability of the condensate spill beaching on the UK coastline. In the event of the worst case scenario blow out the condensate is expected to cross the UK/Norwegian median line and will reach three protected areas. These are East of

Gannet and Montrose Fields MPA, Norwegian Boundary Sediment Plain MPA and Fulmar MCZ. The proposed measures to prevent and respond to any release, including a worst-case scenario have been included in the Columbus Oil Pollution Emergency Plan. The Developer has control measures in place to reduce the risk of a major accident occurring and the probability of such an event occurring is very low.

Atmospheric emissions resulting from drilling at Columbus are considered to have no significant impact on the environment:

- Atmospheric emissions will arise during the proposed Columbus drilling operations from fuel burnt for power generation on the Maersk Resilient MODU, associated support vessels and helicopters and flaring during the well clean up.
- Emissions of combustion products contribute to the pool of greenhouse gases in the atmosphere resulting in global warming and potential climate change. There is potential for the operations at the Columbus Development Well to result in 23,228 tonnes of CO<sub>2</sub>e which equates to 0.16% of annual UKCS offshore emissions and 0.0064% of CO<sub>2</sub>e generated from all UK sectors. Mitigation measures are in place to reduce emissions including reduction of vessel movement and minimisation of the duration of the project and control processes to minimise greenhouse gas emissions.
- As part of the well clean up operations and to meet data acquisition requirements an Extended Well Test (EWT) will be run. The well will be flowed to remove the base oil, completion brines and to clean up the reservoir sand face. To account for the complexity of the reservoir formation and length of the directional drill, Serica have applied for a 6 day flow duration. The resultant hydrocarbons will be flared with a maximum of 1,202 m<sup>3</sup> of condensate (ca. 917 tonnes) and 3,966 thousand m<sup>3</sup> of gas (3,218 tonnes) resulting in 11,944 tonnes of CO<sub>2</sub>. Serica have confirmed that the well will be flowed no longer than is necessary to meet the objectives outlined in the application with flow terminated as soon as these have been achieved.

No cumulative impacts are expected to occur between this project and other projects due to none occurring or approved within block 23/16 at the same time. Currently, there is no other existing oil and gas surface infrastructure in Block 23/16, nor any aggregate extraction, dredging, or dumping activity. There are no planned, consented or operational wind farms within Block 23/16. Additionally, both fishing activity in ICES rectangle 43F2 and shipping activity within Block 23/16 is considered to be relatively low. Cumulative impacts have been assessed as not likely to have a significant effect on the environment. There are no charted wrecks located in the vicinity of the proposed Columbus development well location.

## **Decision**

Taking the above considerations into account, the Secretary of State has concluded that the project is not likely to have a significant impact on the environment and that an environmental impact assessment is not required.