

## Environmental Statement (ES) Summary and Sign-Off

<b>Title:</b>	Bure North Development Well Environmental Statement
<b>Operator:</b>	Perenco UK Limited
<b>Report No:</b>	W/4018/2008
<b>Submission Date:</b>	November 2008
<b>Block No:</b>	49/28-BN
<b>Development Type:</b>	Development Well
<b>Reviewer:</b>	Saravanan Marappan
<b>Date:</b>	January 2009

### A) Project Description:

Perenco UK Limited intend to further develop the Bure gas field located in Block 49/28 of the Southern North Sea. Bure gas field will be further developed by a single subsea Bure North development well tied back, via a 6 inch pipeline, 70 metres in length, to the existing Bure West 49/28-18 subsea wellhead. The gas will be processed on the Thames AR platform facility and fed into the export pipeline to the Bacton Gas Terminal. It is anticipated that the gas produced from Bure North development well will take Bure field over its current production consent by more than 500,000 m<sup>3</sup>/day of gas.

The Bure North 49/28-BN development well is located in Block 49/28 of the Southern North Sea approximately 65 km from the nearest landfall at Sea Palling on the north-western coast of Norfolk and 45 km west of the UK / Netherlands median line, in water depths of approximately 31 metres.

The Bure North 49/28-BN development well will be drilled with the Energy Enhancer jack-up drilling rig. All sections of the well will be drilled with a riser in place using Water Based Mud (WBM). In total it is anticipated that 745 tonnes of WBM cuttings will be discharged to sea. The well will be cleaned up over a period of 48 hours before being brought into production, with a worst estimate of 5,600 tonnes of CO<sub>2</sub> being generated during clean-up.

A 6 inch production flowline and chemical injection hose will be laid between the Bure North and Bure West subsea wellheads. The production flowline and chemical injection hose will be installed by laying the pipeline directly on the seabed and will be protected by flexible concrete mattresses.

At peak production, it is estimated that the Bure North 49/28-BN development well will produce approximately 55 MMscf/day of gas and steadily decline soon after production start-up.

Drilling of the Bure North 49/28-BN development well is scheduled for first Quarter 2009 and first gas is planned for Quarter 4, 2009.

## **B) Key Environmental Impacts:**

The EIA identified and discussed the following activities as having the potential to cause an environmental impact:

- Physical presence – jack-up rig, support vessels
- Seabed disturbance – drill cuttings deposit, drill rig footprint, rig stabilisation
- Noise
- Atmospheric emissions
- Aqueous discharges
- Accidental spillage of hydrocarbons

## **C) Key Environmental Sensitivities:**

The EIA identified the following environmental sensitivities:

- Fish: The area is recognised as a spawning area for Mackerel, Lemon sole, Plaice and Sprat and nursery area for Lemon sole and Whiting. The spawning and nursery areas are extensive and the area of impact would be localised and temporary. Therefore the drilling of the development well is unlikely to impact these species.
- Seabirds: Seabird vulnerability is high in December and March, and lowest in January, April, June, July, September and November. It has been assessed that there are sufficient mitigation measures in place.
- Protected habitats: The proposed Bure North 49/28-BN development well is located on the southern edge of North Norfolk Sandbank pSAC, approximately 16.5 km north of the southern pSAC boundary line and approximately 1.8 km west of the eastern pSAC boundary line. There will be a transient and localised effect of the spud cans smothering benthic infauna and there is a contingency to rock dump a maximum of 3,000 tonnes for rig stabilisation, and concrete mattress protection for the 70 metre long pipeline. However the area of impact is minimal (1616m<sup>2</sup>) and equates to 0.00004% of dSAC. Recovery is expected to be rapid following cessation of drilling, especially as there will be limited discharge of cuttings (745 tonnes). The production from the proposed Bure North development well will be through the existing Thames infrastructure, produced water will be re-injected and there will be no increase in atmospheric emissions as a result of the development well. Therefore, production from the Bure North development well will not have a significant effect on the structure and function of the North Norfolk Sandbanks (dSAC).
- Protected species: Harbour porpoise have been sighted in the vicinity of Block 49/28 in low numbers during the proposed drilling period. However any disturbance is expected to be limited to the drilling period and the short duration / localised disturbance during this period is considered unlikely to significantly impact marine mammals in the area including Annex II species.

**E) Consultees:**

The statutory consultees for this project were the Joint Nature Conservation Committee (JNCC) and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) – Environment & Chemical Groups. They made the following comments:

**JNCC:** JNCC requested for further information on the site survey undertaken by Perenco and advised that DECC consider undertaking an appropriate assessment screening exercise as the development well lies within, or close to, the proposed boundaries for the North Norfolk Sandbanks draft Special Area of Conservation. An appropriate assessment screening exercise was carried out by DECC and JNCC are in agreement with the conclusion that the proposed drilling operations are unlikely to have a significant effect alone or in combination with other projects upon the integrity of the North Norfolk Sandbanks (dSAC). Further site survey information was provided by Perenco and JNCC confirmed that they are content for the ES to receive consent.

**CEFAS – Chemical:** CEFAS Chemical have noted to make an informed assessment in the PON15B and PON15C application stage.

**CEFAS – Environment:** CEFAS Environment has commented that ‘the development well would be in an area where mackerel, plaice, lemon sole, whiting and sprat spawn. Nursery areas for lemon sole, whiting and sandeel are also present in the block’.

**F) Public Consultation:** No comments were received as a result of the public consultation.

**G) Further Information:** Further information was requested from Perenco which addressed the issues raised by JNCC and internal DECC review, including predicted gas production, produced water, atmospheric emissions and chemical discharge. Additional information was provided by Perenco on 9 January 2009 and 15 January 2009, which adequately addressed the issues raised.

**H) Conclusion:**

Following consultation and the provision of further information on 9 January 2009 and 15 January 2009, DECC OED is satisfied that this project is unlikely to have a significant environmental impact. In particular, DECC OED is content that it will not have a significant adverse effect on the marine environment in general or on any protected sites or species covered by the ‘Habitats Regulations.’

**I) Recommendation:**

DECC OED therefore recommends that the Bure North Development Well is given consent to proceed.

**Approved:** Wendy Kennedy

**Date:** .....