PREMIER OIL UK LIMITED

SOLAN DEVELOPMENT

Environmental Statement Summary

**To: Jonathan Ward**

**From: Nicola Abrams**

**Date: 21 August 2017**

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| **ES Addendum Title:**  | **Solan Development, Contingency Produced Water Discharge 2016** |
| **Operator:** | **Premier Oil UK Limited (Premier)** |
| **Consultants:** | **Genesis Oil & Gas Consultants** |
| **Field Group (DECC):** | **Aberdeen (West of Shetland)**  |
| **ES Report No:** | **W/4031/2008** |
| **ES Addendum Date:** | **May 2016 and updated submission 28 July** |
| **Block No:** | **205/26a** |
| **Development Type:** | **Oilfield Development** |
| Project DescriptionApproval for the Solan Field Development was originally granted in April 2012. The development proposals consisted of two (2) production and two (2) water injection wells tied back to an fixed installation that would not be permanently manned, with production routed to a subsea storage tank that would be offloaded via a shuttle tanker. The development was designed for Produced Water Re-injection (PWRI) and was originally approved on the basis that Solan would shut-in production when PWRI was not possible. First production was in April 2016, following successful installation of the subsea storage tank. A contingency to cover for any delay in the tank installation had been approved in April 2014, to temporarily allow direct export to a shuttle tanker if installation of the storage tank was delayed, but this contingency was not required.This assessment summary covers an operational change to the produced water treatment and discharge philosophy. Initially an addendum was submitted for intermittent discharge of produced water, to avoid downtime relating to PWRI issues. However, a combination of limited reservoir injection capacity and the potential loss of injectivity related to the re‑injection of oil-coated particles subsequently resulted in an amended submission to cover discharge of treated displacement water from the subsea tank and treated produced water when the water injection system is not available. Premier therefore required approval for amended proposals to discharge these waste streams when production rates would have to be constrained to maintain PWRI or when the specification of the injection fluids could adversely impact the reservoir. The injection system was designed to have a predicted uptime of 95%, but Premier requested approval for a worst case scenario of 100% discharge of the fluids. The addendum to the original ES and the subsequent update therefore focussed solely on the impacts of discharging these fluids to sea.Key Environmental SensitivitiesThe EIA addendum and update identified and discussed the following key activities as having the potential to cause an environmental impact:* Discharges to Sea - operational discharges and potential accidental events.
* Additional vessel activities - equipment installation and accommodation vessels.
* Wider concerns - increased waste and additional direct and cumulative effects.

Key Potential Environmental Impacts* Discharges to sea - dispersed oil would be discharged to sea. The worst case discharge scenario has been assessed and it concluded that it would result in an increase in the Environmental Impact Factor (EIF) for the Solan discharges. However, the EIF would still be within the range of other UK installations, and the predicted oil discharge would still be less than other developments West of Shetland. The overall impact is therefore considered to be acceptable. The risk of accidental discharges is considered to be low, given the mitigation measures in place.
* Additional vessel activities - the presence of a small number of additional vessels will increase atmospheric emissions. However, the impact has been assessed as negligible, given the remote location and the anticipated dispersion.
* Waste - installation, commissioning and operation of the produced water treatment system will increase waste streams, but the overall impact is considered low given the existing and proposed control measures.
* Effects on fish - the area is a recognised spawning area for Norway pout, blue whiting, whiting, lemon sole, sandeels and herring, and a nursery area for haddock, Norway pout, blue whiting, lemon sole, mackerel and sandeels. However, the spawning and nursery areas are extensive and the proposals are therefore unlikely to have any significant impact on these species.
* Effects on seabirds - seabird vulnerability is variable throughout the year, ranging from low to very high. However, incremental impacts relating to the proposals are considered to be negligible, and appropriate mitigation measures will be in place to prevent accidental spills that could have a significant impact on seabirds.

 * Effects on protected habitats - the environmental baseline survey did not identify any new areas of Annex I habitat. The closest protected Annex I habitats are the Wyville Thompson Ridge and the Solan Bank Reef, located 107 km and 110 km respectively to the southwest of the development. The proposals are not expected to have any impact on these protected habitats.
* Effects on protected species - harbour porpoise, white-beaked dolphin, minke whale, Atlantic white-sided dolphin, bottlenose dolphin and common dolphin have been recorded in this general area with highest numbers recorded during the period of May to October. Whilst grey and common seals inhabit the coastal waters around the Scottish coast and have occasionally been observed to travel long distances when foraging, both species are unlikely to be present in large numbers at the Solan area. No significant impacts, including underwater noise impacts, have been identified that would be likely to affect any protected species.
* Effects on other users of the sea - the installation is situated within ICES rectangle 49E6, and relative fishing effort in the area is moderate, with low to moderate landing values. Shipping density in the vicinity of the proposed development is low, and there are no renewable energy or aggregate extraction areas in the vicinity of the development. As the proposed installation operations will involve vessels located within the existing 500m safety zones, impacts on other users of the sea are considered to be negligible. Appropriate navigational controls will be applied and it is not anticipated that there will be any significant additional navigational risk.
* Cumulative effects - no cumulative or in-combination impacts were identified following a full re-assessment of Solan project.

**Consultation**Marine Scotland (MS) and the Joint Nature Conservation Committee (JNCC) were consulted, and the proposals were subject to public notice.**MS**: MS confirmed that they had no objections to the change in the produced water treatment and discharge proposals.**JNCC**: JNCC indicated that they had no concerns in relation to the change in produced water treatment and discharge proposals.  No comments were received as a result of the public notice.**Further Information**A number of requests for clarification were raised by the consultees and by BEIS staff involved in the review of the proposals. Additional information was provided by Premier on 11 January 2017 and 28 July 2017 that satisfactorily addressed the requests.**Conclusions**Following its review of the proposals, the responses to the consultation additional information provided by Premier, the BEIS Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) is satisfied that the proposals are not likely to have any significant impact on the receiving environment, on any protected sites or species or on other uses of the sea. **Recommendation** On the basis of the information presented within the ES addendum and update, and the additional information provided by the applicant, BEIS OPRED is content to agree to the Oil and Gas Authority (OGA) issuing any necessary consent for the proposals, and can confirm that there are no environmental conditions that we would wish the OGA to attach to such a consent. Any conditions relating to the discharges of displacement water and produced water will be included in the necessary oil discharge permit that will be required under the Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005 (as amended). |
| Jonathan Ward 24/08/2017 ………………………………… ………………………….Jonathan Ward DateDirector, Offshore Environment Unit |