

**RWE DEA UK SNS LIMITED
CLIPPER SOUTH FIELD DEVELOPMENT
Environmental Statement Summary**

To: Wendy Kennedy

From: Tracy Edwards- Environmental Manager

Date: 04 March 2011

ES Title:	Breagh Development- Phase 1
Operator:	RWE DEA UK SNS Limited
Consultants:	
Field Group (DECC):	SNS- Ivor Newman/Alison D'arcy/Helen Hitchen
ES Report No:	D/4037/2008
ES Date:	18 June 2010
Block Nos:	42/13, (including 40/15, 41/11, 41/12, 41/13, 41/14, 41/15, 42/11, 42/12)
Development Type:	Gas Field (with some condensate)

Project Description

The Breagh development lies in the SNS *circa* 50 km off the North East Coast of England, with the UK/Dutch median line 200 km to the east of the installation. Water depths are approximately 61m. The Breagh Field life is anticipate to be approximately 30 years and will be developed initially by Phase I. Recoverable reserves for Phase I are 15.4 Bscm of gas, with a condensate to gas ratio of 2-2.5bbl/MMscf. The design capacity is 6.37 Msm³/day. Phase I will consist of 7 wells, producing 530Mm³ of gas per year with first gas planned for Q2 2012. The NUI will have 12 well slots to allow for future expansion into Phase II and multiple risers to allow for potential third-party tie-ins. Infrastructure for the development will consist of a Normally Unmanned Installation (NUI), a 100km offshore 20" concrete-coated export pipeline, a 3" chemical line alongside for the delivery of MEG and corrosion inhibitor and a separate fibre optic cable (FOC) for communications and control. The export pipeline ties back to the Teeside Gas Processing Plant (TGPP) via a 10km onshore section. Offshore construction and installation is planned between Q1 2011 and Q2 2012.

Seabed preparation for the pipeline routes include the use of a bespoke A-frame to clear away boulders. Dredging of a trench is necessary prior to laying lines in the nearshore section, including access dredging for the laybarge to manoeuvre. Spoil material from these activities will be deposited in a temporary, previously identified location then returned to re-instate areas.

Three boreholes will be drilled from onshore using Horizontal Directional Drilling (HDD) to guide each of the lines underneath the intertidal area to *circa* 1.2km out to sea (KP 103.4). Seaward of this, the 20" production line will be laid with the 3" chemical line in the pre-dredged trench. The trench will continue to the 40m depth contour at KP92. Beyond this, the 20" line will then be surface-laid for the remainder of the route, whereas the 3" chemical line will be laid then post-trenched. A separate trench for the FOC is considered the base case from the HDD exit point out to the NUI, although there may be an option to bury within the common trench for a short distance. Once pipelay is complete, spoil material from dredging will be re-instated at original locations. Hydrotesting of the pipelines will be required, resulting in the discharge of 70,000m³ of test water at the NUI from the export line and 500m³ from the chemical line. Rock dumping and

matteing is required at pipeline crossings. Contingency rock dumping has been estimated as 80,000 tonnes but considered unlikely. Installation of the lines is expected from March 2011 through to May 2011.

Drilling will commence in October 2011 and last for 455 days, using a 3 legged jack-up. Production is anticipated after the first two wells have been drilled. Operations will cover drilling, logging and completion. Both Water Based Muds (WBM) and Low-Toxicity Oil Based Muds (LTOBM) are anticipated to be used. Well testing is not anticipated at this time.

An on-shore environmental statement covers regulatory aspects above the Mean Low Water Mark (MLWM), with the offshore ES (this assessment) covering environmental aspects below the MLWM.

Key Environmental Sensitivities

The EIA process has identified the following environmental sensitivities:

- Fish spawning and nursery areas are identified in the area for cod, herring, lemon sole, mackerel, sprat, sandeel, plaice, Haddock, Whiting and *Nethrops*;
- There is very high seabird vulnerability in January, February and September. Although there are migrant species and wintering waterfowl in the vicinity, the development does not pass through any important bird areas;
- Cetacean numbers are low for the area, with harbour porpoises being the most frequently sited throughout the year;
- There is high to very high shipping density within the proposed development area;
- Fishing effort is low, focused on demersal species, including crustaceans along the pipeline route.

Key Potential Environmental Impacts

Potential impacts on the environment were documented in the ES and additional information provided.

1. Physical Presence of the Drilling Rig and Stabilisation

- ***Spud Cans***

The placement of the spud cans of the jack-up rig on the seabed will disturb localised areas of seabed, totalling 775m². Where existing spud can footprints are evident the rig will re-position within these which minimises any further impact. Drilling of all seven wells will be a continuous phase and therefore, there will not be multiple rig moves. Following exit of the rig, imprints are expected to infill rapidly given the sediment flux of the area. Any residual impact will be of comparatively short-term duration, and recovery to pre-impact levels is likely to take place through immigration into the disturbed area.

- ***Rig Stabilisation***

Contingency deposits of up to 9000 tonnes are planned in the event that depression infill is required prior to settling. If scour is experienced, up to a further 1,800 tonnes may be deposited around the spud cans. Smothering of habitats and disturbance to sediments is likely. However, deposits will be highly localised. Although sediment changes and habitat loss will occur, it is anticipated that these would be short lived. Rig stabilisation has not previously been required for the area so the contingency is deemed unlikely.

2. Drilling Discharges

- ***Discharge of WBM***

Water Based Muds have typically low toxicity and the majority of the constituent chemicals are PLONOR rated. Therefore the discharge of WBM is unlikely to cause any

significant contamination.

- **Discharge of cuttings**

The well programme indicates top-hole sections will be drilled with WBM, with 125m³ of cuttings discharged directly to the seabed and 502 m³ of cleaned cuttings discharged overboard for each well. Deposits will result in smothering of benthic organisms and temporary elevations of barium in the sediment. Impacts are not deemed to be significant as modelling indicates impacts are restricted to within 500m of the NUI. It is anticipated the currents and tides in this area will further mitigate impacts and recolonisation of benthos is expected to be rapid. The bottom-hole sections (8 ½") will be drilled using LTOBM. A total of 714 m³ of cuttings will be skipped and shipped to shore for treatment and/or disposal with 1694m³ of OBM.

- **Atmospherics**

Carbon dioxide emissions from drilling activities represents <1% of the UKCS platform emissions. Impacts are not considered to be significant, given that the development is 50km from shore and that the totals predicted are comparatively small.

3. Installation of Normally Un-Manned Installation

The NUI will exclude 204m² of the seabed by virtue of the NUI feet touchdown. Whilst this is a long-term loss of habitat, the impact on habitats and sediments is considered negligible in scale.

- **Noise:** Piling of the NUI will be undertaken over a 10-day period, for a worst case scenario of 12 piles although piling typically takes 6 hours per pile. Cetacean activity in the area is not considered high and potential Impacts will be mitigated using a soft-start and a marine mammal observer will be present to ensure the JNCC piling guidelines are followed.
- **Fishing:** There will be a decrease in the area available for commercial fishing due to the exclusion zone around the installation, but this is considered negligible, given the scale of this exclusion and the wider area available for fishing.
- **Shipping:** Activity is considered to be high to very high, but the collision risk is not significant given that there will be an exclusion zone in place, which will be marked on Admiralty charts and standard markings will be applied.
- **Deposits:** It is anticipated that tie-in spool protection of 50 mattresses and 100 grout bags would be required, impacting a seabed area of 0.00095km². Given that this is wholly within the safety zone and the deposits are limited, this activity is considered negligible.

4. Installation of the 20" export line, 3" chemical line and FOC

- **Boreholes;** Drilling of the three boreholes may result in the worst case discharge of 3,680m³ of WBM. The majority of the chemicals are of low toxicity and not expected to be a significant issue given the dispersal potential of the receiving environment.
- **Wrecks:** A number of wrecks were identified within the pipeline corridor, however, none were of historical significance and those closest to the pipeline route were outwith any zone of impact, given the use of the dynamically positioned lay-vessel in those areas.
- **Removal/deposit of seabed material:** Access dredging is required over an area of 0.25km² of seabed and nearshore trenching will impact an area of 0.364km². This material will be temporarily stored in a pre-defined area south of the pipeline route, and will be re-instated within 3 months. Whilst smothering and habitat loss is likely, sufficient adjacent habitat exists to facilitate recovery and no long-term impacts are expected either from the removal or deposition. As the material is to be stored during spring, it is not anticipated that substantial volumes will be lost. RWE DEA UK SNS Ltd have also committed to re-instating the seabed to original levels to eliminate any residual

navigational hazards.

- **Pipelays:** Laying of the pipelines and FOC will impact up to 4.588 km² of seabed. Two of the lines will be laid and then backfilled, re-instating the physical characteristics of the seabed, with potential for rapid recovery from adjacent areas, where similar benthos is present. However, the physical presence of the surface-laid 20" concrete coated export line means the seabed will not recover to its original benthic community. This is not deemed significant, given the wider ubiquity of benthic communities and expanse of soft substrate in the area. The concrete coating negates having to trench the line for the majority of its length, though it will be trenched for shallow waters up to KP 92 to mitigate the potential for snagging risks to smaller inshore vessels. However, the pipeline is deemed over-trawlable for larger vessels further offshore and should not represent a significant hazard.
- **Anchoring:** The Tog Mor will undertake the shallow water trenching, using anchors. Seabed disturbance from anchor mounds is expected to total 0.2km². but are not expected to persist. The deeper waters will be trenched using the dynamically positioned Lorelay.
- **Pipeline crossings:** There are 2 cable crossings for each line, with a total requirement for 12 mattresses, 18,000 tonnes of rock and 100 grout bags. Whilst this represents a permanent change, the scale and nature of the impact is not considered significant.
- **Contingency Rock dumping:** Whilst rock dumping is not considered likely, 80,000 tonnes of rock have been assessed as a contingency for untrenchable sections, where freespans develop or where upheaval buckling is experienced. If needed, this would represent a permanent change to the soft substrate in the area, supporting an epifaunal community rather than the incumbent infaunal habitats. The pipeline routes have been optimised to determine the most amenable routing according to soils analysis and mitigation measures include the trialling of trenching equipment to ensure optimal settings during installation. The surface-laid export line is unlikely to experience upheaval buckling due to the concrete coating.
- **Hydrotesting:** Hydrotesting is not expected to have a significant effect as the chemicals used will be chosen for minimal impact on the environment. Hydrotest fluids are expected to be rapidly diluted and dispersed within the 60m water depth at the Breagh A NUI location.
- **Atmospherics:** Emissions from all installation activities represent a small percentage of UK domestic shipping emissions as is therefore considered not significant.

5. Operational Phase

The exclusion zone for installation will continue for operations.

- **Marine Discharges:** There are no planned discharges offshore from the Breagh Development. Produced water will be exported via the production line for separation and treatment at the TGPP onshore. MEG and corrosion inhibitor will be delivered via the closed loop 3" line. Open drains will discharge rain water to sea.
- **Atmospherics:** Power generation provisions are for a maximum of 3 (47KW) diesel generators. Fuel consumption is anticipated at 50 tonnes/year. Although there will be incremental emissions from this requirement, they are not considered to be significant over the lifetime of the field. Blow-down of topsides is considered negligible.

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

Consultee(s):

JNCC drew attention to:

- Ensuring realistic rock dumping scenarios are used in the impact assessment
- Full assessment of the potential for Injury and disturbance offences as a consequence of proposed operations, including demonstration of the efficacy of mitigation measures.
- Assessment of in-combination effects of inshore construction noise from other projects.

CEFAS commented that although there are advised restrictions in place for drilling, survey data indicates that there is little or no potential for herring spawning. Chemical usage is considered conventional as outlined in the ES. On this basis, they would be content for DECC to grant approval of the ES.

MMO highlighted interaction with fisheries activity, including nearshore potting and gill netting, and the risk of damage to the pipeline from anchoring and trawling activities

NFFO commented on the potential vessel hazards during installation and seabed hazard during operation. However, both communication and mitigation measures were considered positive.

Further Information: In addition to the consultee DECC requested RDUK present clarification and in some cases, additional evidence, to support several conclusions made in the ES and regarding amendments made to methodologies. Responses received from RDUK were satisfactory.

Conclusion(s):

Following consultation and the provision of the additional information on the 25 January 2011 and on the 18th and 24th February 2011, DECC and its consultees are satisfied that this project is not likely to have a significant impact on the receiving environment, including any sites or species protected under the Habitats Regulations.

Recommendation(s):

On the basis of the information presented within the ES and advice from consultees it is recommended that the ES should be approved.

Wendy Kennedy

04/03/2011

.....
Wendy Kennedy

.....
Date