1. Header – Licence Summary

Licence Number: P.1677
Licence Round: 25th Seaward Licensing Round
Licence Type: Traditional
Block Number: 49/3
Licence Holder: Venture North Sea Gas Ltd.
Licence Date Award: 12th Feb 2009
Work Programme: Drill or Drop decision required by DECC after 2 years

2. Synopsis – Licence Status

Block 49/3 lies in the transition zone between the overlapping Upper Carboniferous play fairway and the north eastern edge of the Leman Sandstone play fairway of the Southern North Sea. The block is located immediately south of the Ketch Field and one block west of the Chiswick Field (Fig. 1).

The licence was acquired in February 2009 as a Traditional licence in the 25th Licensing Round. The licence operator was Venture North Sea Gas Ltd. (part of the Centrica group), with Volantis Exploration Ltd. as a partner holding 10%.

After re-mapping and analysing the block in detail, the partnership found two structures at the base Permian level, both containing undeveloped discoveries. However, due to the modest size of these structures and the risk attached to the discoveries, the partnership has elected to relinquish the licence.
3. Exploration Activities

Block 49/3 was mapped using a PGS 3D dataset. The main horizons interpreted were Top Chalk, Base Chalk, Top Haisborough, Top Bunter Sandstone, Top Zechstein, Top Rotliegendes, Top Carboniferous, Base Ketch and Near base Westphalian B. These surfaces were used to construct an 8-layer model for the depth conversion. Considerable care was taken with the velocity variations caused by the Zechstein overburden.

4. Prospectivity Analysis

4.1. Structure

Block 49/3 lies on the south western flank of the NW-trending Caister-Murdoch Ridge. This ridge contains several large gas fields, such as Caister, Murdoch, Chiswick and Markham.
The geological structure at Top Rotliegendes level in Block 49/3 is characterised by NW-trending faults resulting in a number of fault blocks that contain the KetEx and Yawl Discoveries (Fig. 2).

Fig. 2, Top Rotliegendes depth map showing the prospectivity in Block 49/3. The identified undeveloped discoveries are KetEx (1) and Yawl (2). Red line depicts the eastern extent of Ketch Fm subcrop.

### 4.2. Reservoir

The primary reservoir in this part of the Southern North Sea is the Westphalian A-C sands of the Late Carboniferous. These formations are proven reservoirs in several nearby fields, including Chiswick (Westphalian A), Murdoch (Westphalian B) and Ketch (Westphalian C & D). The secondary reservoir in this area is the Leman Sandstone of Rotliegendes age. The nearest gas field producing from this horizon is Markham. The Leman Sandstone is likely to be present over much of Block 49/3 but is relatively thin and of questionable reservoir quality.

The KetEx Discovery (short for Ketch Extension) was tested by Well 49/3-3, which flowed gas at 67 mmstcf/d from Upper Carboniferous sandstones. These are probably early Westphalian C in age, as they lie immediately east
of the mapped extent of Westphalian C & D Ketch Fm subcrop (Fig. 2). Data suggest that the Westphalian gas-charged reservoir may be in contact with the overlying Leman Sandstone (Fig. 3), and this poses the question of what the trap geometry for this gas accumulation is.

The Yawl Discovery is a tilted fault block that was tested by Well 49/3-1, and was found to have thin gas-charged Ketch Sandstones and Westphalian B/C sandstones, although the volumes are small (Fig. 4).

Fig. 3, Seismic strike line through the KetEx Discovery.

4.3. Seal
The Zechstein halites provide the regional seal in the Southern North Sea basin. There is no indication of seal breaching across any of the faults in the licence area. Risk of leakage from the prospects is therefore small.

4.4. Risking
The main risks in this area are: 1) presence and effectiveness of Leman Sandstone reservoir, 2) effectiveness of Carboniferous reservoir, and 3) trap robustness. Some communication and/or leakage between reservoirs is also predicted, e.g. between the Carboniferous and Leman Sandstone formations of the KetEx Discovery.
Fig. 4, Seismic dip line across the Yawl Discovery.

### 4.5. GIIP

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<th>Prospect</th>
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<th>P50</th>
<th>P10</th>
<th>gPoS</th>
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<td>41 bcf</td>
<td>61 bcf</td>
<td>100 %</td>
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<tr>
<td>Yawl (Ketch &amp; West C-B)</td>
<td>&lt; 10 bcf</td>
<td></td>
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#### 5. Well Abandonment

In accordance with the licence requirements, the partnership has decided not to drill a well and to relinquish Block 49/3.

#### 6. Clearance

Approval has been obtained from PGS for the inclusion into this report of the seismic lines shown in figures 3 and 4.