1. Header

Licence Number: P1597
Licence Round: 25th Round
Licence Type: Traditional
Block Numbers: 206/5b and 207/1b
Partners: Valiant 50% and Sussex Energy 50%

2. Synopsis

P1597 is a traditional 25th Round Licence, which commenced on 10th January 2011. P1597 consists of West of Shetlands blocks 206/5b and 207/1b, as shown by Figures 1 and 2. Valiant held 50% equity interest, with Sussex Energy holding the remaining 50%. The terms of the licence comprised:

- **Firm:** To shoot 200km of 2D seismic data.
- **Drill-or—drop Commitment:** Drill one well to 2300m subsea to evaluate the Albian-Turonian sandstones, or elect to allow the licence to automatically cease and determine on the second anniversary of the date of the licence.

The firm licence commitments have been fulfilled and the P1797 JV has made the decision not to continue the licence beyond the 2nd year in accordance with the two year drop commitment.

3. Exploration History

The first well 207/1-1, was drilled in the area by Texaco in 1977, since then four wells have been drilled within the licence area 207/1a-4, 4Z, 206/5-1 and 206/5-2 with a further four wells within the licence blocks 206/5a-3, 207/5-2, 207/5-3 (the Victory gas discovery) and 207/5a-5 (Figure 2). Conoco drilled 206/10-1 (the Freya discovery) in 1980. This well was drilled on the crest of the Rona Ridge, along strike from the Clair Field finding a thick oil column in Devon-Carboniferous, Clair Group and Cretaceous, Whiting sands. However at 13°API the oil was immobile and served to demonstrate the importance of the second oil charge seen at Clair in the overall mobility of the mixed oil phase.

Total drilled the Edradour discovery with 206/4-2 in 2010. This well found gas and condensate in Cretaceous sands.

206/5a-3 the Fulla discovery, was drilled by Faroe Petroleum in 2011. This well targeted a continuation of the Rona Ridge crest between the Freya oil discovery and the Victory gas field. The well found an oil column in the Clair and Whiting sands and although the oil was described as being lighter than at Freya the licence was relinquished.

The P1597 licence group undertook a large 3D seismic reprocessing project resulting in significantly improved imaging at depth and facilitating the consistent mapping of the Cretaceous sand prone intervals.
Pre-existing seismic, gravity and magnetic data over the licence Blocks were also accessed. Full pre-stack seismic inversion was used to further define the distribution of the Albian to Santonian Cretaceous sands and potential field data used to locate sill intrusions that occur at Cretaceous level in this area and also to aid in mapping subsidiary cross-cutting faults which are difficult to image on seismic data.

Figure 1: Location of Blocks 206/5b and 207/1b, West of Shetland

Figure 2: Location of Blocks 206/5b, 207/1b with Fields, discoveries and key wells.
4. Prospectivity Analysis

Four play fairways are recognised within the P1597 licence area:

1. Devono-Carboniferous Clair Group sands on the crest of the Rona Ridge
2. Aptian-Albian and Cenomanian-Turonian submarine slope fans to the NW of the Rona Ridge and within the Flett Basin
3. Aptian-Albian and Coniacian-Santonian submarine fans to the SE of the Rona Ridge within the West Shetland Basin
4. Palaeocene, Flett Fm channel sands

Oil is the expected hydrocarbon although where there is shallow burial there is a risk of biodegradation as seen in the nearby Freya and Fulla wells.

The principle prospect identified in this licence is found in the Aptian-Albian and Coniacian-Santonian play fairway where the sands pinch-out onto the crest of the Rona ridge.

Rusper Prospect

The Rusper prospect is formed by a stratigraphic pinch-out of Victory Fm, Aptian-Albian age and/or Coniacian-Santonian sands onto the crest of the Rona Ridge (Fig 4).

Reservoir:
The mid Cretaceous sands are sourced from the West Shetland platform and enter the basin at entry points along the Spine Fault. From these points the sands fill the W Shetland Basin axially with transport in the Rusper area towards the SW. These sands are turbiditic away
from localised fault scarp fans associated with the Spine Fault and retain very good reservoir properties due to limited burial. The sand intervals are commonly associated with overlying limestones reflecting periods of movement and quiescence on the Spine Fault. The hard limestones mask and confuse the seismic response from the softer sands making confident recognition of fluids effects problematic. The sands are buried at a relatively shallow depth, and so may have retained good reservoir properties.

**Seal:**
Mapping on the 3D seismic data indicates that the Rusper closure is primarily formed by stratigraphic pinch-out onto the crest of the Rona Ridge block and dip closed into the axis of the W Shetland half-graben. The Coniacian-Santonian sand interval found in well 206/10-1 demonstrates thinning towards the upper edge of the Block while the absence of Aptian-Albian age sand in this well infers these older sands to have thinned out completely providing a pinch-out seal. Regardless, should the sands continue as far as the main Rona Ridge fault the draping Campanian shales are expected to provide effective seal on the downthrown side.

**Trap Type:**
The trapping mechanism for the Cretaceous reservoir within Rusper is apparently a pinch-out of Aptian-Albian or possibly Coniacian-Santonian sands. The latter are seen poorly developed in 206/10-1 beneath the base of Campanian shales, which form the top seal.

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**Figure 4:** Geoseismic line through Rona Ridge showing the Rusper prospect

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**5. Reserves Summary**

The Rusper structure has an estimated accumulation of 241 MMbbls mean reserves. The structure has 154 Mmbbl mean reserves on Block 206/5a, and 87Mmbbl in 207/1b.

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**6. Clearance**

Valiant confirms DECC is free to publish this report and that all third party ownership rights have been considered and appropriately cleared for publication purposes.