1. License Information

License: P1194 (Traditional License)
Location: Blocks 213/22, 23 & 28
Awarded: 22nd UK Licensing Round

Equity: Chevron North Sea Limited (Operator) 40%
Statoil (UK) Ltd 30%
OMV (UK) Ltd 20%
DONG E&P (UK) Limited 10%

Work Programme:
1) Within two years of the beginning of the Initial Term, the Licensee shall obtain 300km of 2D seismic data.
2) The Licensee shall drill one well to a depth of 3100 m or to the Base Tertiary, whichever is shallower (drill or drop commitment).

Drill/Drop Deadline: 30th October 2008
License Extension: 30th November 2011 (firm well commitment made)
License 2nd Term: 30th November 2012
Well Spud: 3rd November 2011
Well P&A Date: 4th March 2012

2. License Synopsis

UK offshore license P1194 was awarded to Chevron, Statoil, OMV and DONG E&P through the 22nd Licensing Round on 1st December 2004.

The acreage was awarded under a Traditional License, with a firm commitment to obtain 300 km of 2D seismic data along with a drill or drop commitment to drill one well to a depth of 3100 m or to the base Tertiary, whichever is shallower. In 2008, a commitment was made by the partnership to drill one well as per the work program which led to a 2 year license extension. This was extended by one year due to delays in the rig schedule to 1 December 2011. The Aberlour exploration well was spudded in November of 2011, thus allowing the license to continue for a further two years.

Having completed the license work programme and technically evaluated the remaining prospectivity within the licensed area following results of Well 213/28-1, the partnership agreed to relinquish 50% of the P1194 license as of 4th June 2012 (3 months after end of well operations), and full relinquishment on 30 November 2012 (end of 2nd term).
3. Work Programme Summary

The required work program for the license included:

- **Obtain 300 km of 2D seismic data:** 334 km of long offset 2D Over/Under seismic data were acquired across the license through the West of Shetlands O/U Acquisition Programme in 2006. Example given below (Figure 1).

- **Drill or drop commitment:** At the end of the initial license term, the licensees committed to a firm well and the license period was extended by two years. Due to drilling delays, DECC granted an additional one year extension to 1 December 2011. The well was spud in November 2011 reaching TD in February 2012. The well was drilled to a depth of 3422m MD, greater than the required depth (3100m) as specified by DECC. The well Summary is detailed below.

**Acquired Seismic Examples**

![Seismic line between Rosebank, Aberlour and Laggan, proprietary over under 2D line.](Figure.1)

As part of the work programme 334km of long offset 2D data was shot over the license block and surrounding areas. Above is WOS-OU-41.

The over under seismic data in conjunction with the non-proprietary 3D mega merge survey were of sufficient quality to delineate the prospect. However, significant uncertainty still exists around the depth conversion of the data due to highly variable velocities in the overburden and volcanics.
## Well Summary

<table>
<thead>
<tr>
<th>Well</th>
<th>213/28-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospect name</td>
<td>Aberlour</td>
</tr>
<tr>
<td>Well classification</td>
<td>Exploration Wildcat</td>
</tr>
<tr>
<td>Drilling rig</td>
<td>Stena Carron Drillship</td>
</tr>
<tr>
<td>Well Spud Date</td>
<td>3rd November 2011</td>
</tr>
<tr>
<td>Well TD Date</td>
<td>13th February 2012</td>
</tr>
<tr>
<td>Well P&amp;A Date</td>
<td>4th March 2012</td>
</tr>
<tr>
<td>Water Depth</td>
<td>1077 m / 3532 ft.</td>
</tr>
<tr>
<td>Rig Floor Elevation (Above MSL)</td>
<td>32 m / 105 ft.</td>
</tr>
<tr>
<td>Target Reservoirs</td>
<td>Late Eocene, Hildasay Member Sandstone, Late Paleocene, Colsay Member Sandstone</td>
</tr>
<tr>
<td>213/28-1 TD Depth</td>
<td>11,228 ft. MD / -11,120.9 ft. TVDSS</td>
</tr>
<tr>
<td>Well Status</td>
<td>Plugged and Abandoned</td>
</tr>
</tbody>
</table>

The Aberlour exploration well was spudded on the 3rd of November and reached TD on the 13th of February 2012 (122 days). A significant proportion of this time was non-productive due to weather and the removal of a WW2 mine from near the wellhead.

The well encountered a Hildasay succession approximately 350 feet shallower than pre-drill estimates. The interval comprised of siltstone and claystone intervals with thin limestone stringers. Four discrete sandstone intervals were encountered with a gross thickness of 60ft, 14ft, 17ft, and 52ft, respectively (net to gross 85%). The average total sandstone porosity was 25%, consistent with Hildasay sands at Rosebank and Cambo. There were no shows recorded and the total gas reading peaked at 0.064%.

The Colsay sands were approximately 500 feet shallower than prognosis. Highly variable volcaniclastic sediments and crystalline basalt successions were interbedded with 4 separate siliciclastic sandstone intervals, 36ft, 14ft, 17ft, 21ft and 65ft respectively (average sandstone net to gross was 60%). The average total porosity of the sands is 23%, again consistent with those encountered at the Rosebank Field. No shows were recorded in the cuttings and the total gas reading of 0.1%.

The Vaila formation was penetrated but contained no reservoir and no hydrocarbon shows.
4. Database

Seismic
Seismic data used in prospect interpretation (Figure 2)

![Seismic Data Used](image)

Figure 2. Base map indicating seismic data that was used in the interpretation of Aberlour.

Well’s
The Rosebank and Cambo offset wells were used extensively for seismic surface ties as well as predicting reservoir parameters / lithologies. The key wells are; 213/27-1z, 213_27-2, 213/27-3, 213_27-4, 205/5-1, 204/10-1, 204/10-2, 204/10-3, 204/10-4 and 205/5a-1
5. Prospectivity Update

Figure 3: Map indication the location of the P1194 License, the Aberlour prospect and the exploration well 213/28-1

Predrill Assessment

The license contains three blocks to the north and east of the Chevron operated Rosebank Field (Figure 3). Several prospects were identified, the two most attractive were named Lochside and Aberlour. Well results from 213_27-3 made the northern prospects higher risk, thus Aberlour was selected as the preferred alternative.

The Aberlour prospect is a four way dip closure approximately 15km east of the Rosebank field within the Flett Sub-basin of the Faroe Shetland basin. The four way closure exists at three prospective stratigraphic intervals. These intervals are; the Eocene (T45) Hildasay shallow marine sandstones, the Eocene/Palaeocene (T40) Colsay intra-volcanic sandstones and finally the Paleocene (T36 & T38) Lamba and Vaila deep marine sandstones (Figure 4). Discoveries have been made locally at these intervals in Cambo, Rosebank, Laggan and Tormore (Figure 5).

For all three intervals the prognosed source rock was the Late Jurassic Kimmeridge Clay formation. The nearest confirmed well penetration of the source rock is in the Rosebank discovery well 213/27-1z. The expected hydrocarbon phase was expected to be gas, based on basin modelling work and nearby discoveries at Laggan and Tormore.
The sealing lithologies were expected to be Cambo Formation claystones at the Hildasay Level, Intra reservoir shales and volcanics at the Colsay level and Upper Vaila and Lamba mudstones at the Vaila and Lamba intervals.

The pre-drill combined chance of success for the Hildasay and Colsay intervals at Aberlour was 24%. The critical risk element being charge as the model required ‘hotelting’ of the fluids in the Jurassic fault blocks before re-migrating into the younger Oligo-Miocene Aberlour structure along sub seismic faults.

The deeper Vaila and Lamba sandstones were believed to be even higher risk due to the limited structural closure and uncertainty on reservoir presence.

**Pre-drill resource assessment**

<table>
<thead>
<tr>
<th>Prospect/Lead Name</th>
<th>Stratigraphic Level</th>
<th>Un-risked Resource (P10)</th>
<th>Un-risked Resource (P50)</th>
<th>Un-risked Resource (P90)</th>
<th>Chance of Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aberlour</td>
<td>Eocene/Palaeocene</td>
<td>11</td>
<td>33</td>
<td>98</td>
<td>24%</td>
</tr>
</tbody>
</table>
Post-drill Assessment

Post 213_28_1 a new velocity model was constructed and the seismic was re-picked using the new well data. There was a significant difference between the prognosed formation tops and those encountered in the well, as such all the formations were re-interpreted significantly shallower. Figure 6 shows the difference in the Top Volcanics pick between the pre-drill and the post drill assessment. Figure 7 indicates the pre-drill assessment of the Top Balder on seismic, along with the 213_28-1 well tops. The pre-drill velocity model did not anticipate the velocities in the overburden at Aberlour as being as slow as they were, thus a discrepancy of 253ft was encountered at Top Balder. However, re-mapping of the structure post well indicated that the four way closure still existed, despite the velocity uncertainty.

The well was deemed to be a failure principally due to lack of charge, specifically, remapping of the structure post well indicated that it formed later than initially thought. Thus, the structure was most likely not charged as it had formed after the peak generation from the basin below.
Figure 6. Depth maps of the Aberlour prospect, predrill and post drill for the Top Volcanics/Base Hildasay interval.

Figure 7. Seismic line showing the surface tie between Rosebank and Aberlour. The 213/28-1 well is shown with Density and Sonic logs – note the difference in depth conversion between the pre well top balder and the post well top balder.
6. Further Technical Work Undertaken

In addition to the required work programme, a number of other studies were also completed by the license partnership including:

- **Additional 3D seismic data:** 78km² speculative 3D seismic data was purchased from PGS in 2007 to compliment Chevron’s 2-D Over-Under acquisition and to infill existing 3D to better characterise the subsurface geology. Additionally, a subset of these data was reprocessed for drilling hazard analysis.

- **Volcanology and Palynology:** An analysis of the well stratigraphy from 8400ft to 11228ft based on the ditch cuttings assemblages was performed by the University of Aberdeen. The volcanic section was analyzed using the University of Aberdeen ditch cutting analysis approach designed specifically for wells that penetrate flood basalt sequences. This approach was expanded to incorporate the non-volcanic stratigraphy.

- **Velocity model update:** The VSP data from the well and updated regional surfaces were incorporated into a revised regional velocity model.

- **Petrography/XRD RCAL:** Core Lab was commissioned to perform conventional core analysis work including porosity, permeability and grain density measurements, XRD analysis, thin section analysis, modal analysis, and optical description of sidewall cores.

- **Fluid Inclusion Stratigraphy and petrography:** Fluid Inclusion Technologies (FIT) performed an analysis of cuttings in the well for organic and inorganic fluid species trapped within inclusions, to help identify potential petroleum migration, reservoir filling, diagenesis, and to help constrain the basin model.

- **Heavy Mineral Analysis:** Analysis of heavy mineral for stratigraphic analysis

7. Risk and Resource Summary

The remaining resource in the license is listed below.

<table>
<thead>
<tr>
<th>Prospect/Lead Name</th>
<th>Stratigraphic Level</th>
<th>Un-risked Resource (P10)</th>
<th>Un-risked Resource (P50)</th>
<th>Un-risked Resource (P90)</th>
<th>Chance of Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lochside</td>
<td>Jurassic</td>
<td>16</td>
<td>45</td>
<td>132</td>
<td>13%</td>
</tr>
</tbody>
</table>

8. Conclusions

**Remaining Prospectivity**

The rotated pre-Cretaceous fault block, believed to be Jurassic, beneath Aberlour was not tested. It may be analogous to the Lochnagar discovery to the west however, it is considerably deeper thus reservoir quality is a concern.
Upper Jurassic Rona sands may also be prospective elsewhere within the block. The Lochside prospect (Figure 3) is a 3 way dip closed rotated fault block. Concerns exist due to timing of fault movement and the presence paleo-oil column observed at the neighbouring Eribol prospect. Equally, the Jurassic reservoir quality and distribution is poorly understood due to the limited number of well penetrations at the Jurassic level.

**Reason for Relinquishment**

After the results of 213/28_1 Chevron and its partners wish to fully relinquish the P1194 license. The additional prospectivity that exists in the license is too high risk at this time and may be reassessed in future as technology and our understanding of the basin improves.

**9. Clearance**

Chevron North Sea Limited as the submitting Operator acting for and on behalf of the former P1194 Licensees confirms that DECC is free to publish this P1194 Relinquishment Report and that all 3rd party ownership rights (on any contained data and/or interpretations) have been considered and appropriately cleared for publication”.

**10. Maps and Figures**

Seismic Correlation between Rosebank and Aberlour.
Hildasay Depth map indicating 4 way closure at Aberlour
Depth Structure Map of base Volcanics, pre and post well.

Base Volcanics – Depth Structure Maps

2006 Interpretation – 2006 Velocity Model

2012 Interpretation – 2012 Velocity Model