PL 1050 Licence status report

Summary

See Chapter 5.

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1 Key licence history

Production license PL 1050 is situated within the Tampen Spur between the Statfjord Main Field, Statfjord Øst and Borg fields and contained the prospects Sprocket Øst, Sprocket Vest, Sprocket Sør and the Flipper lead. All prospects are within the Late Jurassic Draupne Formation sandstones, referred to as the Munin Members.

The PL 1050 license was awarded to Equinor Energy AS (44.33688%), Spirit Energy Norway AS (34.29595%) and Vår Energi AS (21.36717%) in 2020. Driver for applying the new license was identification of Borg analogue Upper Jurassic potential. The SFC platform well 33/9-C-2 A targeted the Sprocket Sør prospect was drilled in 2020.

The well encountered no reservoir in the Viking Gp. and disproved the Viking Gp. play in the target area. The lack of Upper Jurassic sands or silts in the Sprocket well significantly reduced the Sprocket Vest and Øst potential and these segments are no longer regarded as attractive prospects.

Remaining potential in the PL 1050 licence is regarded as low. The Flipper (Upper Jurassic) and Lower Shetland are two leads that have been identified partly within the PL 1050 licence area. Recent mapping of Top Lower Shetland show that the PL 1050 area is outside the four-way dip closure at this level.

2 Database

The main seismic survey used is the ST9703r16. The survey was acquired in 1997 and reprocessed in 2016. Other surveys covering the area are shown in Figure 2.

Main reference wells (in addition to the exploration well 33/9-C-2-A) are 34/7-21 A, 34/7-21, 33/9-15, 33/9-C-16 A, 33/9-C 27, 33/9-7, 39/9-9 and 33/19-C 19 AT2 from Statfjord Field, Statfjord Øst Field and Borg Field.

3 Review of geological framework

The Sprocket prospect was based on the potential for Draupne Sand between Statfjord Field and Statfjord Øst field. The reservoir sands were believed to be eroded sediments from Statfjord Øst or Snorre field area and transported into the area as turbidites or by shallow marine processes (Figure 3). Interpretation of the new reprocessed seismic (ST9703R16) increased the possibility of sand presence in the area (AVO response) from 20-40% to 80%. Seismic modelling and the field Borg indicate a potential sand thickness of 15-35m. The trap is stratigraphic (as in Borg). Migration of hydrocarbons is from the Statfjord field (Sprocket prospect situated shallower than the deepest oil in Statfjord field). Probability for a discovery was estimated to be 29%.

4 Prospect update

Sprocket prospect
The 33/9-C-2 A well was drilled in December 2020 from the Statfjord C platform. No reservoir, Intra Draupne sand (Munin Mbr), was encountered in the well. Draupne Fm. comprising of a 39 m TVD thick shale package (Figure 3). No shows. TD was set 16 m TVD into Heather Fm. TD was set at 2693 m TVDSS. Results influence sand probability in Sprocket Vest and Sprocket Øst.

Other Upper Jurassic potentials
The Flipper lead (Figure 4) was identified in 2004. Estimated STOOIP was 12 MSm3(Mean) and P(discovery) 4.8%. Probability of reservoir presence was 20%. Flipper was re-evaluated 2009/2010 with respect to volume and risk. Volumes was increased, but P(discovery) was lowered to 1.2%. This was mainly due to chance of sand presence. Source/migration were also considered complex and uncertain. Flipper area was relinquished from PL 037 in 2010. The Flipper lead was evaluated again in the license extension application in 2019. STOOIP was estimated to 2.6 MSm3 (Mean) and P(discovery) was estimated to 14%. Probability of reservoir presence was set to 40%. Lack of reservoir in Sprocket influences P(reservoir) in Flipper regarding intra Draupne sand. Potential of sand might still exist in Heather Fm. but is highly uncertain. Lack of seismic anomalies (AVO) in current seismic volumes is not in favor of sand presence in Heather Fm. Suggested probability for presence of reservoir was reduced from 20% to 7% for the Flipper lead.

Other potentials
Prior to relinquishment in 2010 the area was re-evaluated and presented to the partners in the PL 037 EC Meeting 08.09.2010. Some new interpretation was necessary, but mostly existing exploration interpretations and official interpretations from Statfjord Unit and PL089 area were used. No structures of significance were identified. Remaining Jurassic and Triassic potential is regarded as low as identified closures are generally small and high risk with respect to trap, seal and migration.

Lower Shetland (Kyrre Fm) closure is outside PL 1050.

5 Conclusions

The 2019 application was driven by the identification of the Sprocket prospect. The area represents a structural low and traps within this area are stratigraphic similar to the Borg northwest field. The lack of sand in this area has significantly impacted the prospectivity within the license. The remaining potential in PL 1050 license is regarded as low and the remaining lead(s) are considered to have high risk and no seismic anomalies have been identified. The partnership has decided to relinquish the PL 1050 license.

FIGURES

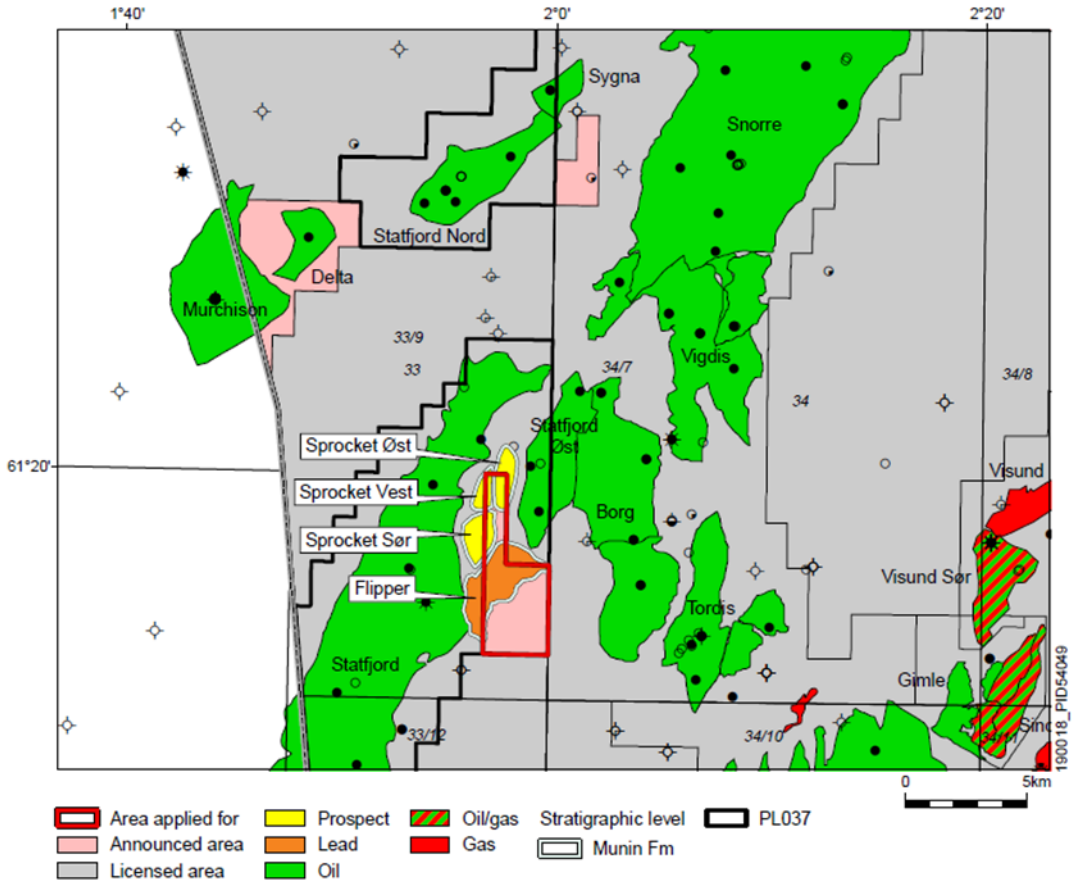

Figure 1 Overview of the Sprocket prospects.

Licence location map

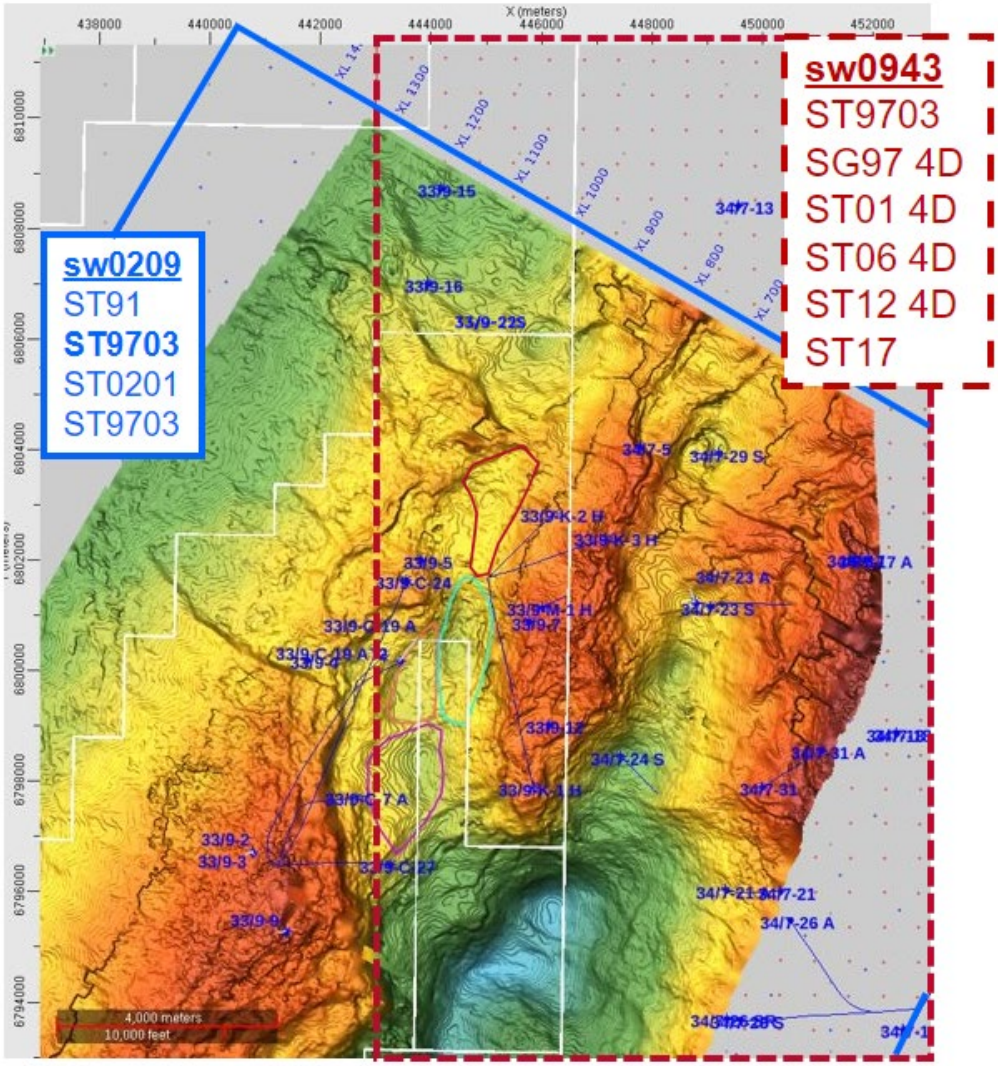

Figure 2 License overview map with seismic database, discoveries, wells, prospect outline. Most of the production wells on the Statfjord Fields are not included in this figure.

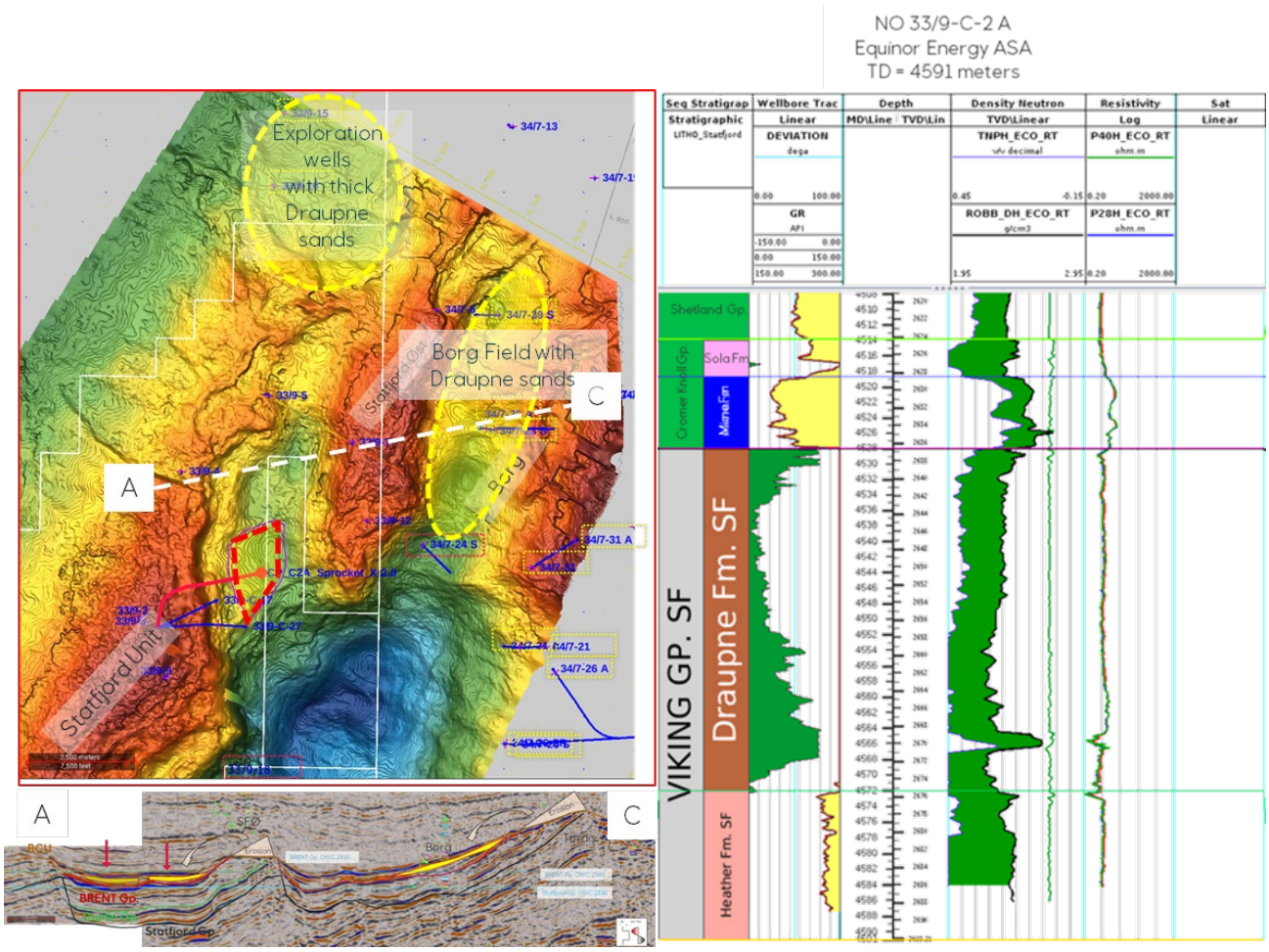

Figure 3 Upper left: BCU map showing yellow areas where Intra Draupne sands has been encountered and the Sprocket prospect (red polygone) in the "valley between Statfjord and Statfjord Øst Fields). Lower left: Geoseismic cross section from "Sprocket valley" to "Borg valley" were oil is produced from Intra Draupne sands. Right: Logs from 33/9-C-2 A (Sprocket well) showing absence of sand in the Sprocket prospect.

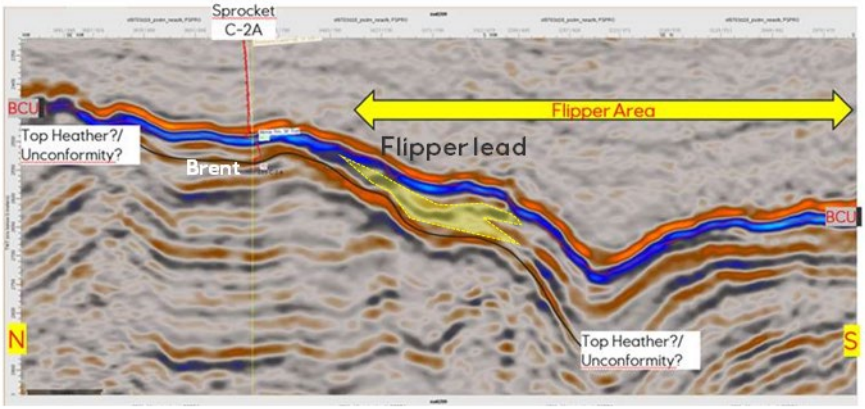

Figure 4 Flipper lead downflank of the Sprocket well.