PL1043 and PL1043 B

Lapse Status Report

(Relinquishment Report)

May 2023

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1 Key Licence History

PL1043 was awarded on the 14th of February 2020 as part of the APA 2019 process and contains the Jotun Deep prospect with some additional leads. Located in the South Viking Graben of the Norwegian North Sea PL1043 (part blocks 25/7 and 25/8) was operated with 40% interest by Vår Energi, while the two JV partners Sval and Concedo hold 30% each. The initial 14th of February 2022 drill-or-drop deadline was extended by one year (two six-month extension) due to study delays caused by the COVID-19 and to complete the additional work. The former PL027 B was recaptured by Vår Energi as part of APA 2021 and was called PL1043 B.

The work commitment for the initial exploration phase, consisting of G&G studies and 3D seismic reprocessing has been fully completed.

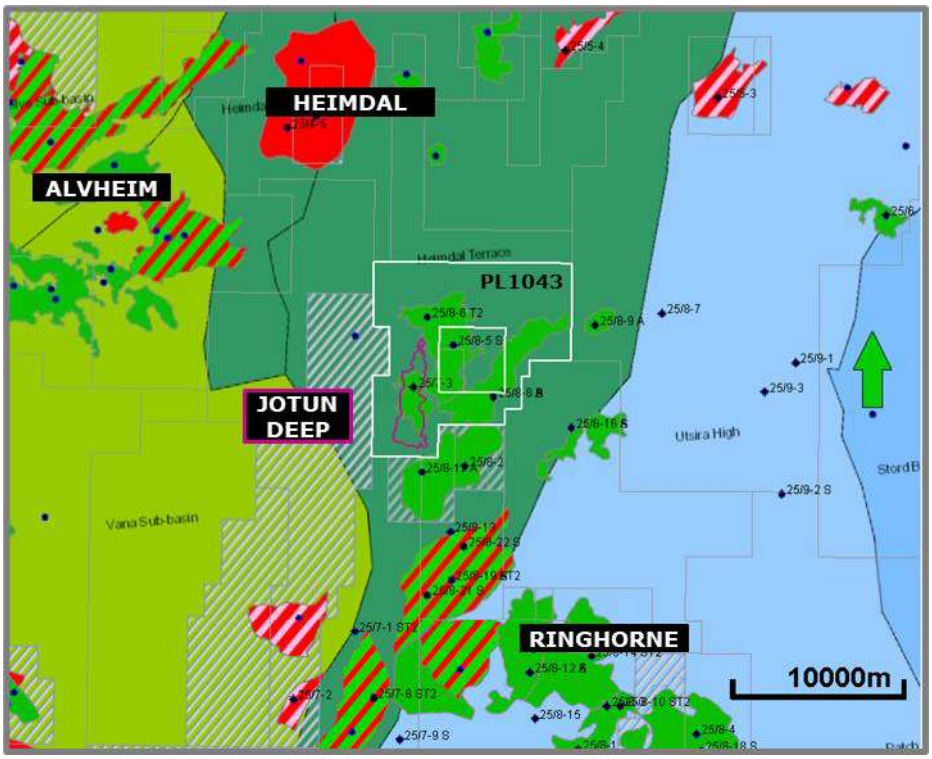


Figure 1: Location Map PL1043

Meetings held were as follows:

- No.1 13.04.2020 EC-MC Meeting
- No.2 08.12.2020 EC-MC Meeting
- No.3 25.06.2021 Technical Work Meeting
- No.4 05.11.2021 EC-MC Meeting
- No.5 10.06.2022 Technical Work Meeting
- No.6 30.11.2022 EC-MC Meeting

2 Database Overview

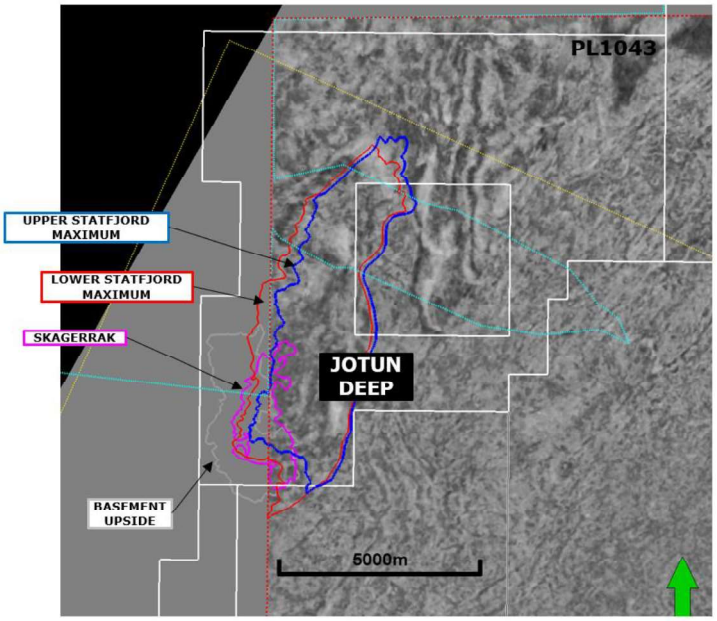
Seismic Data

The 3D seismic reprocessing commitment was fulfilled by the creation of the EN19M01 MAZ reprocessed time and depth volumes that cover the area. This newly acquired seismic used a multi-azimuth depth-migration processing workflow to give improved imaging of the PL1043 prospectivity, faulting, and the key sub-Cretaceous levels. This survey was in the Common Database for the licence but is not due to be released publicly until 31/5/2029.

	Survey Name	Survey Name
EN19M01 Reprocessed Merge	NVG09	NA
	NVG10	7189
	SVG11	7378
	ES9403	3644
	ST9707	3886
	MC3D-NVG10	7189

Table 1: Seismic Surveys

The licence and prospect was mainly mapped on the EN19M01 PSTM and PSDM seismic data but this does not cover the most westerly portion of the licence nor the prospect. To complete the delineation of the Jotun Deep prospect the PGS16M01-PGS15917 PSDM was used in the southwest while in the northwest the MC3D-NVG10M PSDM (NPDID 7189) was used, although the latter is of poor quality at the area of interes. These surveys can be seen in Figure 2.



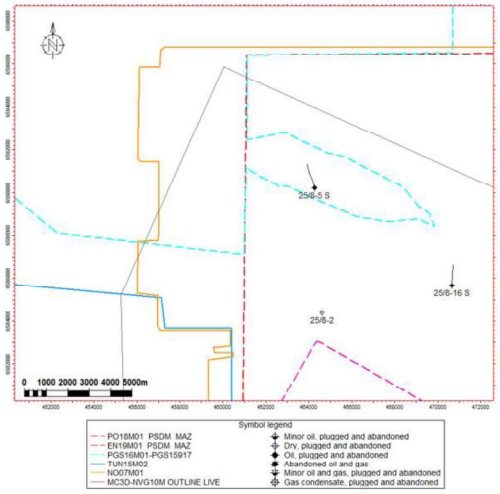


Figure 2: 3D Seismic Database PL1043 and PL1043 B. Timeslice shown is from EN19M01

Well Data

Key wells used were those from the Jotun and Jette field area particularly 25/8-5 S and 25/8-2 plus the recent Iving/Evra discovery wells in PL820 (25/8-19 S, 25/8-19 A, 25/8-19 AT2, 25/8-21 S, & 25/8-22 S) and the Vår Energi operated King and Prince wells in PL027 further south (25/8-20 B, 25/8-20 C, 25/8-20 S).

Well	NPDID
25/8-2	363
25/8-5 S	*2390*
25/8-19 S	8932
25/8-19 A	*8981*
25/8-19 AT2	
25/8-20 B	9277
25/8-20 C	*9278*
25/8-20 S	9275
25/8-21 S	*9309*
25/8-22 S	*9337*

Table 2: Key Wells

3 Geological and Geophysical Studies

Part of the work programme was fulfilled with the 3D seismic reprocessing and creation of the EN19M01 time and Pre-Stack Depth Migrated volumes.

Alongside the full re-interpretation and mapping of the prospectivity, a number of geological and geophysical studies were conducted since the licence award:

Fault Seal Analysis

A fault seal study was run for Jotun Deep to investigate if the eastern fault that forms part of the main closure and the other faults to the south, east, and north have any fault seal potential. Interestingly, a simple shale gouge assessment was initially run using the 25/8-5 S well (although the reliability of the logs must be questioned above the Statfjord due to wash-out) which showed that there was good sealing potential for the Statfjord reservoir levels even with 30 metres of displacement. The more sophisticated model was built using the derived v-shale curves for four wells, 25/8-5 S, 25/8-2, 25/8-19 AT2, and 25/8-19 S, and modelling four faults for low v-shale juxtaposition and development of shale gouge ratios. The Dunlin Fm. shale level above the Statfjord in well 25/8-5 S was excluded because of the reliability issues however a very similar litho sequence is present in well 25/8-2 and this is the origin for the population of that zone along the fault. In summary, the Upper Statfjord has some leak points identified but the Lower Statfjord is modelled to be unaffected given the depths of the closure.

For the Upper Statfjord Fault F3 (see Figure 6 for fault locations) running north-south near the edge of the dip closure shows points of unfavourable low v-shale juxtaposition and low shale gouge development but these leak points

are close to the fault tip and still within the main structural closure or above within the range of the much bigger closure apparent if the faults to the south F1, east F2, and north F4 seal. Along the length of the connected F1 and F2 fault bounding to the south and east there are some unfavourable juxtapositions identified but the shale gouge ratios are consistently high so that the probability of the fault sealing is 50% along its entire length. Fault F4 to the north has a leak point at 2875 metres that sets the deepest spill for the Upper Statfjord maximum fault seal case.

Fluid Inclusion Study: Well 25/8-5 S

A fluid inclusion study was done on well 25/8-5 S and the results finally available in Q2 of 2022. It confirmed that the hydrocarbon inclusions from the live oil zone in Heimdal seem to be different than the inclusions in Statfjord. Micro thermometry suggests petroleum has entered the Statfjord Gp some time ago and these light HC inclusions likely come from local sources present within the Statfjord itself. This study did not change the overall concept of charging Jotun Deep.

Hydrocarbon Generation, Expulsion, and Migration Modelling

A thorough basin modelling study was performed in the South Viking Graben since the licence award. The resultant charge model for Jotun Deep can thus be summarised:

- HCs are charged from the oil mature Jurassic age source rocks immediately to the west, with the Upper Jurassic Heather and Draupne Fms. being the prominent sources

- Additionally, hydrocarbons from Lower Jurassic sources in the Vana Sub-Basin and on the Heimdal Terrace are expelled into the Statfjord Fm. and migrate into the Jotun Deep prospect.

- Two migration routes from the Vana Sub-basin:
  - HC migration into the Jotun Deep prospect happens up the main fault to west of prospect
  - From north along continuous carrier beds out of the Vana Sub-basin
- HC trapping starts in Eocene times (~49 Ma ago)
- Sufficient oil has been generated to fill the largest cases presented here with some dissolved and free gas at present day.

The produced hydrocarbons in the Jotun Field above the prospect are sourced from all Jurassic source rocks and are postulated to have come up faults in and around PL1043 on the Heimdal Terrace, effectively through the Jotun Deep prospect. There is an additional route in the modelling that takes hydrocarbons from the basin and migrates it eastward to the Jotun Field. It is worth noting that the volumes expelled from the Jurassic sources in this area of the South Viking Graben are huge and that substantial leakage and upwards loss is modelled from the deeper carrier beds into the Tertiary layers. For the 2019 Iving discovery, hydrocarbons are most likely derived directly from the Vana Sub-basin to the west.

This basin modelling study was positive to the perception of charge risk into PL1043.

4 Prospect Update Report

The main prospect on PL1043 and PL1043 B remains Jotun Deep as it was at the time of the application. Other minor leads have been identified since the licence award. The volume of oil in-place for Jotun Deep have been revised upwards and the possibility of success is now higher based on a full re-interpretation of the new data alongside an updated geological and geophysical evaluation. An overview of the prospectivity is shown in Figure 3.

- Jotun Deep is the main prospect on the licence
- In addition to the Elli Deep lead mainly on PL1043 B three further smaller closures are identified plus the hangingwall Demring lead partially on PL1043

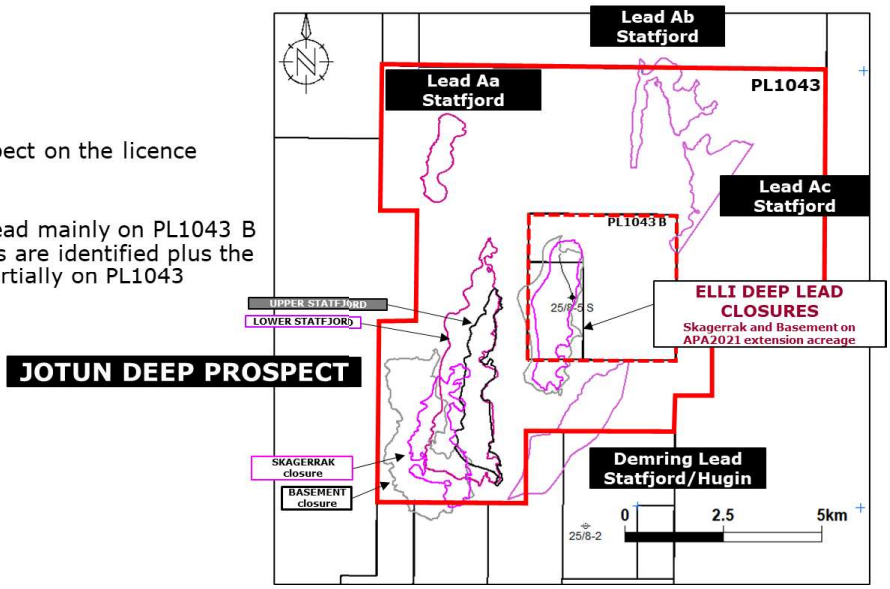


Figure 3: PL1043 and PL1043 B prospectivity at time of relinquishment

At the time of the application the resource potential and prospectivity was thus:

Discovery/ Prospect/ Lead name [1]	D/ P/ L [2]	Case (Oil/ Gas/ Oil&Gas) [3]	Unrisked recoverable resources [4]						Probability of discovery [5] (0.00 - 1.00)	Resources in acreage applied for [%] [6] (0.0 - 100.0)	Reservoir		Nearest relevant infrastructure [8]	
			Oil [10^6Sm^3] (>0.00)			Gas [10^9Sm^3] (>0.00)					Litho-/ Chrono-stratigraphic level [7]	Reservoir depth [m MSL] (>0)	Name	Km (>0)
			Low (P90)	Base (Mean)	High (P10)	Low (P90)	Base (Mean)	High (P10)						
Jotun Deep	P	Oil	3,97	9,90	18,40	0,19	0,53	1,00	0,18	100,0	Stafjord Gp	2650	Ringhorne	15
Tinden	L	Oil								100,0	Intra-Draupne Fm	2850	Ringhorne	15
Nuten	L	Oil								70,0	Intra-Draupne Fm	2570	Ringhorne	15
Demring	L	Oil								70,0	Intra-Draupne Fm	2350	Ringhorne	15

Table 3: Resource potential APA 2019 (NPD Table 2)

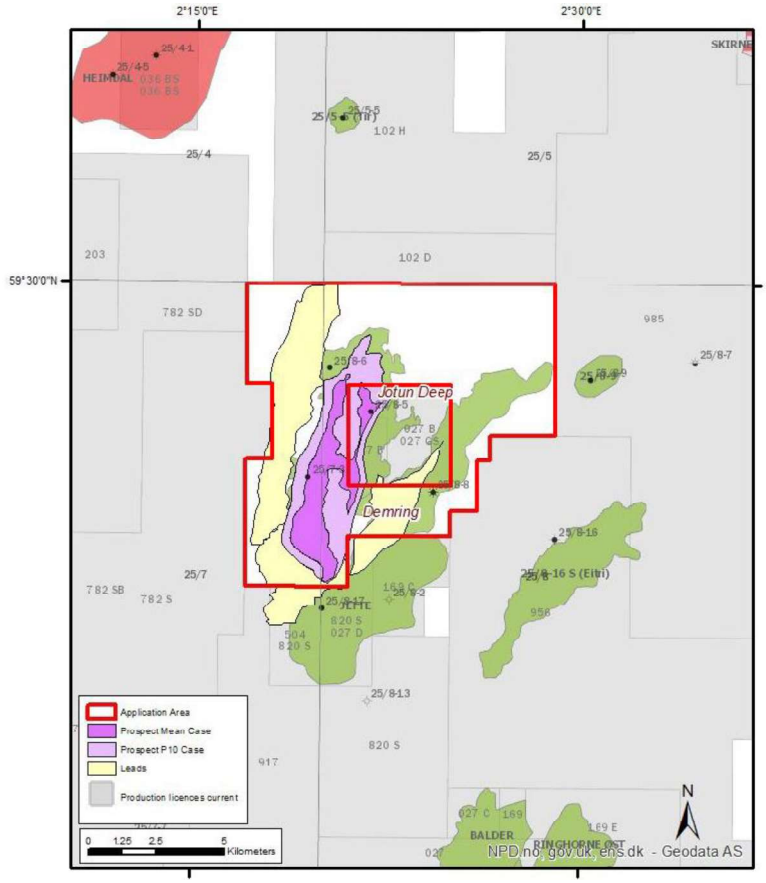


Figure 4: Area applied for and prospectivity as of APA 2019

The Jotun Deep prospect is a structural trap comprising a down-thrown fault block of the Heimdal Terrace with the Vana- Sub basin immediately to the west. It is a multi-target prospect with the main targets being the Lower and Upper Statfjord Group with additional closures in the Skagerrak Formation and Basement. A cross-section and structural depth maps can be seen in Figure 5, 6 and 7.

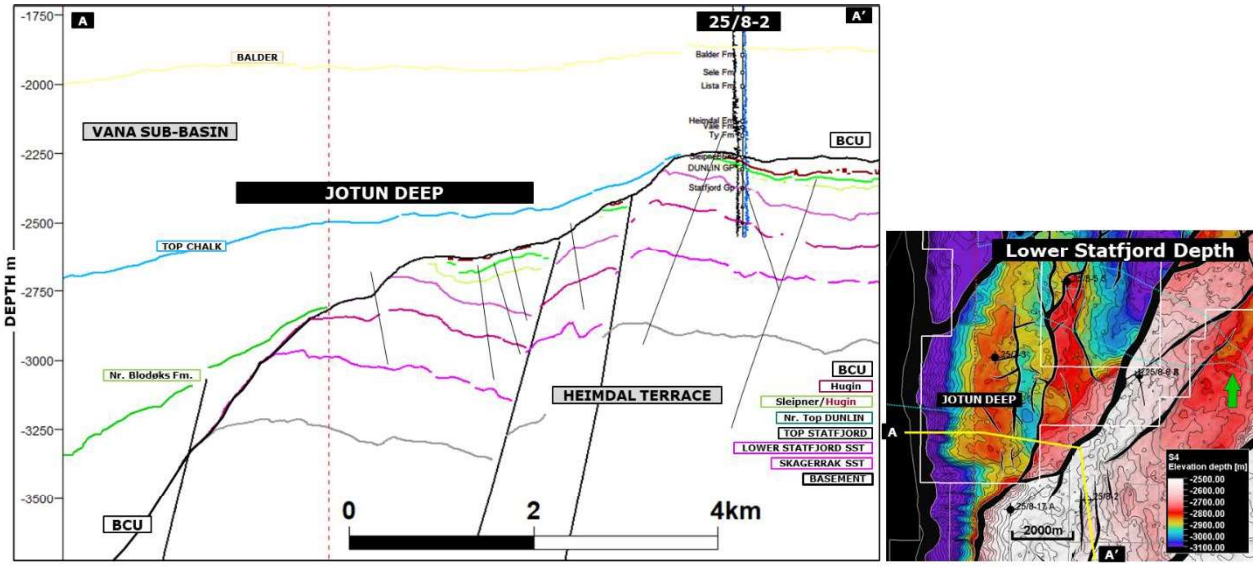


Figure 5: Cross-section in depth across the Jotun Deep prospect

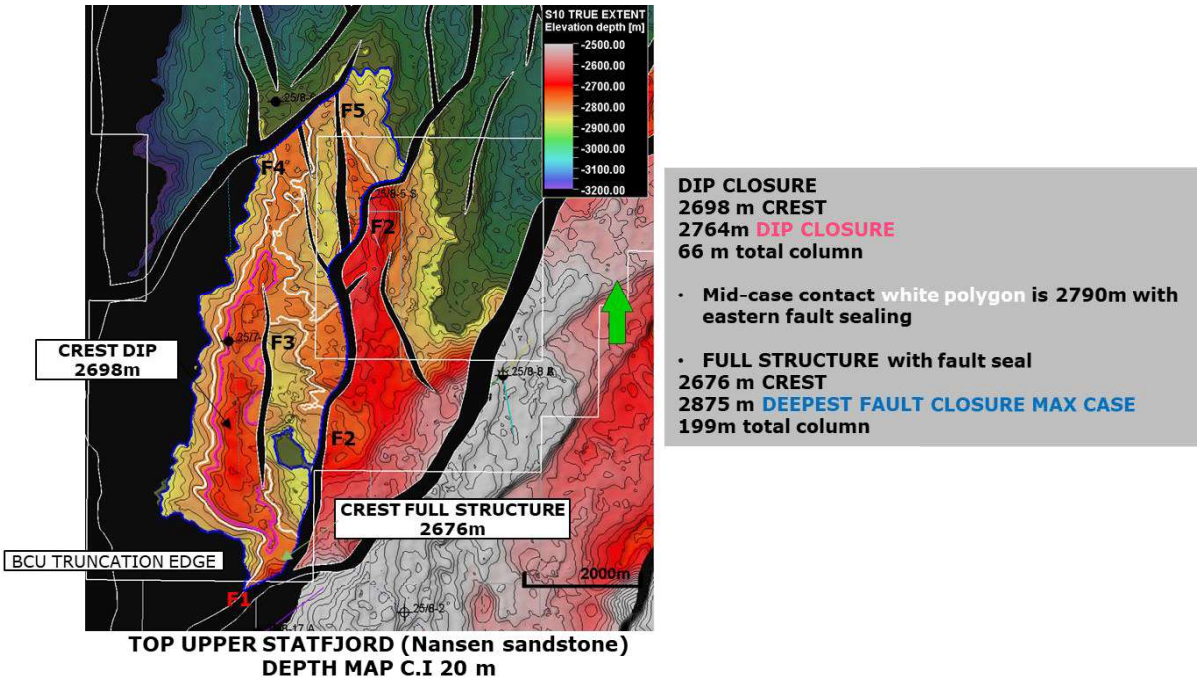


Figure 6: Upper Statfjord reservoir depth map

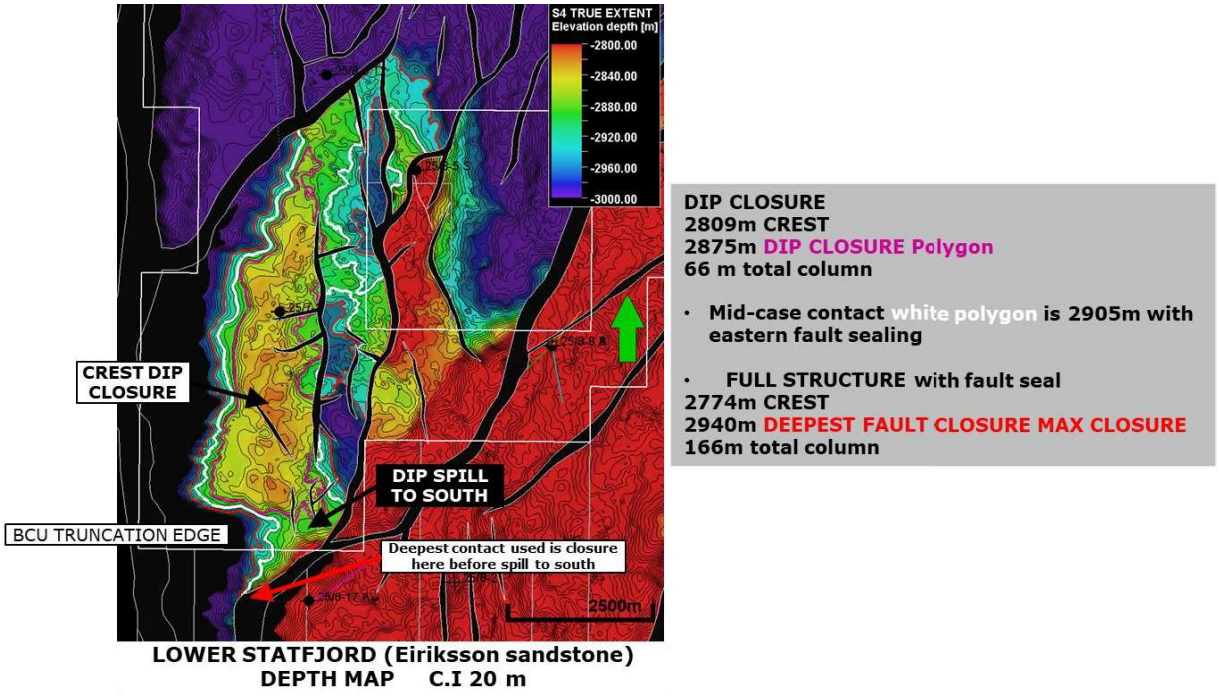


Figure 7: Lower Statfjord reservoir depth map

The new seismic data, EN19M01, that was processed as part of fulfilling the work commitment was of good quality. Differently to the APA 2019 application, where the Statfjord was evaluated as one bulk unit, the new seismic interpretation led to the prospectivity being split into Upper Statfjord (Nansen Sandstone) and Lower Statfjord (Eiriksson Sandstone).

Prospect forms with the revised resource potential are part of this relinquishment package. In summary, the new estimated HIIP are 201.2 Mboe (Mean) split as follows: 89.8 Mboe Upper Statfjord and 111.43 Lower Statfjord with respective POS of 25% for the Upper Statfjord and 27% for the Lower Statfjord.

Following the work since the licence award the overall risk is perceived as lower largely due to increased confidence in the mapping on the new data and the positive indications from the more sophisticated fault seal study. The basin modelling work and the positive results of some wells in the area since the APA 2019 application have also aided in de-risking the prospect.

However, the two main risks remain, namely; Trap and Charge. Trap integrity and potential charge retention is still identified as an issue and, although the prospect has a dip closure, the medium and max cases rely on a fault assisted closure. Charging could still be problematic in case the mature basin directly to the west is not generating enough hydrocarbons in the catchment area and that those generated might migrate northwards rather than up the basin bounding fault.

The Jotun Deep prospect is positioned on the most westerly fault block on the northern Utsira High before the much deeper Vana sub-basin where similar stratigraphy is several kilometres deeper. The fault block dips towards the east and north-east whilst to the west the Statfjord Gp. and Skagerrak Fm. sub-crops beneath the BCU. The dipping fault block and erosion of the Statfjord Gp. form a minor 4-way closure close to the location of the 25/7-3 well, which terminates in the Shetland Gp.. Deeper than this more true 4-way there is further closure provided by erosion and truncation of the two Statfjord levels to the south. Filling the prospect below this dip closure requires faults to seal to some degree, particularly to the south and east. The key elements of the structure are observed on both time maps, depth converted time maps, and this latest mapping on the pre-stack depth migrated data.

Lateral seal across from and above the BCU is attributed to the Cretaceous sequences, resting unconformably on the reservoir levels. Well data shows that little sand is seen regionally in the Cretaceous section except for an isolated sand, assigned to the Cromer Knoll Gp further east in the 25/8-8 S well. In general, the Cretaceous shales are likely to present a reliable top seal, particularly considering the expected hydrocarbon phase and the modest column.

For the only identified prospect on the licence, Jotun Deep, HIIP has been evaluated for the two Statfjord levels, see Table 4. The top reservoir grids used for the evaluation are derived from interpretation of the PSDM cubes that overlap across the mapped prospect area.

The predicted phase is oil with gas cap for both the Statfjord targets.

JOTUN DEEP	Upper Statfjord HIIP	P90	P50	P10	P mean
	Upper Statfjord OIIP (mmbbls)	18.11	50.16	171.27	75.06
	Upper Statfjord GIIP gas cap (bcf)	1.56	11.22	58.24	22.52
	Upper Statfjord Sol. Gas (bcf)	12.95	36.89	127.93	55.81
	Total HIIP (mboe)				89.81
	Lower Statfjord HIIP	**P90**	**P50**	**P10**	**P mean**
	Lower Statfjord OIIP (mmbbls)	43.69	89.23	174.15	101.55
	Lower Statfjord GIIP gas cap (bcf)	3.60	14.64	50.73	21.93
	Lower Statfjord Sol. Gas (bcf)	12.21	26.32	54.46	30.54
	Total HIIP (mboe)				111.43
	Total U. Stat + L. Stat	**P90**	**P50**	**P10**	**Mean**
	Total Combined OIIP (mmbbls)	84.05	158.97	294.31	176.61
	Total Combined GIIP (BCF)	48.62	106.22	247.36	130.80
	Total Combined HIIP (Mboe)	94.49	179.82	339.72	201.24

Table 4: In-place resource estimate for Jotun Deep

Upper Statfjord S7-S10 Target

There is a mapped dip closure to the Upper Statfjord that is a combination of the top Statfjord horizon combined with the BCU from where it is truncated. The crest of the structure is at 2698m for the dip closure and 2678m in the very south for the full structure cases that seal up against the faults. Fault seal analysis predicts some leakage along fault F3 but the shallowest ones are at the fault tips and within this dip closure. Minimum fill is down to this dip closure. The deeper F3 potential leak points are within the fault seal closures deeper than the dip closure 2764m. Once deeper than this dip closure the fault to the south, F1, and then deeper still fault F2 must seal in order to provide extra column height. Based on the predicted shale-gouge ratios developed along this linked fault it has no identified leak points that have a low probability of sealing. The deepest contact is based on an identified fault leak point that has a low probability of sealing along fault F4 with Upper Statfjord self-juxtaposition.

Hydrocarbon column heights are thus ranged using a generic distribution with the following contacts and weighting:

- 2698m SHALLOWEST dip closure, fault F3 seals
  - 70% weight (66m column)
- 2790m INTERMEDIATE fault seal to the south F1 and east F2
  - 25% weight (92m column)
- 2875m DEEPEST fault seal to the south, east, and north F4 down to identified Upper Statfjord self-juxtaposition leak point
  - 5% weight (199m column)

Lower Statfjord S4-S5 Target

There is a mapped dip closure to the Lower Statfjord that is a combination of the interpreted Lower Statfjord horizon combined with the BCU from where it is truncated to the. The crest of the structure is at 2809m for the dip closure and 2774m in the very south for the full structure cases that seal up against the faults.

Fault seal analysis predicts that all the faults have a good probability of sealing based on the development of sufficient shale-gouge ratios. The deepest contact used is therefore the last main closing contour before spill to the south.

Hydrocarbon column heights are thus ranged using a generic distribution with the following contacts and weighting:

- 2875m SHALLOWEST dip closure
  - 70% weight (66m column)
- 2905m INTERMEDIATE fault seal to the south F1 and east F2
  - 25% weight (96m column)
- 2940m DEEPEST fault seal to the south, east, and north, with ultimate spill to the south around fault F1
  - 5% weight (166 m column)

Leads and Additional Potential

In addition to the Jotun Deep prospect having deeper closures in the Skagerrak and basement rocks, there are four additional leads on PL1043 at the Statfjord Gp. level. The Demring lead may have potential at the Hugin Fm. sandstone level also. The Jotun Deep prospect itself has a deeper closure at basement level but the associated size is small. There is inherent risk to the potential basement reservoir and the seismic is not conducive to illuminate porous zones or fractures (eg. refraction seismic would be helpful). The nearby Iving discovery could nudge the chance of finding the desired fractured and/or weathered basement reservoir above 50%.

If a well on Jotun Deep was successful at the Skagerrak level, there is deeper structural potential in the Elli structure that was not penetrated by the 25/8-5 S well in the 1990s, sitting largely within what was PL1043 B.

5 Technical Assessment

An exploration well on the Jotun Deep prospect would have focused on the Upper Statfjord and Lower Statfjord targets.

The planned development scheme was based on a sub-sea tie-back to the refurbished Vår Energi operated Jotun A FPSO once it is placed at its new location approximately 20-25 kilometres from Jotun Deep. Three different scenarios have been developed for both the Upper and Lower Statfjord target reservoirs based on a tie-in to an existing riser with flowlines and an umbilical from the Jotun FPSO to a subsea manifold at Jotun Deep. Due to limited gas capacity in the host facilities and the related uncertainty from 2033 onwards, it was estimated that deferred production of approx. 100 bbl/mmscf was considered necessary.

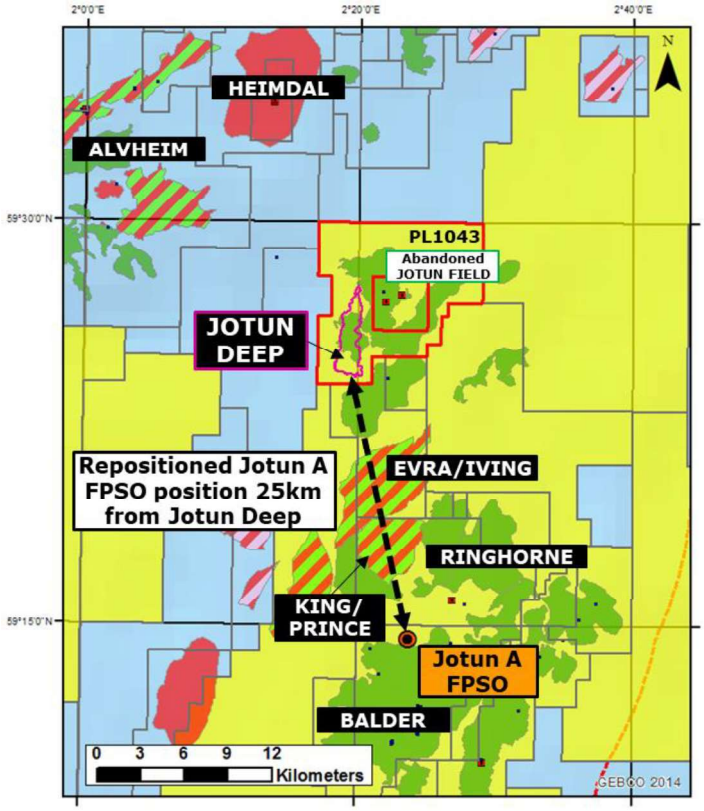


Figure 8: The Jotun Deep prospect location and potential FPSO tie-in

6 Conclusion

There was mutual agreement within the joint venture that Jotun Deep was interesting geologically but was considered too high risk to drill given the economics, particularly with the most likely case being negative. It was therefore decided to relinquish the licence at the drill-or-drop decision deadline.