PL567 Relinquishment Report

REV	ISSUE DATE	STATUS	AMENDMENT DETAILS	ORIGINATED BY	APPROVAL
1	2016-01-15	Draft		Hyelni Kulausa	
2	2016-01-19	Final	QC	Hyelni Kulausa	Vidar Friestad

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1.0 LICENSE HISTORY

Production licence 567 was awarded on 4 February, 2011 to Premier Oil (60%, Op.) and Det norske oljeselskap (40%). It covers 389.2 sq.km of block 2/6 (Figure 1).The licence was awarded with an initial period with a firm work commitment to reprocess 3D seismic data and conduct geological & geophysical studies leading to a drill-or-drop decision after two years.

However, three 1 year extensions to the drill-or-drop decision gate have been applied for and subsequently granted by the Ministry. The current licence anniversary date is 4th February, 2016.

In November, 2015 Det norske oljeselskap ASA acquired all assets of Premier Oil Norge AS including PL567 licence. As a consequence Det norske now holds 100% equity in the licence.

During the licence period, 10 EC/MC meetings were held by the operator to share and discuss prospectivity evaluations with the licence partner. The identified prospectivity in the licence has hydrocarbon charge and reservoir presence/effectiveness as shared risks. These two critical risk factors are common themes throughout the greater Mandal High area. In addition, insufficient resource potential of the main prospect, Freki makes it uneconomic to make a drill decision. Therefore, a decision was taken to drop PL567 licence.

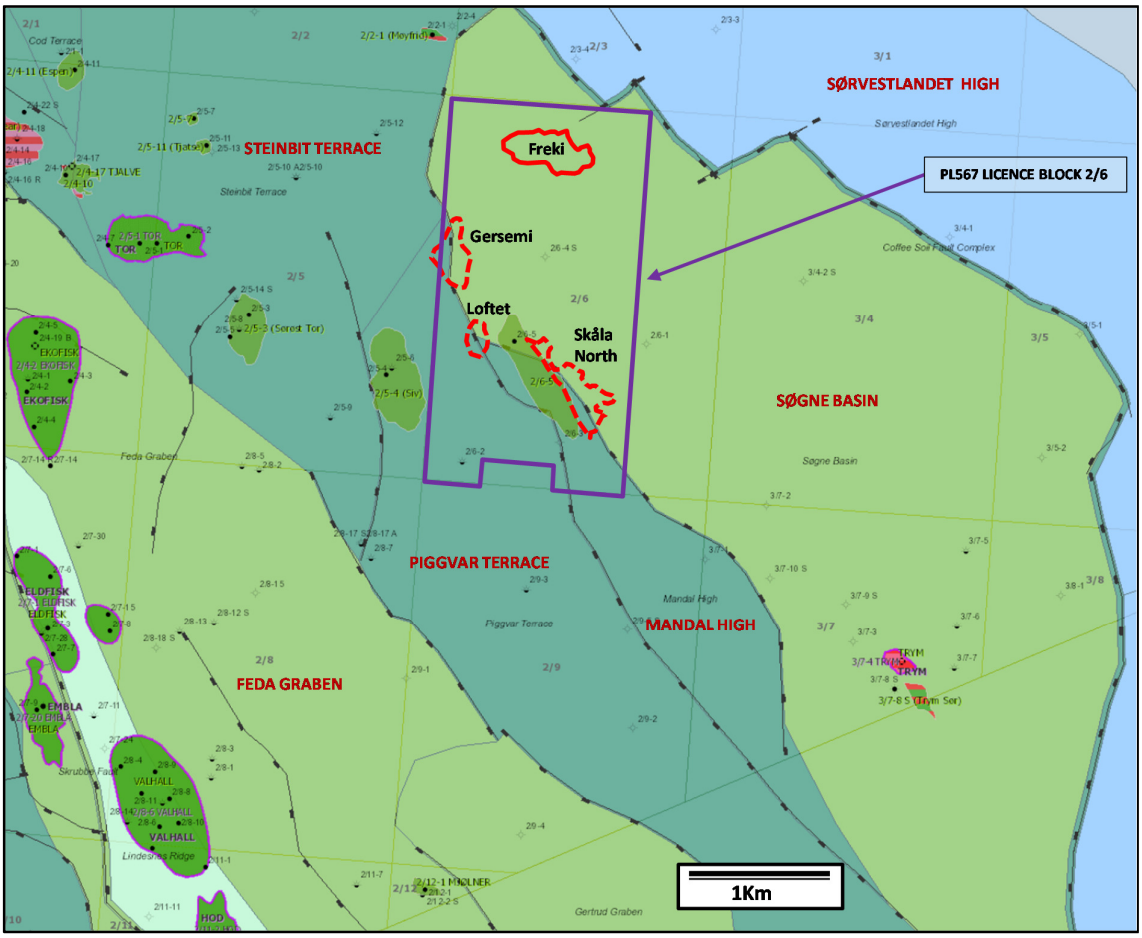

Figure 1: Map view of PL567 with outlines of the prospect Freki and three leads known as Skåla North, Gersemi and Loftet in the Mandal High/Søgne Basin area

2.0 DATABASE

The seismic database for the licence consisted of 2D and 3D seismic surveys. SG9703 was the main 3D seismic data covering part of the licensed area as at the time of application. PON12M01 is a merged product of reprocessing SG9703 and SG9508M 3D datasets as part of the firm work commitment. The 2D seismic database consisted of a selection of multi-client and released public surveys of varying vintages.

Quality of PON12M01 is considered to be good and it covers most of PL567 with only a small part in the east and southwest of the licensed area not covered (Figures 2).

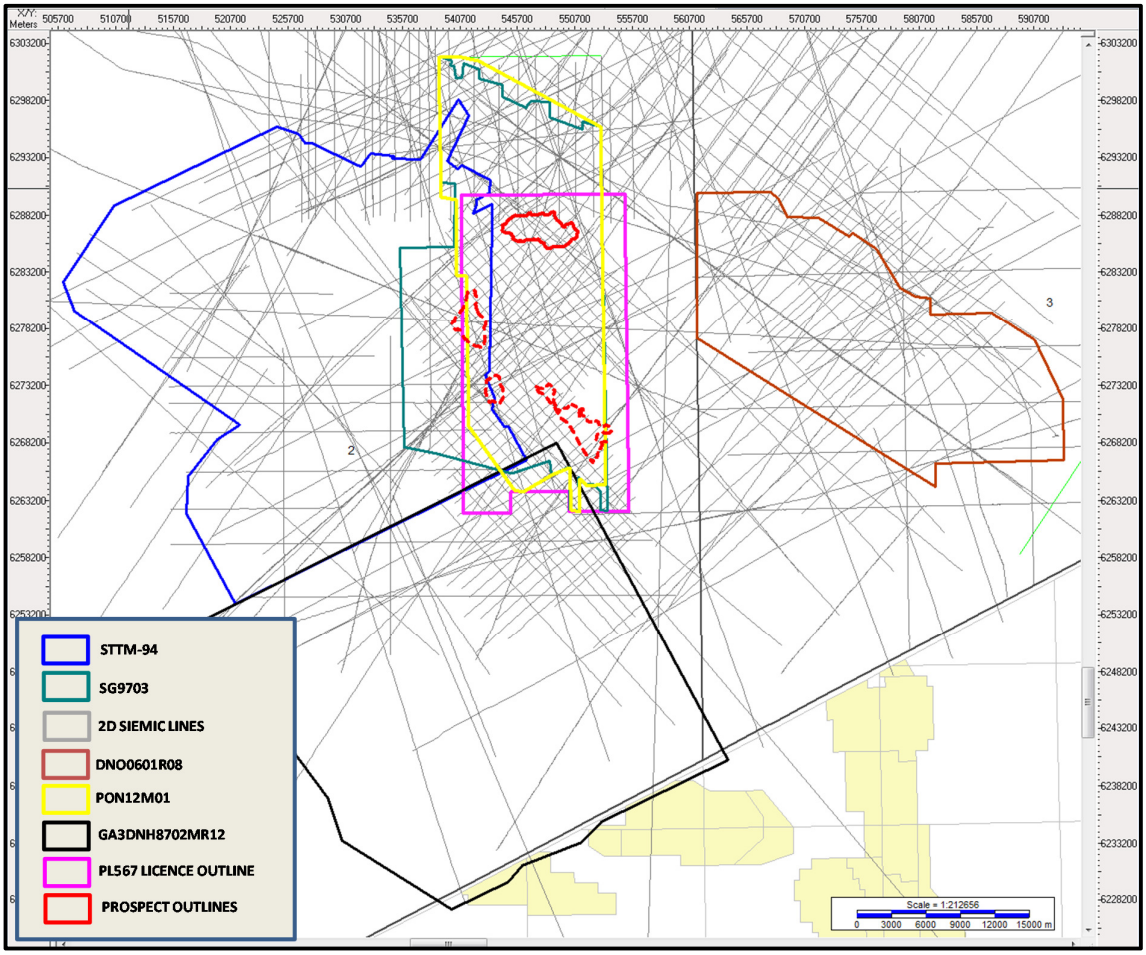

Figure 2: Shows 2D and 3D seismic data coverage in PL567 licensed area. PON12M01 is the main 3D seismic data reprocessed from a combination of SG9703 and SG9508M

3.0 REVIEW OF GEOLOGICAL FRAMEWORK

The PL567 partnership has undertaken five major studies as part of prospectivity evaluation: biostratigraphy of the Upper Jurassic, sedimentology, petrography of the basement and Jurassic petroleum systems modelling. In addition, pressure studies were also carried out to assess possible seal breach especially for the chalk because some of the structures are dependent on the chalk as top seal.

15 wells were selected for biostratigraphic evaluation. The aim was to classify Jurassic sandstones to help facilitate mapping of genetic units. These were classified according to the Partington stratigraphic scheme of the North Sea (Partington et al., 1993). Results showed that the area containes Upper Jurassic sequences from J66 to J56. Parts of the sequences below the Base Cretaceous Unconformity (BCU) are missing due to erosion. The sedimentological studies in conjunction with biostratigraphy were used to create Gross Depositional Environment (GDE) maps which helped characterize reservoir presence, distribution and quality. Two potentially reservoir prone depositional systems were identified namely shallow marine shoreface deposits and deep marine turbidites.

Petroleum system modelling was carried out as part of a regional study to characterise Jurassic source rock facies and understand migration. Results indicates limited hydrocarbon expulsion from the local source kitchens. This is valid for either Middle Jurassic (due to limited thickness) or Upper Jurassic (marginally mature) source rocks. The Freki prospect is reliant on long distance hydrocarbon migration wheras Gersemi is in a more favourable location for local charge (Figure 3).

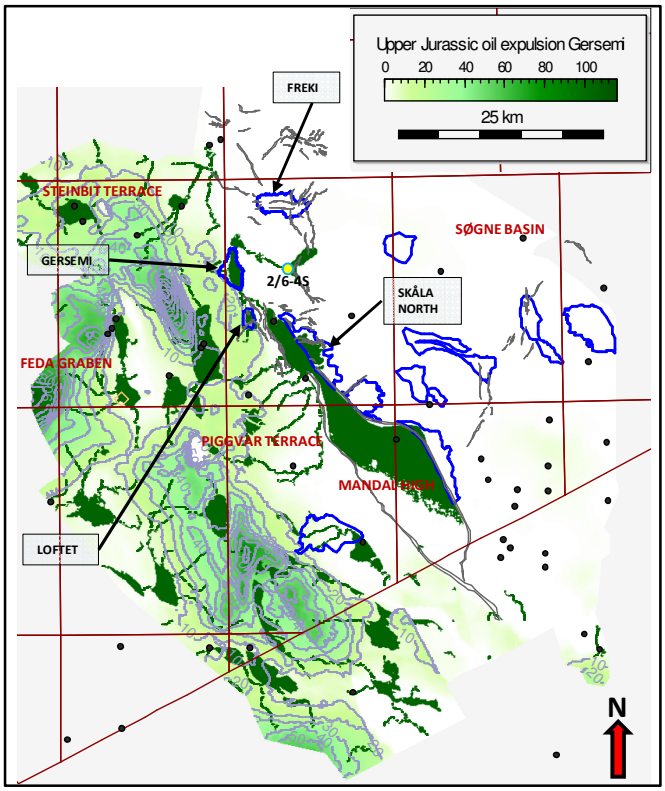

Figure 3: Map illustrating hydrocarbon expulsion from Upper Jurassic source rock intervals, possible migration pathways and modelled accumulations in structural closures indicating limited amount available to charge prospects and leads from the eastern kitchen area (Søgne Basin) whereas Gersemi and Loftet are in favourable locations for charge from the western kitchen area (Steinbit Terrace/Feda Graben).

4.0 PROSPECT UPDATE

At the time of application for the PL567 acreage, multiple opportunities were identified by the partnership within the Upper Jurassic play. After integrating results of several studies and re-interpretation of the reprocessed 3D seismic data, one key prospect known as Freki and one lead, Gersemi, remain as opportunities within PL567 licence area.

Freki Prospect

The Freki prospect is a salt-cored 4-way dip-closure with a crestal collapse graben and radial fault pattern around the flanks of the structure (Figure 4). It is expected to be sealed partly by Mandal/Farsund Formation shales and partly by shales of the Lower Cretaceous and chalk of the Ekofisk Formation where the former are absent (Figure 4B).

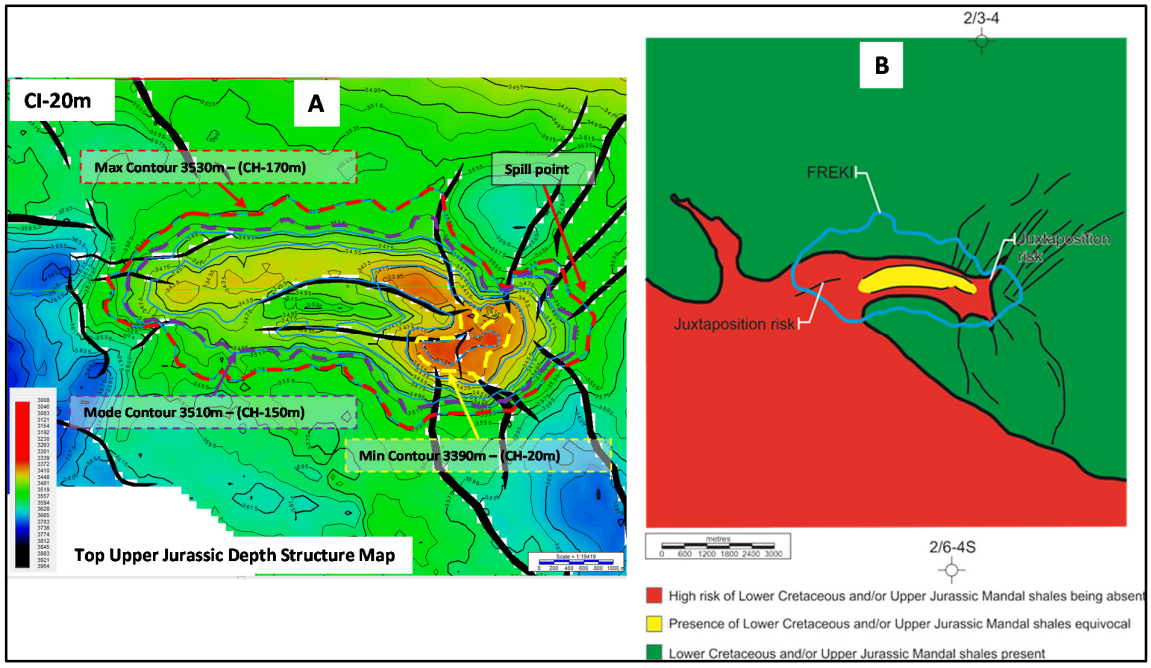

Figure 4: (A) BCU Time structure map (s) showing the Freki Prospect and volumetric assumptions and (B) top seal distribution and uncertainties related to seal rock presence

The Freki prospect is believed to contain J66-56 Upper Jurassic shallow marine shoreface sandstones. The J66 sequence has been removed by erosion in well 2/3-4, but is present in wells 2/2-1 and 2/2-4. A thin section is interpreted to be present in Freki. The J64-J54 interval contains sandstones in 2/3-4 but the interval is condensed and represented by shales in 2/6-4S. Despite multiple attempts it has not been possible to positively map the lateral extent of these sandstones, and their presence within the identified prospects and leads are uncertain.

Due to uncertainties regarding the extent of the sandstones encountered in nearby wells, reservoir presence and effectiveness has been identified as one of the critical risk factors for the Freki prospect, (together with charge) (Figure 7).

Skåla North

Skåla North is a 3-way dip closure against crystalline basement rocks of the Mandal High (Figures 1 and 5A). Top seal is provided by the chalks of the Ekofisk Formation. Evaluation of this lead shows that most of the stratigraphy within closure is comprised of Permian and Triassic which is known to have poor reservoir potential in this area. A small area on the eastern part of the trap is interpreted to contain Middle Jurassic Bryne Formation and Upper Jurassic sequences (Figure 5B and C). This area is volumetrically insignificant and hence Skåla North is considered as un-prospective. As a consequence resource assessment and risk evaluation has not been carried out for Skåla North.

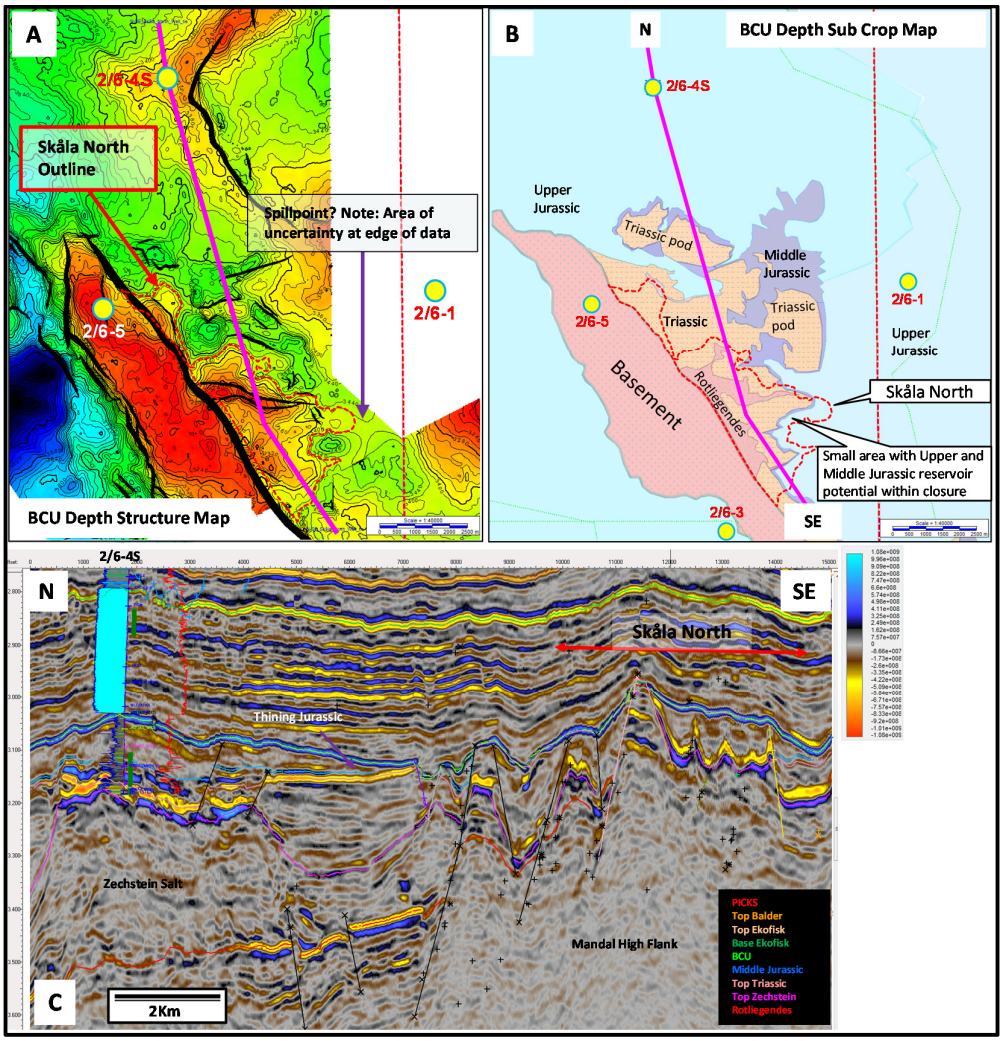

Figure 5: Skåla North: (A) BCU time structure map showing the Skåla North lead, (B) BCU sub-crop map showing stratigraphy within the closure; and (C) seismic section illustrating the trapping geometry. Note the thickening of Upper Jurassic section in the hanging wall, this indicated creation of significant accommodation space for sediment accumulation and possible reservoir deposition

Gersemi

The Gersemi structure is located in the western part of PL567, (Figure 1). It was formed by post-rift inversion and exhibits a four-way dip-closed trapping geometry on the BCU map (Figure 6). The mapped closure is straddling the licence boundary and approximately 12% is off-block. The Gersemi structure can contain Upper Jurassic gravity flow reservoir sandstones similar to what has been encountered in offset wells like 2/2-1 and 2/2-4. Reservoir sandstones are believed to be sourced from the footwall of the Coffee Soil Fault to the north and potentially transported along relays and faults margins into the Gersemi area.

However, some wells in close proximity to Gersemi have only penetrated shale in the Upper Jurassic section and risk for reservoir presence remains high. The seismic character of the gravity flow reservoir sandstones seen in well 2/2-4 cannot be compared to that at Gersemi due to noise in the seismic data. The trap is expected to be sealed by Upper Jurassic shales and Upper Cretaceous chalk.

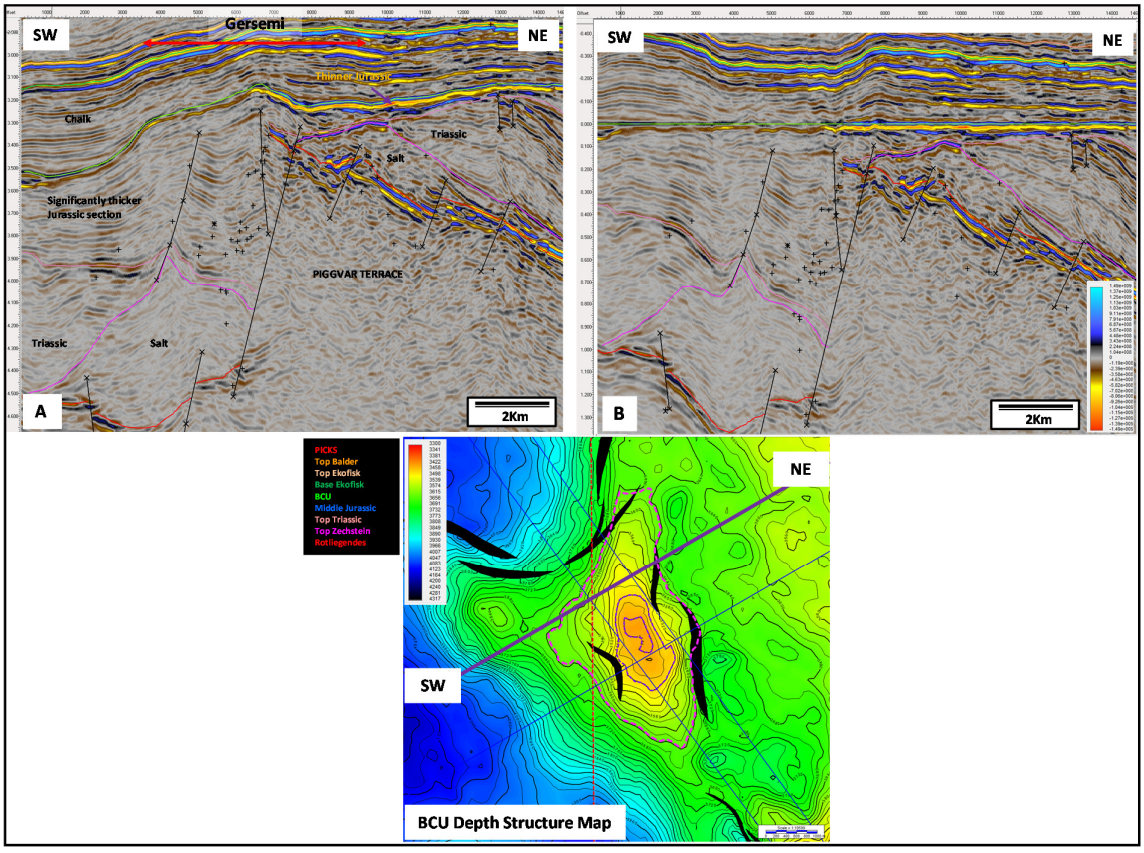

Figure 6. BCU depth structure map illustrating the trapping geometry of Gersemi and a SW-NE seismic section from SG9703 Survey. (A) shows Gersemi and (B) is the same section flattened on BCU. Note the thickening of the Upper Jurassic section in the hanging wall, which indicates the creation of significant accommodation space for sediment accumulation and potentially reservoir deposition.

Resources and Risks

The resource distribution and risk summary for the Freki prospect and Gersemi are shown in Table 1 and 2 as well as Figures 7 and 8 respectively. Mean recoverable resource for Freki is 24mmboe and Gersemi 39mmboe. Note that approximately 12% of the resources in Gersemi are outside PL567. The critical risk factors for Freki Prospect are charge (40%) and reservoir (40%), whereas for Gersemi it is reservoir presence (30%). Overall Ph for Freki and Gersemi are 13% and 22% respectively.

Top Upper Jurassic (J66) Map - CH 170m - April 2015

	P99	P90	P50	P10	P1	Mode	Mean
OIP (mmbbls)	5	27	78	167	255	54	89
Rec. Liquids (mmbbls)	2	7	20	44	70	13	23
Rec. Hc (mmboe)	2	7	21	46	74	14	24

Table 1. Freki Prospect oil resource assessment based on the structure as mapped at Top Upper Jurassic (J66) Map.

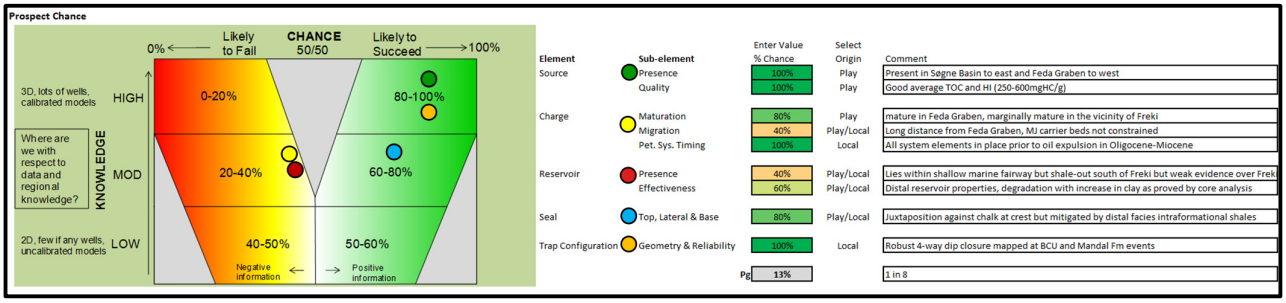

Figure 7. Freki Prospect risk assessment highlighting migration and reservoir presence as critical risk factors

BCU Depth Map

	P99	P90	P50	P10	P1	Mode	Mean
OIP (mmbbls)	9	26	96	313	679	43	142
Rec. Liquids (mmbbls)	2	7	25	81	183	11	37
Rec. Hc (mmboe)	2	7	26	86	194	12	39

Table 2. Gersemi resource assessment based on the structure as mapped at BCU level. This has to be used as a proxy for top reservoir structure map due to poor seismic data quality. Approximately 12% of the resources in Gersemi would be out of block.

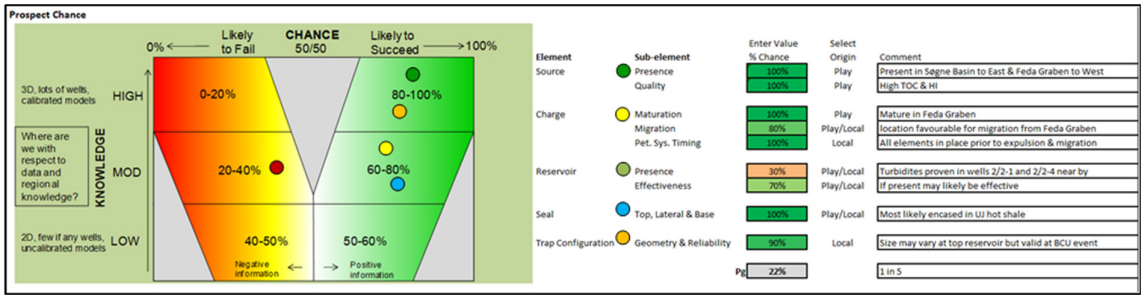

Figure 8. Gersemi risk assessment highlighting reservoir presence as critical risk factor.

5.0 TECHNICAL EVALUATIONS

An economic evaluation was carried out for Freki Prospect which is the main opportunity in the licence. This is based on an assumption that Freki would be developed as a tie-back to the Tor A platform, located approximately 38km to the SW in the Ekofisk area (Figure 9). The Ekofisk area has a number of platforms with processing capacity that can accommodate up to 50kbopd extra production.

The evaluation was made based on estimated resource potential as presented in Table 3. The assessment indicates that with the risk and resources as currently described an oil price in excess of $85/bbl would be required to make the opportunity commercially attractive. The net mean NPV10 is $52 million assuming an oil price of $85/bbl (Table 4).

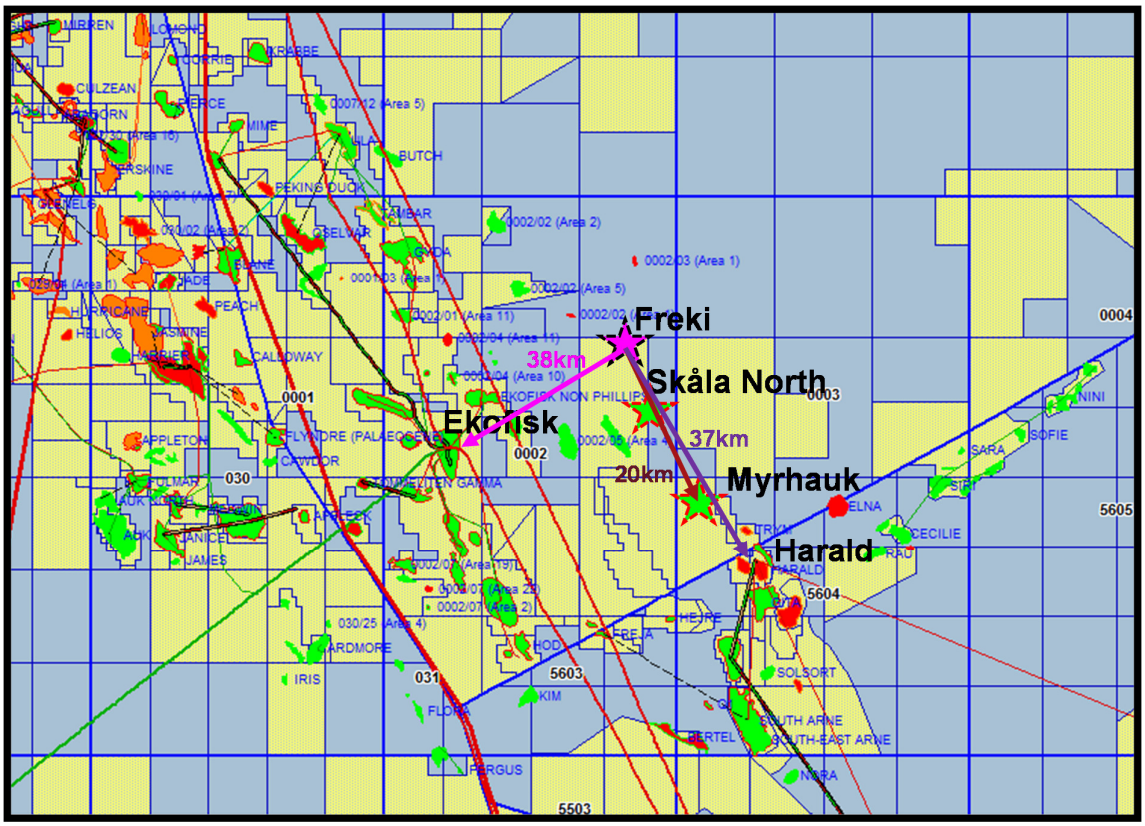

Figure 9. ***The Freki location is approximately 38km from the Tor A field (Ekofisk area) and 37km northwest of the Harald Field in Danmark.***

For a net mean resource of 24mmboe and a Ph of 0.13, the probability for commercial success, Pc,is 6% @ $85/bbl with a net EMV (10) of -0.3 at $85/bbl

Table (1) Resource and NPV10 - Gross Ground Floor Terms, Post Tax				
Resource Cases		**NPV(10)**		
case	**MMBOE**	**$65**	**$85**	**$105**
P90	6.7	-275.00	-204.20	-147.00
P50	21.0	-185.00	-52.20	30.00
P10	46.4	178.00	333.10	460.00
high	100.0	900.00	1136.81	1350.00

Table 3. *Resource cases and associated NPV(10) value at various oil price scenarios for the Freki prospect*

The economic assessment clearly shows that the Freki prospect fails to meet prudent investment thresholds.

6.0 CONCLUSIONS

Geological studies carried out to put the licence area into regional geologic context as part of the work programme has greatly improved the understanding of PL567. Detailed seismic interpretation and basin modelling study has highlighted the significant challenges to charging identified structures on the licence with the exception of Gersemi. Reservoir has also been identified as a risk for Freki.

Technical and economical evaluation of PL567 has illustrated that the identified prospectivity in PL567 does not meet commercial viability criterion and an unanimous decision to drop the licence has been taken by the partnership.

7.0 REFERENCES

Partington, M.A.P., Copestake, P., Mitchener, B.C. & Underhill, J.R., 1993. Biostratigraphic correlation of genetic stratigraphic sequences in the Jurassic - lowermost Cretaceous (Hettangian – Ryazanian) of the North Sea and adjacent areas. *In:* Parker, J.R., (ed.): Petroleum Geology of Northwest Europe: Proceedings of the 4th Conference: 371-386.