



PremierOil

PL725 Relinquishment Report

REV	ISSUE DATE	STATUS	AMENDMENT DETAILS	ORIGINATED BY	APPROVAL
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2	2016-01-19	Final	Edits and QC		

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1. LICENSE HISTORY

PL725 was awarded to Premier Oil Norge AS (Operator, 70%) and Ithaca Petroleum Norge AS (30% - subsequently acquired by MOL Norge AS in 2015) in February 2014 with a work program to reprocess 3D seismic and complete relevant geological/geophysical studies with a drill-or-drop decision after two years.

During the licence period four EC/MC meetings were held.

Following an evaluation of the prospectivity in the licence acreage the partnership concluded that, despite several promising leads, lack of significant trapping configurations meant it was not possible to mature a material opportunity in this area. A unanimous drop decision was therefore taken by the partnership in January 2016.

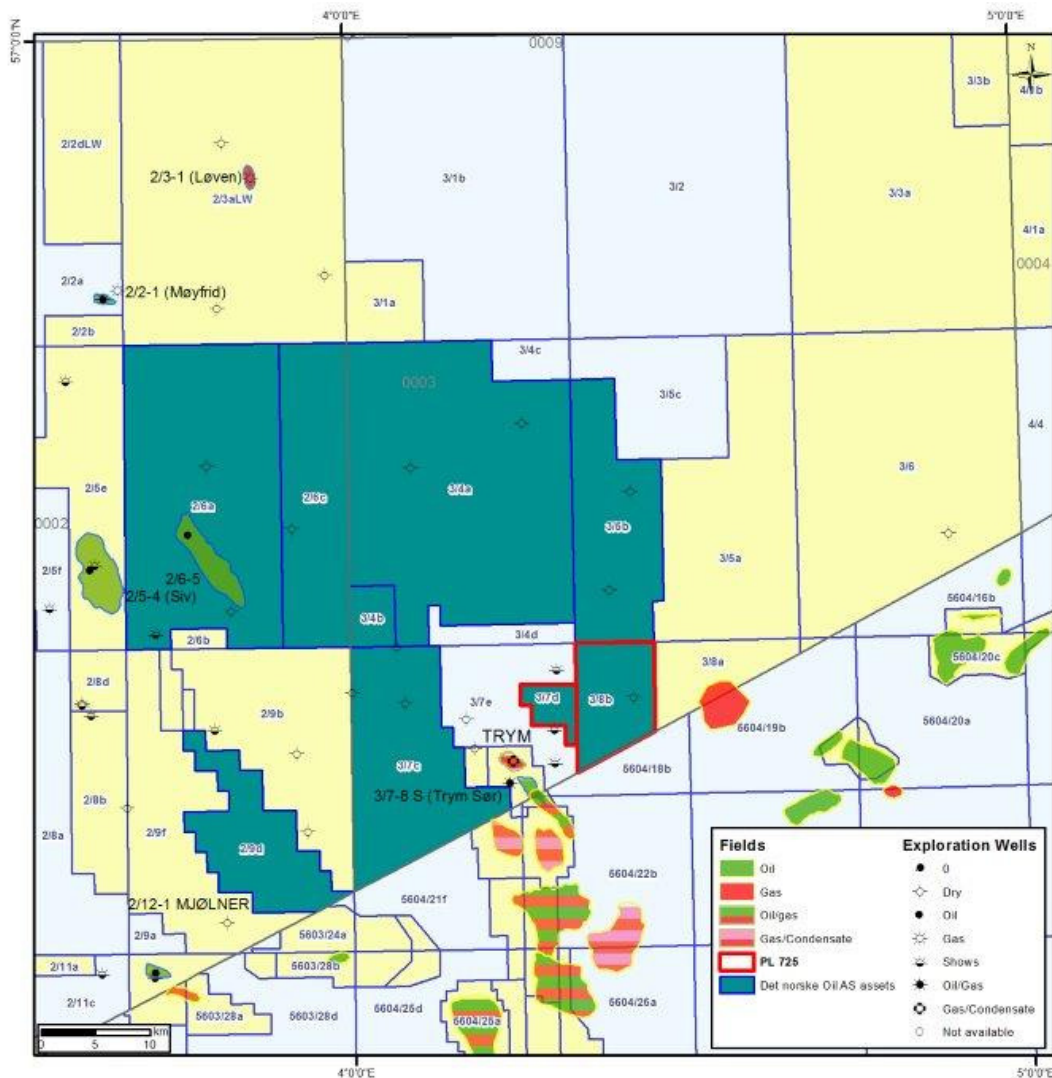


Figure 1. Map showing location of PL725 with the nearest fields & wells

2. DATABASE

The seismic database for the licence at time of application consisted of 3D seismic surveys including the multichannel PGS Geostreamer MC3D-CGR2010 and 2011 surveys. The partnership licensed 225 km² of PGS reprocessed 3D Geostreamer seismic data, MC3D-CGR2013, to satisfy the seismic reprocessing commitment. The CGR2013 represents a significant uplift on both the original MC3D-CGR2010, and first reprocessing vintage in 2011, with broadband products in both time and depth. The quality of the seismic data is considered to be good and it covers the license area in its entirety.

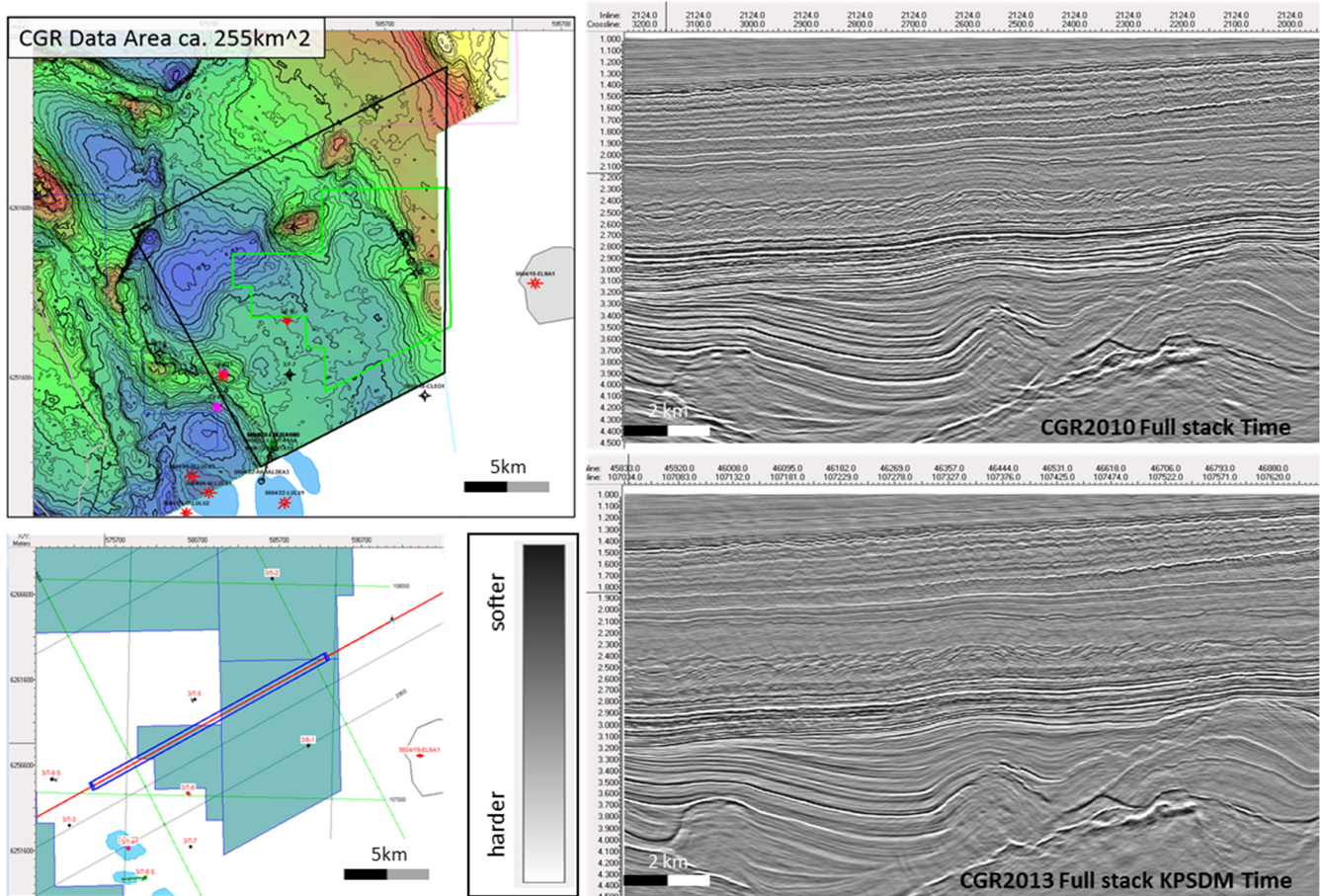


Figure 2. Data coverage of primary survey used for evaluation of PL725, MC3D-CGR2013 (left) and a comparison of data quality between PGS CGR2010 and CGR2013 datasets illustrating significant uplift in the sub-BCU imaging.

The Søgne Basin has 10 well penetrations in the Norwegian and 19 penetrations in the Danish sectors of the basin. A common well database was established by the partnership including the following wells. Access to the Gita-1X (Danish license 9/95) which found hydrocarbons, was purchased by the partnership after its release in 2015.

3/5-2	3/7-7
3/7-3	3/7-8
3/7-4	Cleo-1
3/7-5	Gita-1x
3/7-6	

3. REVIEW OF GEOLOGICAL FRAMEWORK

Two stratigraphic intervals were highly ranked at the time of the application:

(1) Middle Jurassic; comprises fluviially-dominated coastal plain deposits overlain by estuarine, back-barrier and sandy shoreface deposits, sealed by the Upper Jurassic shales and charged by Middle Jurassic lacustrine shales and coals. Traps are dip-closed structures related to faulting, inversion and salt movement and reliant on cross fault seals

(2) Upper Jurassic/lowermost Cretaceous; shallow and deep marine (turbidites), likely charged and sealed by Upper Jurassic Mandal Formation or by Lower Cretaceous mudstones. Trapping mechanism is heavily reliant on stratigraphic pinch-out or truncation.

The Tertiary, Rotliegendes and the Triassic in Block 3/7 and 3/8 were considered non prospective due to difficulties of access to charge from the Mesozoic source rocks (Permian and Triassic) and for the high uncertainties with regard to reservoir presence (Tertiary) outside the Siri Canyon.

The PL725 partnership has in cooperation with other joint ventures in the area undertaken six major studies to better understand the hydrocarbon potential within PL725 and neighbouring areas. Geological studies included biostratigraphy, geochemistry, fluid inclusion analysis, sedimentology and petroleum systems modelling, combined with a geophysical study to assess the rock properties and seismic attributes. All these studies contributed into building a comprehensive understanding of the area.

The petroleum systems analysis and modelling indicates that the Middle Jurassic Bryne Formation is mature for oil generation throughout most of the licence area. However, expulsion is generally low and spider diagrams show migration is predominantly focused into the Trym field to the west. The Middle Jurassic, Alfr structure (Figure 3) at the northern end of the sub-basin is well situated to receive charge but is volumetrically insignificant.

Upper Jurassic source rocks also reach maturity within the PL725 sub-basin and charge is similarly focused towards the Trym field. The Upper Jurassic sub-crops the BCU to the east of the Trym field and the potential exists for hydrocarbons to be trapped on the flank of the Trym structure, outside the PL725 license area. The 3/7-7 well aimed to test this concept, encountering shows, a volume may remain up-dip.

In addition to the regional petroleum systems work, detailed mapping and seismic attribute modelling was completed over the license. Rock physics modelling indicated that there was moderate to poor potential for discrimination between lithologies (Middle Jurassic sands and shales). The slight differences observed in the log domain, would be relatively quite subtle in the seismic domain. Attribute analysis using high definition frequency decomposition, geologically consistent extraction surfaces and facies mapping, identified several depositional systems within the Bryne Formation, J62 and J71-73 intervals. Unfortunately, these systems were either not extensive enough or are not accompanied by appropriate trapping mechanisms to develop any material prospectivity.

4. PROSPECT UPDATE

At the time of application multiple leads were identified at Middle/Upper Jurassic, and Tertiary levels. The primary lead in the licence, Thakk, is within the Upper Jurassic (J64) play and comprises a conceptual stratigraphic trap. Limited structural closure can be defined at the Middle Jurassic level comprising the Alfr and Shax leads. Superposition of the Thakk and other (J62 and older) Upper Jurassic basin floor fans over these closures provides the potential for stacked pays. The trapping configuration of the Upper Jurassic basin floor fan sands is conceptual, with seismic attributes providing limited support for reservoir distribution. The resource potential of the structural closures is negligible and for this reason no prospective resource has been calculated for these leads. It is now understood that the play has arguably been tested (at least on the western flank of the sub-basin) by the 3/7-6 and 3/7-7 wells which encountered good sands with oil shows.

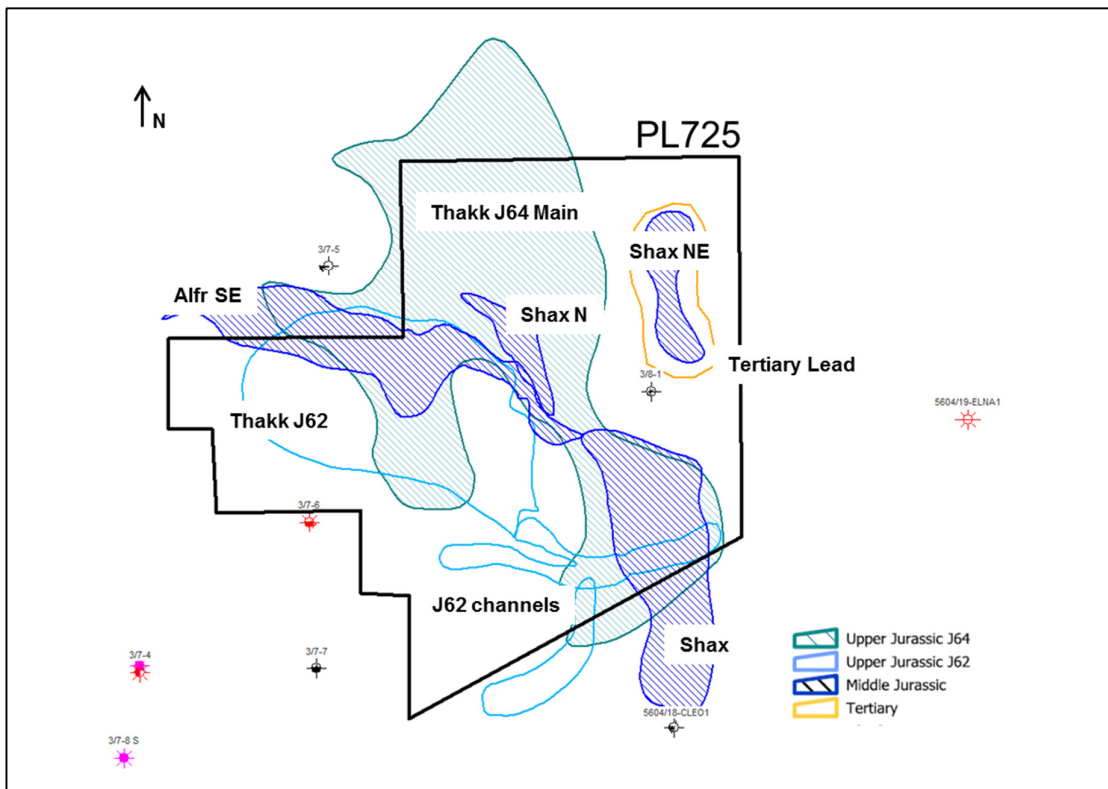


Figure 3. Leads identified in the PL725 licence for APA application

Alfr SE lead

Alfr SE is located in blocks 3/7 and 3/8 on the downfaulted margin of the 3/7-5 structure. At the northern limit of Alfr SE, the reservoir is offset by downfaulting from borehole 3/7-5; while to the south, the Middle Jurassic reservoir pinch out onto the underlying Triassic to the east. The regional basin modelling study suggests that although the three source facies in the area are likely mature, there is likely limited expulsion of hydrocarbons. Migration risk, which was an area of uncertainty at the time of the application, remains high as a result. Due to the present day shape of the Søgne basin it is difficult to construct a robust trapping mechanism for this lead. Very small areas are trapped against the bounding fault and pinch-out edges, but the lead lies parallel to the structure,

with the majority of the prospect open to the NW. Results from seismic attributes do not indicate a major change in facies that could invoke a stratigraphic trap to the NW. As a result this Alfr has been downgraded to a lead without any material resource potential.

Shax lead

The Shax lead is located in block 3/8, straddling the Norwegian-Danish border, on a series of downthrown terraces at the junction of the Coffee Soil Fault and a major splay. The area of interest is located down-dip of well 3/8-1 and up-dip of the Danish borehole, 5604/18-CLEO1. CLEO1 contains residual hydrocarbons in Jurassic sandstones and significant coal-bearing intervals, suggesting Shax is located in a favourable position for hydrocarbon migration. The absence of Middle and Upper Jurassic sandstones in the up-dip 3/8-1 borehole, testifies to a potential stratigraphic trapping at these reservoir levels in Shax. The lead area comprises multiple downthrown fault blocks and associated potential compartmentalisation is a risk. It has not been possible to map or describe the pinch-out at Jurassic level in any detail and the lead remains conceptual.

Thakk

Thakk comprises a set of Upper Jurassic turbidite and leads, located in blocks 3/7 and 3/8. It can be divided into a number of components representing differing trapping scenarios and styles.

Thakk J64 Main

This feature was originally classified as a prospect at J64 level. Further seismic interpretation on the new licence data set demonstrated that no trap is present and this prospect has subsequently been removed from the inventory

Thakk J62 Lead

Thakk J62 is a combination structural-stratigraphic trap. It comprises c. 8 km² of 3-way dip closure in combination with stratigraphic pinch-out of J62 sandstones, which have been encountered in wells 3/7-6 and 3/7-7. The structure of Thakk J62 is mapped at the J62 maximum flooding surface (MFS). Migration risk remains high as demonstrated by the regional basin modelling results. Seismic attribute analysis suggests a much larger fan system than identified during the licensing round. Although there is some support for stratigraphic pinch out to the NE, the larger fan requires further stratigraphic or structural trapping to the south which has not been demonstrated. Due to the geometry of the Søgne basin, there are only very small areas which could be considered structurally trapped against the main bounding fault. As a result this remains a lead without any material resource potential.

Thakk Channel Leads

A number of depositional features revealed by spectral decomposition of the J62 to top Middle Jurassic interval were identified during the licensing round. These leads have been refined through seismic attribute analysis, but remain immaterial in terms of size and resource potential. Although they appear to have potentially valid trapping mechanisms, migration risk also remains high as demonstrated by the basin modelling study, and these could only be of interest to augment another much larger prospect.

5. CONCLUSIONS

As a result of the work programme, prospects identified during the licensing round have been downgraded to leads. Without any material resource potential currently described for these leads the partnership sees no prospective drilling candidates remaining within the license area

The technical and economical evaluation of PL725 has failed to mature any material prospectivity and a decision not to drill a well on the license was unanimously taken by the partnership.