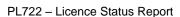


Page 1 of 20

# PL 722 – Licence Status Report





Valid from: 01.01.2022 Rev. no.

### **Summary**

The original PL722 acreage included the two blocks 7322/6 and 7323/4 located about 40 km W-NW of the Wisting and Hanssen discoveries (Figure 1). The licence was partially relinquished in 2020, and the remaining licence acreage was 293.23 km² until the end of 2021. Well 7322/6-1 S was drilled in April-May 2021, and three prospects situated at the Shenzhou horst were tested, (1) the Snadd Carnian channel and (2) the Ladinian delta prospects, and (3) the Early Permian Ørn Formation/Gipsdalen Group carbonate buildups. The results were negative for all target levels and the well is classified as dry. Sandstones with oil shows were encountered in the Snadd Carnian channel, which are good indications of migrated oil from the underlying Steinkobbe Formation proven in the well. However, trap seal may have failed due to leakage by reactivation of the eastern bounding fault. The reservoir quality found at both the target levels in the Snadd Formation is characterized as poor to very poor. At the Early Permian target level dolomitized carbonate buildups was penetrated, but there were no indications of a working Paleozoic petroleum system. Due to the negative results of Well 7322/6-1 S the remaining prospectivity within PL722 is basically related to the Lower-Middle Jurassic Realgrunnen Subgroup/Stø Formation and Upper Triassic Snadd Norian sheet sand. Currently no drilling candidates are identified due to small volumes and relatively low probability of success.



Valid from: 01.01.2022

## Rev. no.

## **Table of contents**

1	Licence history	. 4
2	Database overview	. 6
2.1	Seismic data	. 6
2.2	CSEM data	. 6
2.3	Well data	. 6
2.4	Studies	. 6
3	Results of geological and geophysical studies	. 7
4	Prospect update report	11
5	Technical evaluation	17
6	Conclusion	17

Doc. No. 2022-013293

Valid from: 01.01.2022 Rev. no.

## 1 Licence history

Licence: PL722

**Awarded:** 21.06.2013

**<u>Licence period:</u>** Initial period; 21.06.2013 – 21.06.2019

Initial extended; 22.06.2019 – 21.12.2019 Initial extended; 22.12.2019 – 21.06.2021 Initial extended; 22.06.2021 – 21.06.2022

<u>Licence group:</u> Equinor Energy AS 45% (Operator)

Aker BP ASA 20% Lundin Energy Norway AS 20% Sval Energi AS 15%

<u>Licence area:</u> Initial area: 585.618 km<sup>2</sup>

Current area: 293.679 km<sup>2</sup>

Work programme: Acquire 3D seismic covering the awarded licence acreage, and further consider

acquisition of EM data. Drill or drop decision within 21.06.2017. If drill decision, drilling of an exploration well to be fulfilled within five years from award. Drilling was decided in 2017, however the drilling operation was postponed two times due to H<sub>2</sub>S issues to be

solved and finally once in 2020 due to the Covid-19 pandemic.

**Meetings held:** 

29.11.2016 ECMC Engie (last meeting)

28.03.2017 ECMC Statoil (first meeting as operator)

18.05.2017 EC Work meeting

06.06.2017 ECMC 28.11.2017 ECMC

16.01.2018 EC Work meeting, H<sub>2</sub>S PL858

31.01.2018 ECMC 19.06.2018 ECMC 18.09.2018 ECMC

22.10.2018 EC Work meeting

12.12.2018 ECMC

 $\begin{array}{lll} 25.01.2019 & \text{H}_2\text{S D\&W Workshop} \\ 25.01.2019 & \text{H}_2\text{S Geology Workshop} \end{array}$ 

18.02.2019 EC Work meeting IFPEN H<sub>2</sub>S start-up

26.03.2019 ECMC

14.06.2019 EC Work meeting H<sub>2</sub>S

17.06.2019 ECMC

01.10.2019 EC Work meeting

20.11.2019 ECMC

13.02.2020 Core workshop

27.03.2020 Extraordinary MC meeting

23.04.2020 ECMC



Valid from: 01.01.2022 Rev. no.

04.11.2020	ECMC
18.03.2021	ECMC Work meeting, IOWP
24.06.2021	ECMC
04.11.2021	ECMC

#### Work performed

Acquisition of 3D seismic covering the licence blocks. Seismic interpretation and evaluation of Jurassic/Triassic/Paleozoic prospects and plays. EM data has been interpreted with regards to evaluation of the prospectivity. Field development studies on the Shenzhou Ladinian delta prospect were performed. Evaluation of the risk for H<sub>2</sub>S in the Gipsdalen Group, a potential drilling hazard, was carried out as a part of the well planning. Drilling of an exploration well, 7322/6-1 S (Shenzhou, NPDID 9285), was completed 28<sup>th</sup> of May 2021. Evaluation of the remaining prospectivity in light of the well results has been finalized. The postwell studies were completed early 2022. The work obligation is thereby fulfilled.

#### Partial relinquishment

The licence acreage was partially relinquished from 01.08.2020. The retained area was 293.23 km<sup>2</sup> and the relinquished area 292.05 km<sup>2</sup>.

#### Reason for surrender

The licence partners have unanimously decided to let the licence lapse by the end of 2021, even though the expiry of the extended initial period is on 21<sup>st</sup> of June 2022. This is due to the negative results of Well 7322/6-1 S (Shenzhou) and thereby the limited remaining prospectivity within the licence.

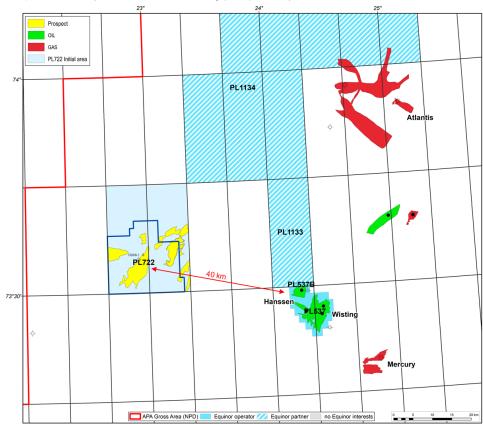


Figure 1. Licence overview showing PL722 together with surrounding licences and the Wisting discovery. Remaining Jurassic prospects (yellow) within PL722 are indicated.



Valid from: 01.01.2022

Rev. no.

#### 2 Database overview

#### 2.1 Seismic data

The common seismic database consists of 3D seismic, 3D swath high resolution seismic (P-cable) and released 2D data (Figure 2). The 3D seismic surveys, HF13 and HFCW11, was acquired by TGS and covers the entire original PL722 acreage. The site survey, ST17324-HR/UHR, was acquired on Shenzhou.

#### 3D data:

- HF13 covers an area of 141 km<sup>2</sup>: Full stack and angle stacks (NPDID: 7791).
- HFCW11 covers an area of 457 km<sup>2</sup>: Full stack and angle stacks (NPDID: 7424).
- HFC11\_CFI\_4ms within PL722: Broadband reprocessing and merge of the 3D surveys HFC09, HFCE11, HFCW11 and HFCNW13: Full stack and angle stacks.
- Re-processed seismic (CGG): HFC-MERGE-GDFR15-PL722 which is covering an area of 585 km<sup>2</sup>, combines both the HF13 and HFCW11 surveys.
- P-cable: 3D swath: SEN1201-A2 covers 19.2 km<sup>2</sup> (NPDID: 7666).

#### 2.2 CSEM data

The CSEM survey BSMC12H is included in the common database for PL722 with full coverage of the original licence acreage, the blocks 7322/6 and 7323/4 (Figure 2). The data was acquired by EMGS in 2012. EMGS inversion volumes from 2012, 2014 and 2015 are included in the common database as well.

The EMGS data covers the two PL722 blocks:

- BSMC12H (blocks 7322/6 and 7323/4)
- Inversion volumes from 2012, 2014 & 2015

#### 2.3 Well data

The common well database consists of Well 7322/6-1 S (Shenzhou; NPDID 9285) drilled in PL722 in 2021 and all released exploration wells drilled in the Hoop area, which are all relevant for the geological understanding and evaluation of the prospectivity within PL722. Well 7324/7-2 (Hansen) and the wells in the Fingerdjupet Subbasin, 7321/9-1 and 7321/7-1, were used for well tie. Paleozoic tie was from Well 7225/3-1 (Norvarg). Well 7322/6-1 S (Shenzhou) targeted two prospects in Snadd Formation and one in Ørn Formation, and it had great impact on the evaluation of the remaining prospectivity and finally the relinquishment decision of PL722.

#### 2.4 Studies

The common data base is including the following studies:

- IKU SINTEF Stratigraphic Drilling Projects 1982-1993
- Barents Sea Regional Physics Study including fluid substitution, seismic modelling and AVO analyses for 79 wells.



Valid from: 01.01.2022 Rev. no.

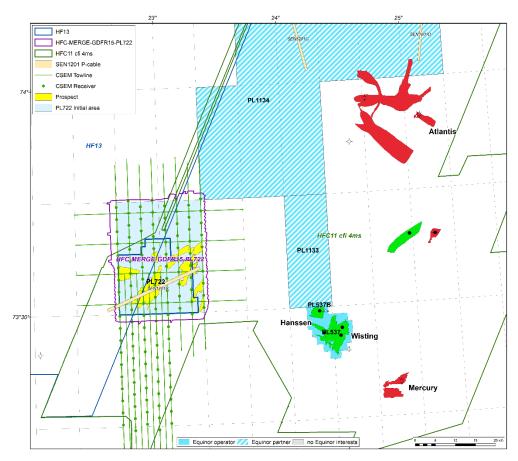


Figure 2. Common 3D seismic and CSEM database for PL722. The common 3D seismic consists of HF13, HFCW11, HFC11\_CFl\_4ms within the original licence acreage, and the reprocessed survey HFC-MERGE-GDFR15-PL722 combining HFCW11 and HF13. This survey covers both the 7322/6 and 7323/4 blocks (585 km²), whereas the P-cable 3D swath SEN1201-A2 covers an area of 19.2 km². The CSEM survey BSMC12H is included in the common database with full coverage of the original licence acreage.

## 3 Results of geological and geophysical studies

Well 7322/6-1 S (Shenzhou) has provided valuable data with regards to the understanding of the prospectivity of the PL722 area. A brief summary is given in the following subsections.

#### **Source and Migration**

The Lower-Middle Triassic Steinkobbe Formation source rock is the main source for hydrocarbons on the northwestern Bjarmeland Platform (Hoop area). The source rock contains mixed marine and terrestrial kerogen with good to very good richness. At maximum burial it is wet-gas mature in the PL722 area. The Steinkobbe Formation was encountered in Well 7322/6-1 S at 2213 m TVD MSL with a thickness of 94 m. In addition, the Lower Triassic Klappmyss Formation (2306.3 to 2414.3 m TVD MSL) is also showing good to very good source rock richness at well location. Good indications of migrated oil were found in the overlying Snadd Carnian channel sandstones which can be correlated to the Steinkobbe Formation. Additional source potential was assumed within the Late Permian Ørret Formation, however this formation was not encountered at well location. A significant carbon isotope shift in the organic matter, from -24 to -25 ‰ in the Paleozoic succession to -27 to -31‰ in the Lower and Middle Triassic shale suggest a significant shift in organic matter origin, i.e. from more terrigenous in the Paleozoic succession to more marine conditions with the Lower and Middle Triassic. The low gas readings in Well 7322/6-1 S in the Permo-Carboniferous succession suggest absence of



Doc. No. 2022-013293

Valid from: 01.01.2022 Rev. no.

any effective Paleozoic source rocks, and hence a non-working petroleum system for this part of the stratigraphy.

#### **Reservoir Quality**

The Middle Jurassic Stø Formation constitutes the main reservoir unit, and it has been the main target for almost all the exploration wells in the Hoop area. Good to excellent reservoir properties have been proved through comprehensive analyses of core data and petrophysical evaluations. In Well 7322/6-1 S a 35 m thick sandy unit of Realgrunnen Subgroup was penetrated in the top hole with returns to seabed and only with MWD-logs available. The Stø Formation is almost 12 m thick and believed to have at least moderate to good reservoir quality.

The Snadd Formation of Late to Middle Triassic age has basically reservoir potential at several levels within the PL722 area, in which two of these were defined as targets for the well. In the Carnian channel (target 1) finegrained sandstones with good oil shows were encountered in Well 7322/6-1 S. The reservoir quality is characterized as poor possibly to moderate with gross thickness of 31.2 m, NTG of 0.64 (net reservoir: 20 m), and average porosity and permeability of respectively 16% and 11.4 mD with 0.1 mD permeability cut-off. Calculated parameters for producibility of oil (>1 mD) reduces the net reservoir to 9.6 m with NTG of 0.31, and average porosity and permeability of respectively 18% and 23.3 mD. By using dual packer a water sample was obtained in lower part, but fluid sampling in the upper part failed due to thight formation. The reservoir quality is challenging with reasonable porosity, but mostly with moderate to poor permeability which have negative impact on the producibility. In the Ladinian delta (target 2) silty, very fine grading upwards to fine-grained sandstones with gross thickness of 24.1 m were penetrated in Well 7322/6-1 S. No net reservoir was recorded based on calculations using 0.1 mD as permeability cut-off. The Snadd target reservoirs have likely experienced maximum burial of ~3500 to 3700 m (>140°C). Diagenesis in combination with presence of porefilling mud and mechanical compaction have reduced the reservoir quality significantly, with the most damaging impact on the Ladinian delta sandstones. The uppermost Snadd Norian sheet sandstone unit, which possibly consists of beach/marine bar sand deposits, was encountered in Well 7322/6-1 S with gross thickness of 11 m. The sand is described as argillaceous and very fine to fine-grained. Based on the experiences from previously drilled wells in the Hoop area, the reservoir quality is expected to be challenging. Together with the low hydrocarbon saturation observed in the Hoop wells, reservoir quality is considered as the main risk for the Triassic play in the PL722 area.

In Well 7322/6-1 S a reservoir unit of Early Permian age consisting of dolomitized carbonate buildups with gross/net thickness of 137.6/70.6 m was encountered (target 3). The reservoir quality is characterized as poor to moderate with NTG of 0.51, average porosity of 9% and average matrix permeability of 4.3 mD (permeability cut-off 0.1 mD). No shows were detected. Based on attribute mapping a rough estimate suggests that carbonate buildups constitutes approximately 30% of the area within the structural closure. The upper part of Gipsdalen Group (thickness: 141 m) consists of thight limestones which are almost unaffected by dolomitization. The Gipsdalen carbonates have likely experienced a maximum burial of >5000 m (>180°C), and thereby exposed to extensive diagenesis due to high temperatures.

#### Trap and Seal

The remaining prospectivity in PL722 is basically related to the Lower-Middle Jurassic Realgrunnen Subgroup and the Upper Triassic Snadd Formation sheet sand unit, in which the traps mostly are 3-way dip closures situated at faulted horst blocks. At Realgrunnen Subgroup level the vertical seal is provided by the Fuglen and Hekkingen formations shales. Laterally along bounding faults some horsts may be sealed by younger Lower Cretaceous shales of the Knurr/Kolje/Kolmule formations, e.g. the Shenzhou Main and Shenzhou East prospects. However, for the Shenzhou Main prospect situated updip Well 7322/6-1 S which is having the largest oil potential, the trap seal at the crest is provided by a thin Fuglen Formation as well as the overlying Quaternary deposits of the Nordland Group (Figure 5c, d). The total overburden at the apex is only approximately 70 m. Shenzhou North is situated at a downfaulted block towards north where the trap is



Doc. No. 2022-013293

Valid from: 01.01.2022 Rev. no.

contingent of lateral seal along the bounding fault due to juxtaposition of the Realgrunnen reservoir to the sandy Upper Snadd Formation (Figure 6b). The Upper Snadd Formation sheet sand appears as a parallel unit to the Realgrunnen Subgroup (Figure 5c, d; Figure 7a, b), and the traps are therefore defined as 3-way dip closures at the same horst blocks. Cap seal is provided by the Lower Fruholmen shaly unit, and lateral seal along the bounding faults by Fuglen/Hekkingen. Shales of the Lower Cretaceous Knurr/Kolje/Kolmule formations may provide lateral seal as well, e.g. as for the Shenzhou Snadd East Main and Shenzhou East-2 prospects. The Shenzhou West Snadd prospect is situated at a downfaulted block towards west, and it is displaying strong amplitudes shutting-off along the eastern bounding fault (Figure 8). The reservoir unit is juxtaposed to deeper and sandy parts of the Snadd Formation, hence the trap is contingent of lateral seal along the fault.

The Realgrunnen Subgroup is normally pressured in all the Hoop wells. Slightly under-pressured reservoirs are proven in traps of Ladinian to Carnian Snadd channel sandstones, hence suggesting presence of a strong vertical pressure barrier. In Well 7322/6-1 S good oil shows were detected in the slightly under-pressured Snadd Formation Carnian channel sandstones, which indicate migration of oil into this reservoir level. Internal Snadd Formation cap seal may have been provided by marine influenced transgressive shales/mudstones and muddy floodplain deposits. However, in the case of an oil accumulation later reactivation of the western long-lived bounding fault of the Shenzhou block may have caused leakage.

#### Geological studies

In 2018  $H_2S$  was identified as a potential drilling hazard regarding the Gipsdalen Group target. The licence decided to investigate this topic in order to understand whether the conditions for  $H_2S$  generation prevailed on Shenzhou, evaluate the risk with regards to thermo-sulphate reduction (TSR) and predict the amounts of generated  $H_2S$  that potentially could be present in the carbonate reservoir. The study was carried out by IFP Energies Nouvelles (2019), "*Prognosis of H\_2S in the Shenzhou prospect*". Post-well studies on Well 7322/6-1 S (2021) are including biostratigraphy, petrophysical evaluation, core descriptions (core #1-2), petrological investigations of 25 thin sections from the Snadd Formation (core #1-2, XL rocks samples) and 10 from the Ørn Formation carbonate build-ups (cuttings) as well as geochemistry analyses. The latter analyses include maturity analyses (vitrinite), mud gas analyses, source rock and migrated hydrocarbon screening, including HCS for core #1, and detailed biomarker analyses on selected samples. In addition fluid inclusion stratigraphy (FIS) was performed on all ditch cuttings samples of the 8  $\frac{1}{2}$ " and 6" sections.

#### Geophysical studies

The seismic data have been analysed with regards to attributes/amplitudes and AVO responses, both absolute and relative. I the Hoop area hydrocarbons are proven to be visible on seismic in both for the Jurassic reservoirs and partly for the Triassic reservoirs. Seismic 3D data have been reprocessed (CGG), HFC-MERGE-GDFR15-PL722 (585 km², combining both surveys). A new velocity model with calibration to nearby wells has been made.

CSEM data has been inverted using an internal Statoil 3D Gauss Newton inversion of the EMGS 7322/6 & 7323/4 CSEM dataset:

- GN not very dependent on good starting model
- Including more frequencies results in better separation between shallow and deep resistive bodies
- Efficient algorithm, requiring fewer iterations



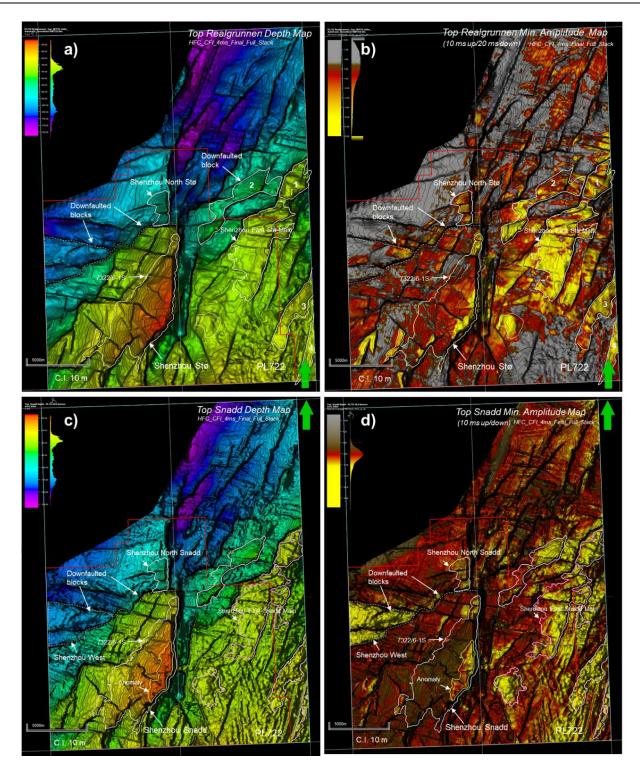


Figure 3. A compilation of structural depth maps (a, c) and minimum amplitude maps (b, d) respectively at Top Realgrunnen Subgroup and Top Snadd Formation level. Prospect outlines at Top Realgrunnen Subgroup are indicated for Shenzhou Stø, Shenzhou North, Shenzhou East Stø Main as well as the smaller Shenzhou East Stø prospects numbered from 1 to 4. Outlines of 3-way dip closures are indicated at the Top Snadd Formation, but only Shenzhou East Snadd Main and Shenzhou West are resource assessed and defined as prospects. The yellow outline indicates a potential gas accumulation updip Well 7322/6-1 S (c, d).



Doc. No. 2022-013293

Valid from: 01.01.2022 Rev. no.

### 4 Prospect update report

Equinor's prewell prospects tested by Well 7322/6-1 S are shown in Figure 4, and the resource potential for these are given in Table 1. Well 7322/6-1 S tested three prospects situated at the Shenzhou horst, the Snadd Carnian channel and the Ladinian delta prospects, and the Ørn Formation/Gipsdalen Group carbonate buildups which was encountered by deviated drilling in the deepest part of well bore (Figure 4g). At both the target levels tested in the Snadd Formation some untested segments are identified (Figure 4a-d). However, poor reservoir quality is expected also for these. The Gipsdalen Group carbonates was tested in an optimal position with regards to reservoir properties as well as close to the apex of the structure. Indications of a working Paleozoic petroleum system was not found. The test of these prospects and plays are thereby considered as valid, which means that there is almost no remaining hydrocarbon potential left at these levels within PL722. Due to the negative results of Well 7322/6-1 S (Shenzhou) the remaining prospectivity within PL722 is basically related to the Lower-Middle Jurassic Realgrunnen Subgroup/Stø Formation and Upper Triassic Snadd Norian sheet sand (Figure 3). Most of these prospects have been mapped and resource assessed during postwell evaluation in 2021.

The Lower-Middle Jurassic Realgrunnen prospects are shown in Figure 5, Figure 6 and Figure 7, in which the untested Shenzhou Stø is the prospect with largest oil potential (Table 2). Well 7322/6-1 S encountered Top Stø Formation almost 4 m deeper than the mapped spill point. Attribute maps are showing strong amplitudes at the crest which are shutting off with good depth conformance at 530 m (Figure 5b). However, medium strong amplitudes are observed between the spill contour at 671 m and the strong amplitudes at the crest (Figure 5b). Even though the medium strong amplitudes are displaying a weaker depth conformant shut-off, presence of an oil zone below a gas cap is possible (mean thickness of 113 m). The mean recoverable oil volume based on multiple phase is 6.2 MSm<sup>3</sup> with 16% probability of success (Table 2). The main risk is attached to trap seal due to the thin Fuglen Formation draping at apex and overlain by the Quaternary Nordland Group providing a total overburden of approximately 70 m (Figure 5c, d). Risk is also related to reservoir presence with regards to gross thickness of the Stø Formation (average of 12 m in well) as well as producibility due to the expected low temperature. The Shenzhou Stø is currently not considered as a valid drilling candidate due to the small recoverable volumes and the high risk. Shenzhou North Stø is a smaller prospect situated at a downfaulted block to the north (Figure 6b), displaying medium strong amplitudes with pretty good depth conformant shut-off at around 915 m (Figure 6a). The mean recoverable oil volume based on single phase is 2.0 MSm<sup>3</sup> with 13% probability of success for oil (Table 2). Juxtaposition of the Stø reservoir along the bounding fault towards the sandy upper Snadd Formation, provides high trap seal risk. Within the eastern block 7323/4 five prospects at Realgrunnen level have been defined and resource assessed (Table 2; Figure 7). These are based on 3-way dip closures and strong amplitudes, but they are displaying variable depth conformant shut-off with some bleeding outside mapped spill contours (Figure 7). Shenzhou East Stø Main has a mean recoverable oil volume of 4.1 MSm<sup>3</sup> based on single phase, and this is the prospect with the largest oil potential within block 7323/4. The probability of success for hydrocarbons is evaluated to be 32% and 12% for oil (Table 2). Due to the amplitude strength DHI uplift is given to the gas case, whereas oil is given downgrade. The main risk is also for the Shenzhou East prospects related to trap seal, but the risk is lower than for the other prospects at Stø Formation level due to the type of closures as well as the thicker overburden section.

Top Snadd Formation is quite parallel to the overlying Top Stø Formation, and thereby it reflects a similar structural terrain with closures at the same places as for Top Stø Formation (Figure 3). Strong amplitudes are identified and supporting presence of gas (Figure 3d), however in block 7323/4 these are also displaying variable depth conformant shut-off partly bleeding outside the spill contour. Two prospects at Top Snadd level have been defined, Shenzhou East Snadd Main (Figure 7) and the Shenzhou West Snadd (Figure 8). The mean recoverable oil volume of the Shenzhou East Snadd Main prospect is estimated to 1.1 MSm³ (Table 2). DHI uplift has been given to gas and downgrade to oil, which thereby gives probabilities of respectively 6% and 10%. The Shenzhou West Snadd prospect may contain a mean oil volume of 1.4 MSm³ within block 7322/6



Valid from: 01.01.2022

Rev. no.

(Table 2). Higher risk is related to trap seal due the juxtaposition of the reservoir to the sandy upper Snadd Formation along the bounding fault (Figure 8b, c).

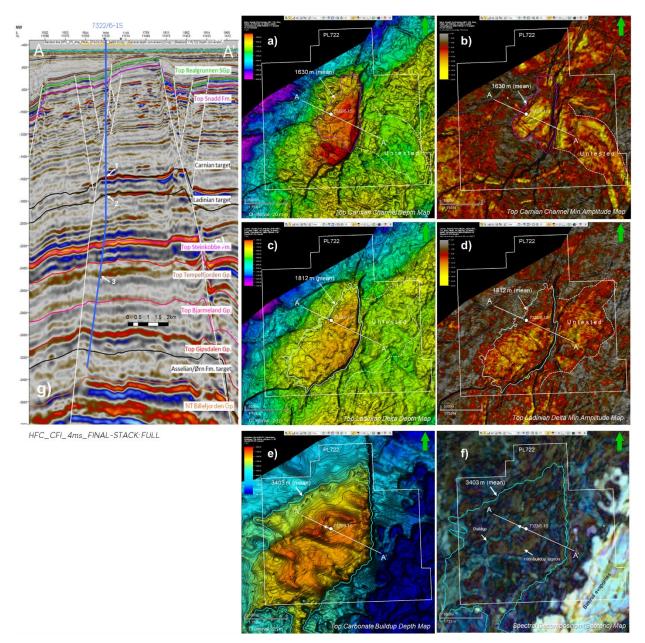


Figure 4. A compilation of structural depth maps (a, c, e) and attribute maps (b, d, f) for all the tested targets in Well 7322/6-1 S, and (g) a NW-SE seismic cross section through the well. The targets were the Snadd Formation Carnian channel prospect (a-b), the Snadd Formation Ladinian delta prospect (c-d) and the Ørn Formation/Gipsdalen Group carbonate buildups prospect (e-f). Notice that the well encountered a bluish area/ridge which is representing carbonate buildups (f). Untested segments in the Snadd Formation are indicated (a-d).



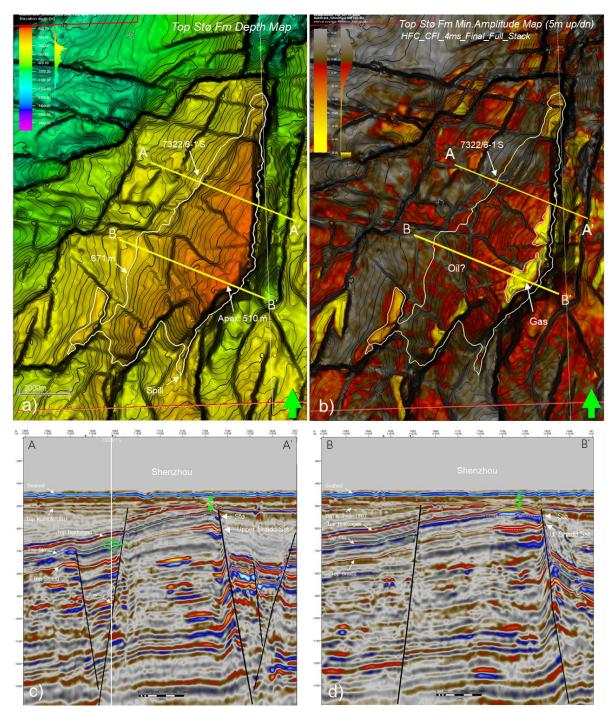


Figure 5. The Shenzhou Stø prospect shown at (a) structural depth map, (b) minimum amplitude map with prospect outline (spill contour in white), and (c, d) seismic cross sections. Note the amplitude strength and pattern within the closure (b). At the crest strong amplitudes are showing depth conformant shut-off, whereas intermediate amplitudes are shutting off at spill with some local brightening. The seismic sections (c, d) illustrate the limited overburden of the Stø Formation, which is approximately 70 m at apex (d). Well 7322/6-1 S encountered Top Stø Formation just outside the closure.



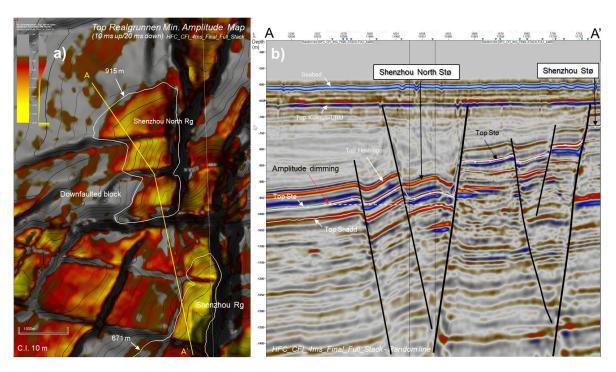


Figure 6. The Shenzhou North Stø prospect shown at (a) minimum amplitude map with prospect outline in white, and (b) a random seismic cross section. Notice the dimming of the strong amplitudes at approximately 915 m. The seismic section illustrates the juxtaposition of the Stø Formation reservoir along the sandy upper Snadd Formation situated at the main Shenzhou horst block.

Table 1. Overview of resource potential of the prewell prospects in PL722, in which three of these were tested by Well 7322/6-1 S. The Shenzhou Stø prospect\* was encountered 4 m downdip the 3-way structural closure defined at Top Stø Formation.

Prospect/Lead	Litho/Chrono- stratigraphic unit	Depth at apex (m)	Phase	In-place resources (MSm3/GSm3)			Recoverable resources (MSm3/GSm3)			Pg	P(oil)	P(gas)	Well
				P90	Mean	P10	P90	Mean	P10				target
Shenzhou Snadd Carnian Channel	Snadd Fm/Upper Triassic	1500	Oil	21.7	38.2	57.8	4.0	7.6	11.9	0.36	0.179		Yes
Prospect			Gas	4.5	7.9	12.0	2.2	4.0	6.0			0.181	
Shenzhou Snadd	Snadd Fm/Upper Triassic	1675	Oil	82.8	132.9	188.5	19.5	33.2	48.8	0.295	0.144		- Yes
Ladinian Delta Prospect			Gas	18.7	30.3	43.1	9.2	15.2	21.8			0.141	
Shenzhou Ørn Carbonate Buildups	Ørn Fm/Lower Permian	3065	Oil	85.7	203.5	375.3	19.6	51.2	98.1	- 0.107	0.011		- Yes
Prospect			Gas	37.6	89.1	161.4	16.5	40.2	73.3			0.096	
Shenzhou Stø Prospect*	Stø Fm/Lower-Middle Jurassic	511	Oil	12.3	25.5	43.0	3.6	7.6	12.9	- 0.068	0.037		- No
Shelizhoù Sty Prospect			Gas	0.2	1.7	3.8	0.1	0.7	1.5			0.057	



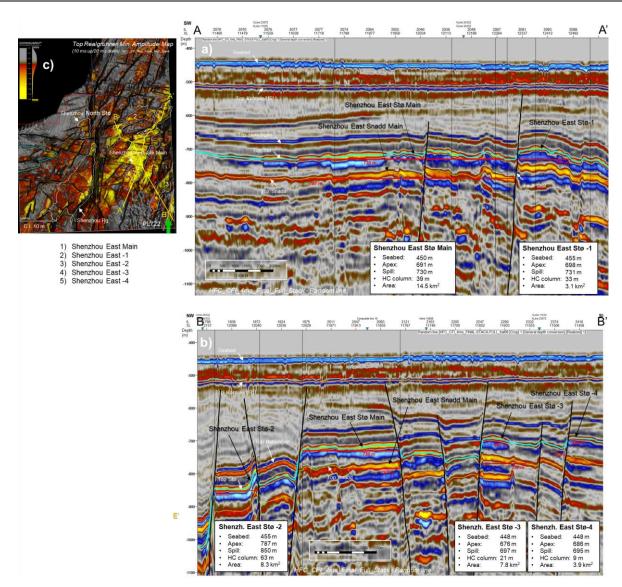


Figure 7. Random seismic sections crossing the Shenzhou East Stø prospects with some key information (a, b). The sections are indicated at the minimum amplitude map (c). Notice the strong amplitudes which roughly coincide with the structural closures at Top Stø Formation and Top Snadd Formation levels.



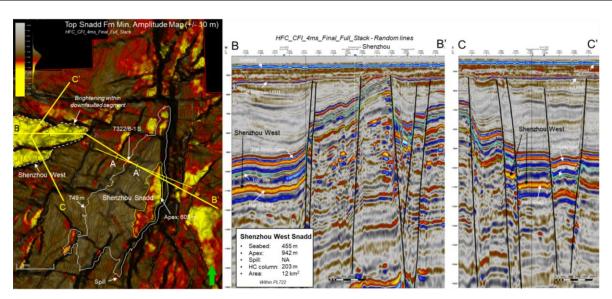


Figure 8. The Shenzhou West Snadd prospect shown at minimum amplitude map (left) with dashed prospect outline in white, and random seismic cross sections (right). Notice the strong amplitudes at Top Snadd Formation as well as the shut-off along the western bounding fault of the Shenzhou horst block.

Table 2. Overview of resource potential of remaining prospects in PL722 (see Figure 9). The Shenzhou Stø prospect which was encountered 4 m downdip the 3-way structural closure, is showing the largest oil potential.

Prospect/Lead	Litho/Chrono- stratigraphic unit	Depth at	Phase	In-place resources (MSm3/GSm3)				erable reso		Pg	P(oil)	P(gas)
		apex (m)		P90	Mean	P10	P90	Mean	P10			
Shenzhou Stø	Stø Fm/Lower-Middle Jurassic	510	Oil	26.8	36.5	47.4	4.0	6.2	8.8	0.16	0.16	
Prospect			Gas	0.11	0.24	0.38	0.04	0.09	0.15			0.16
Shenzhou North Stø	Stø Fm/Lower-Middle Jurassic	830	Oil	4.4	5.7	7.0	1.5	2.0	2.6	0.23	0.13	
Prospect			Gas	0.50	0.66	0.82	0.25	0.33	0.42			0.10
Shenzhou East Stø-	Stø Fm/Lower-Middle Jurassic	691	Oil	12.1	16.6	20.9	2.8	4.1	5.5	0.32	0.12	
Main Prospect			Gas	1.34	1.83	2.35	0.52	0.73	0.96			0.20
Shenzhou East Stø-1	Stø Fm/Lower-Middle Jurassic	698	Oil	3.7	4.5	5.3	0.8	1.1	1.4	0.32	0.12	
Prospect		698	Gas	0.40	0.50	0.60	0.16	0.20	0.25			0.20
Shenzhou East Stø-2	Stø Fm/Lower-Middle Jurassic	787	Oil	5.3	8.8	12.1	1.3	2.2	3.1	0.19	0.07	
Prospect			Gas	0.64	1.04	1.46	0.25	0.42	0.59			0.12
Shenzhou East Stø-3	Stø Fm/Lower-Middle Jurassic	676	Oil	0.3	3.3	6.8	0.1	0.8	1.7	0.32	0.12	
Prospect			Gas	0.04	0.39	0.81	0.02	0.16	0.33			0.20
Shenzhou East Stø-4	Stø Fm/Lower-Middle Jurassic	686	Oil	0.3	1.1	1.8	0.1	0.3	0.5	- 0.32	0.12	
Prospect		000	Gas	0.03	0.12	0.20	0.01	0.05	0.08			0.20
Shenzhou East Snadd-	- Snadd Fm/Upper Triassic	741	Oil	4.0	6.4	9.2	0.6	1.1	1.6	- 0.16	0.06	
Main Prospect			Gas	0.49	0.80	1.16	0.24	0.40	0.59			0.10
Shenzhou West	Snadd Fm/Upper Triassic	942	Oil	5.3	8.0	11.0	0.8	1.4	2.0	- 0.11	0.05	
Snadd Prospect			Gas	0.79	1.20	1.66	0.39	0.60	0.84			0.06



Valid from: 01.01.2022 Rev. no.

To summarize, the remaining prospectivity within PL722 is basically related to the Lower-Middle Jurassic Realgrunnen Subgroup and the Upper Triassic Snadd Norian sheet sand (Figure 9; Figure 3). The main oil prospects are Shenzhou Stø situated updip Well 7322/6-1 S with multiple phase and the Shenzhou North Stø at the downfaulted block to the north (Table 2). In block 7323/4 the Shenzhou East Stø/Snadd prospects are showing the highest oil potential, however due to the strong amplitudes these are most likely containing gas.

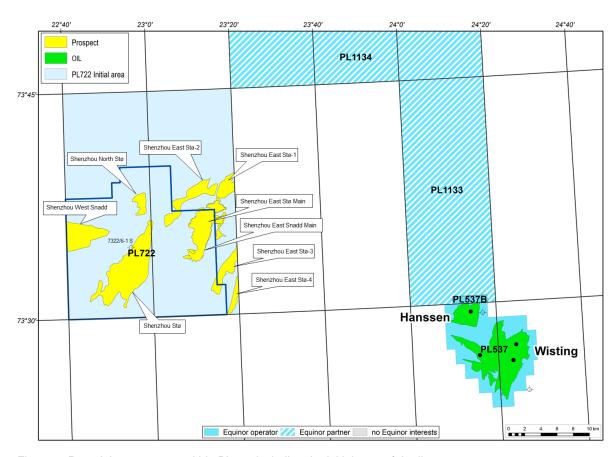


Figure 9. Remaining prospects within PL722 including the initial area of the licence.

#### 5 Technical evaluation

Technical evaluation has not been carried out for any of the remaining prospects within PL722. Currently no drilling candidates are identified due to small volumes and relatively low probability of success.

#### 6 Conclusion

The licence partners have unanimously decided to relinquish the licences by 1<sup>st</sup> of January 2022 although the initial extended period expire 21<sup>st</sup> of June 2022, due to limited remaining prospectivity and lack of drilling candidates.

Doc. No. 2022-013293

Valid from: 01.01.2022 Rev. no.

#### References

Equinor (2021). Biostratigraphy of Exploration Well NO 7322/6-1 S (Shenzhou), 760 - 3850 m (TD). 15 pp.

Equinor (2021). Petrography and Reservoir Quality Report, Well 7322/6-1 S (Shenzhou), PL722. 19 pp.

Equinor (2022). Final Well Report, NO 7322/6-1 S, Shenzhou. PL722. 226 pp.

Equinor (2022). Geochemistry Data Report NO 7322/6-1 S Shenzhou. Equinor Internal Report, 349 p.

Equinor (2022). Petrophysical Evaluation Report, Well 7322/6-1 S (Shenzhou). 25 pp.

Equinor (in prep.). Geochemistry Special Study for NO 7322/6-1 S Shenzhou. Equinor Internal Report.

IFE (2021). HCS<sup>™</sup> scanning of Well 7322/6-1 S Shenzhou. 20 pp.

Classification: Restricted Status: Final www.equinor.com





2022-013293 Valid from: 01.01.2022 Rev. no.

## **Appendices**

- 1. Top Realgrunnen Subgroup depth map, initial PL722 area
- 2. NPD form no 5, Shenzhou Stø prospect, oil and gas case (excel file)
- 3. NPD form no 5, Shenzhou North Stø prospect, oil and gas cases (excel file)
- 4. NPD form no 5, Shenzhou East Stø Main prospect, oil and gas cases (excel file)
- 5. NPD form no 5, Shenzhou East Stø-1 prospect, oil and gas cases (excel file)
- 6. NPD form no 5, Shenzhou East Stø-2 prospect, oil and gas cases (excel file)
- 7. NPD form no 5, Shenzhou East Stø-3 prospect, oil and gas cases (excel file)
- 8. NPD form no 5, Shenzhou East Stø-4 prospect, oil and gas cases (excel file)
- 9. NPD form no 5, Shenzhou East Snadd prospect, oil and gas cases (excel file)
- 10. NPD form no 5, Shenzhou West Snadd prospect, oil and gas cases (excel file)



Doc. No. 2022-013293 Valid from: 01.01.2022

2022 Rev. no.

1. Top Realgrunnen Subgroup depth map covering the initial PL722 area. Outlines of prospects at Realgrunnen Subgroup level is indicated (white outlines).

