

PL934 Relinquishment Report

1. Background

PL934 is located in the Froan Basin, east of the Frøya High where Lundin holds additional acreage, see fig 1.

The license was awarded on March 2nd 2018 to Lundin (operator, 40%), Equinor, Neptune and Petoro (partners, 20% each). The work obligation was to acquire 3D-seismic and to carry out G&G studies within three years prior to the decision to drill or drop (DOD; March 2nd 2021). 3D survey PGS17007 was acquired (purchased) by the license in 2018 and G&G work and studies have been performed, thus the work obligations are fulfilled.

A key well (6307/1-1S Silfari) was drilled by the same partner group in the adjacent PL830 in late 2018. One of the main objectives of that well was to seek evidence for a Palaeozoic source kitchen, which was needed to charge prospects in the PL934 license. No supporting evidence of such a kitchen was encountered, thus PL934 prospectivity remained too high risk with regards to charge to support a positive drill decision.

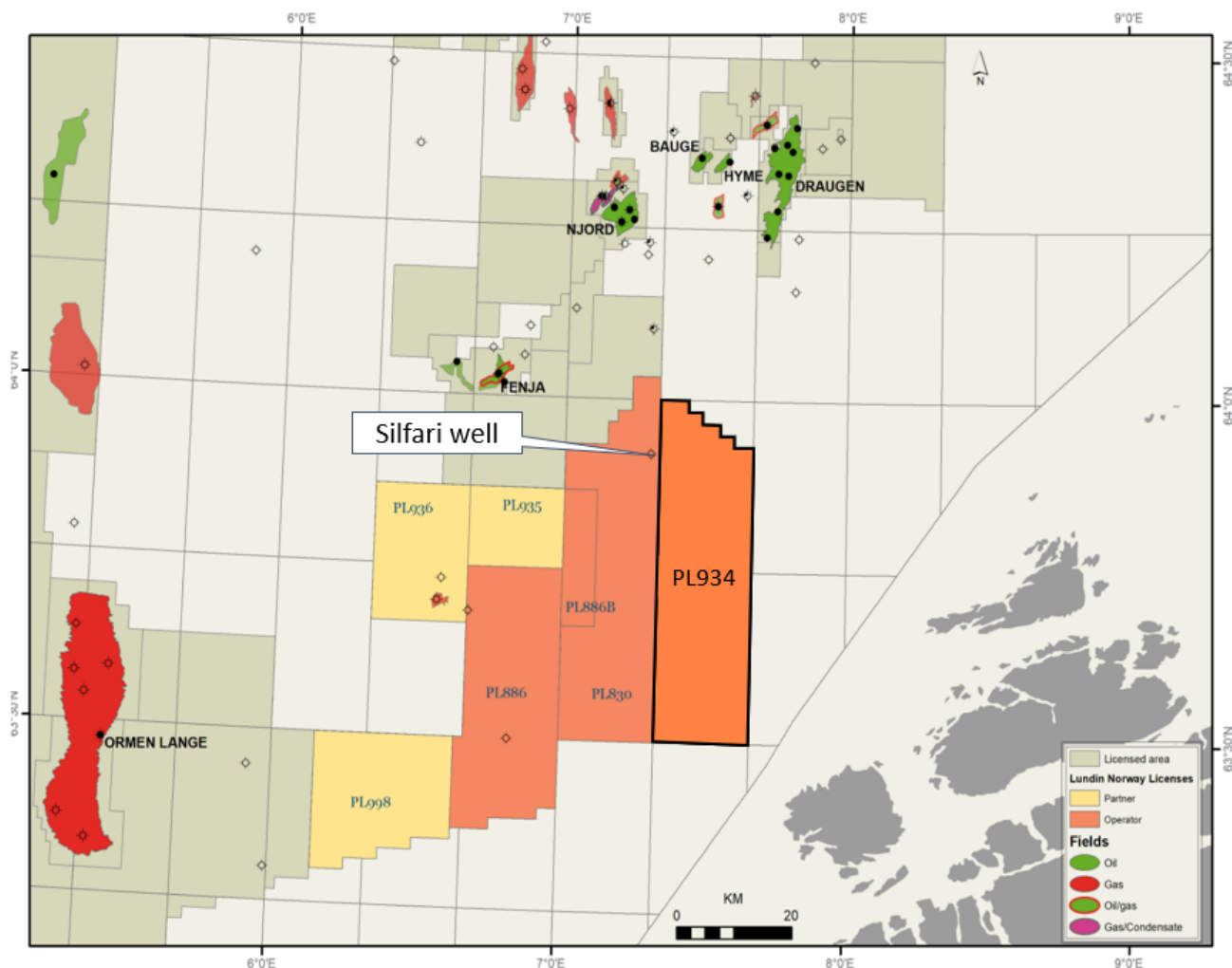


Figure 1: Location of PL934

Meetings held are listed below. Most of the G&G work for and meetings in the license were carried out in cooperation with the neighbouring PL830 (which has the same licence group).

Committee	date
MC/EC combined	19 th April 2018
MC/EC combined	30 th November 2018
MC/EC combined	4 th November 2019
MC/EC combined	6 th May 2020
MC/EC combined	20 th November 2020

Table 1: License Committee meetings held in PL934

2. Common databases

The common seismic database is shown in fig. 2 and listed in table 2, and the common well database is shown in fig. 3 and listed in table 3. Only parts of the surveys within the license boundary plus 2 km outside were included in the common seismic database.

No new wells have been drilled in the PL934 license, but key well 6307/1-1S was drilled (by the same Partner Group) in adjacent PL830 in late 2018 and it had a fundamental impact on PL934 decision because it did not de-risk the hydrocarbon charge play risk element in the Froan Basin.

The assessment of the license was done in parallel with work in adjacent Frøya High licenses, which put the understanding of PL934 into its proper regional context and it benefitted from the regional seismic and well databases associated with those licenses.

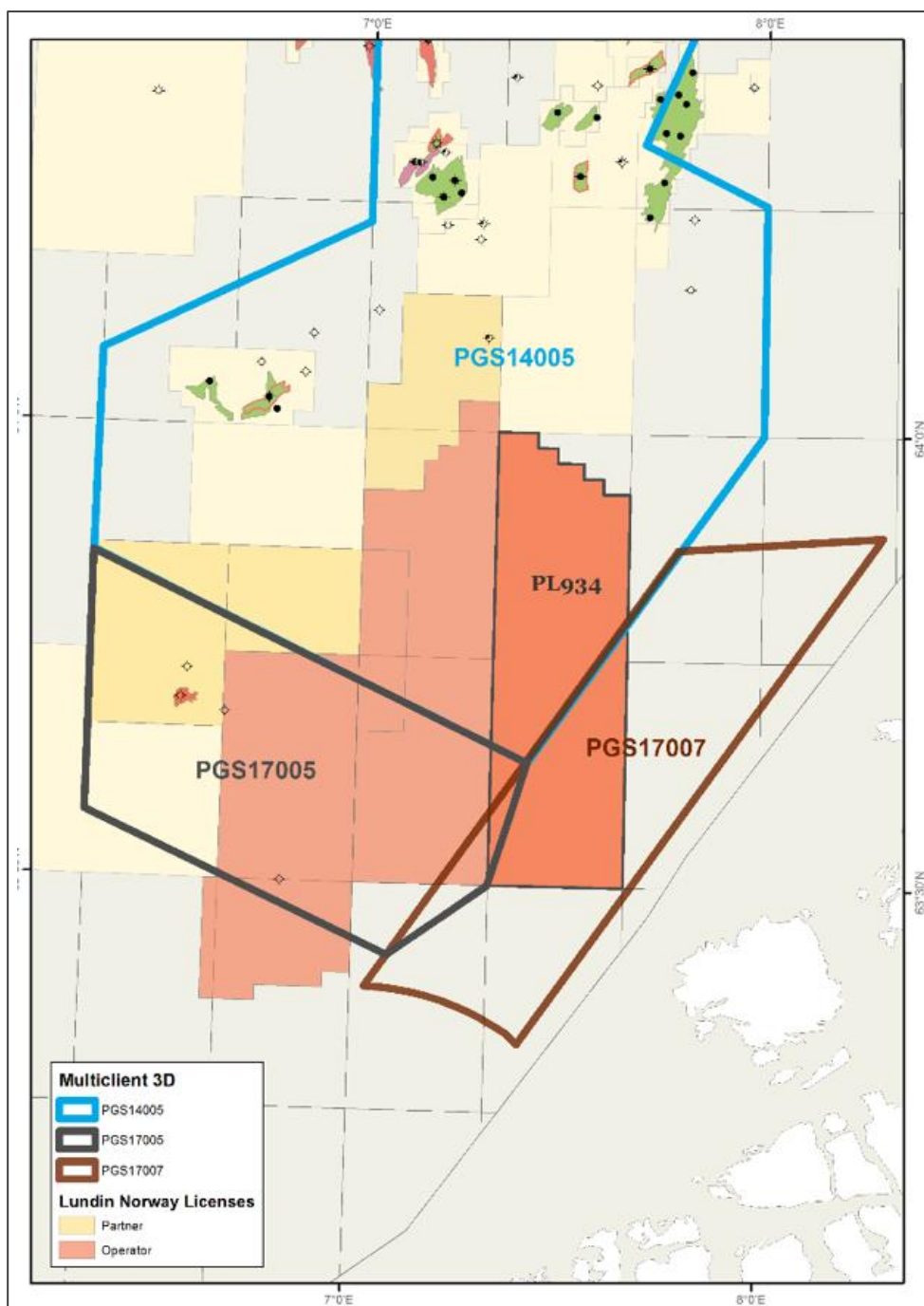


Figure 2: Common seismic database. Note: Only within license boundary plus 2km was included in the common database

Survey	NPD ID	area (sqkm) included	marked available	processing year
PGS14005	8054	659	yes	2014
PGS17M05		500	yes	2017
underlying surveys: PGS17005	8457		yes	2017
PGS17007	8449		yes	2017

Table 2: Common seismic data base

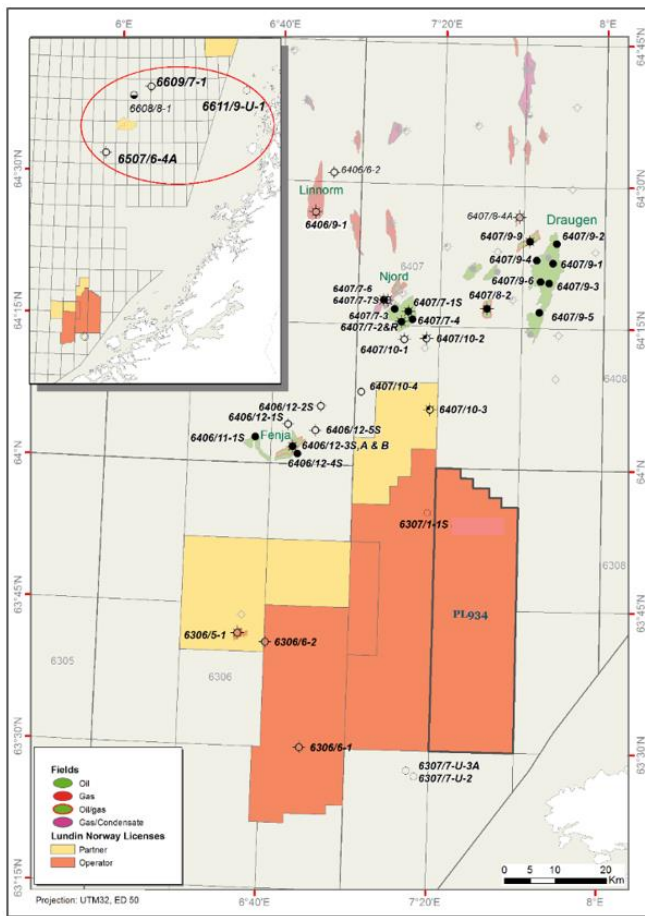


Figure 3: Common well database

Wellbore	PL	Wellname	Operator	TD In	Content	TDmd	Year	NPD ID	
6306/5-1	197		Amerada Hess	Late Cretaceous	Kvitnos Fm	Gas	2050	1997	3060
6306/6-1	198	Hagar	Statoil	Pre-Devonian	Basement	Dry	1317	1994	2384
6306/6-2	321 B		DetNor	Pre-Devonian	Basement	Dry	2080	2009	6143
6307/1-1 S	830	Silfari	Lundin	Early Jurassic	Åre Fm	Dry	4114	2018	8523
6406/6-2*	255		Shell	Early Jurassic	Tilje Fm	Dry	4670	2007	5359
6406/8-1	131		Elf	Early Jurassic	Åre Fm	Gas Shows	4910	1988	1136
6406/9-1	255	Linnorm	Shell	Early Jurassic	Åre Fm	Gas	5080	2005	4927
6406/11-1 S	156		Saga	Late Triassic	Red Beds	Oil	4185	1991	1539
6406/12-1 S	157		Statoil	Middle Jurassic	Melke Fm	Dry	3965	1991	1711
6406/12-2	157		Statoil	Middle Jurassic	Melke Fm	Dry	4367	1995	2640
6406/12-3 S	586	Fenja	VNG	Late Jurassic	Melke Fm	Oil/Gas	4001	2014	7322
6407/7-1 S	107	Njord	Hydro	Late Triassic	Red Beds	Oil/Gas	3950	1986	474
6407/7-2	107	Njord	Hydro	Late Triassic	Red Beds	Oil/Gas	3320	1987	1017
6407/7-2 R	107	Njord	Hydro	Late Triassic	Red Beds	Oil	3322	1990	1513
6407/7-3	107	Njord	Hydro	Late Triassic	Grey Beds	Oil	3222	1988	1229
6407/7-4	107	Njord	Hydro	Early Jurassic	Åre Fm	Oil	3211	1989	1360
6407/7-6*	107		Hydro	Early Jurassic	Åre Fm	Gas/Cond	3975	2000	4172
6407/7-7 S*	107		Hydro	Early Jurassic	Åre Fm	Gas/Cond	3886	2007	5550
6407/8-2	158	Tau	BP	Triassic	Grey Beds	Oil/Gas	1950	1994	2434
6407/8-4 A*	348	Galtvort	Statoil	Early Jurassic	Åre Fm	Gas	2473	2008	5814
6407/9-1	093	Draugen	Shell	Late Triassic	Red Beds	Oil	2500	1984	133
6407/9-2	093	Draugen	Shell	Early Jurassic	Tilje Fm	Oil	1865	1985	449
6407/9-3	093	Draugen	Shell	Early Jurassic	Tilje Fm	Oil	1868	1985	469
6407/9-4	093	Draugen	Shell	Early Jurassic	Tilje Fm	Oil	1820	1985	480
6407/9-5	093	Draugen	Shell	Middle Jurassic	Not Fm	Oil	1820	1985	492
6407/9-6	093	Draugen	Shell	Early Jurassic	Ror Fm	Oil	1800	1986	871
6407/9-9*	093	Hasselmus	Shell	Early Jurassic	Tilje Fm	Oil/Gas	1920	1999	1990
6407/10-1	132		Hydro	Late Triassic	Grey Beds	Gas Shows	3347	1987	1054
6407/10-2	132		Hydro	Early Jurassic	Tilje Fm	Shows	3825	1990	1497
6407/10-3	132		Hydro	Pre-Devonian	Basement	Shows	2973	1992	1927
6407/10-4	700 B	Lorry	Lundin	Undefined	Basement	Dry	3224	2016	7699
6507/6-4 A	350	Sesam	E.ON	Permian	Rotliegend Gp	Dry	4957	2012	6753
6608/8-1*	200	A-Permian	Statoil	Late Permian	Zechstein Gp	Oil Shows	3013	1997	2974
6609/7-1	081		Phillips	Pre-Devonian	Basement	Dry	1969	1983	19
6611/9-U-1	297-G	Scientific	IKU		Unit A		910	1992	8934
6307/7-U-3	156-G	Scientific	IKU		Åre Fm		174	1988	1270
6307/7-U-3 A	156-G1	Scientific	IKU		Toft Fm		133	1988	1431

Table 3: Common well data base. Note that for wells marked * only raw data were included.

3. Studies

The following special studies have been performed:

- Spectral decomposition to identify reservoir potential
- Reprocessed PGS17M05 to provide continuous image of basement and fill over Frøya / Froan
- Special study on Permian source rock cores and reservoir cores from East Greenland
- Special study on the Permian interval reservoir and source rock for well 6608/8-1
- Further characterization of geochemical signature of Permian sourced oil in the vicinity of the license

Prospectivity evaluation

Fig. 4 shows a schematic geo-section illustrating the play concepts which were identified and matured through the license work. Key well 6307/1-1S was drilled by the same Partner Group in the Froan Basin seeking evidence of a Palaeozoic source rock play; This could have de-risked the traps and reservoirs identified in PL934 but it did not find any supporting evidence of one, so PL934 prospectivity retains a high risk on hydrocarbon charge.

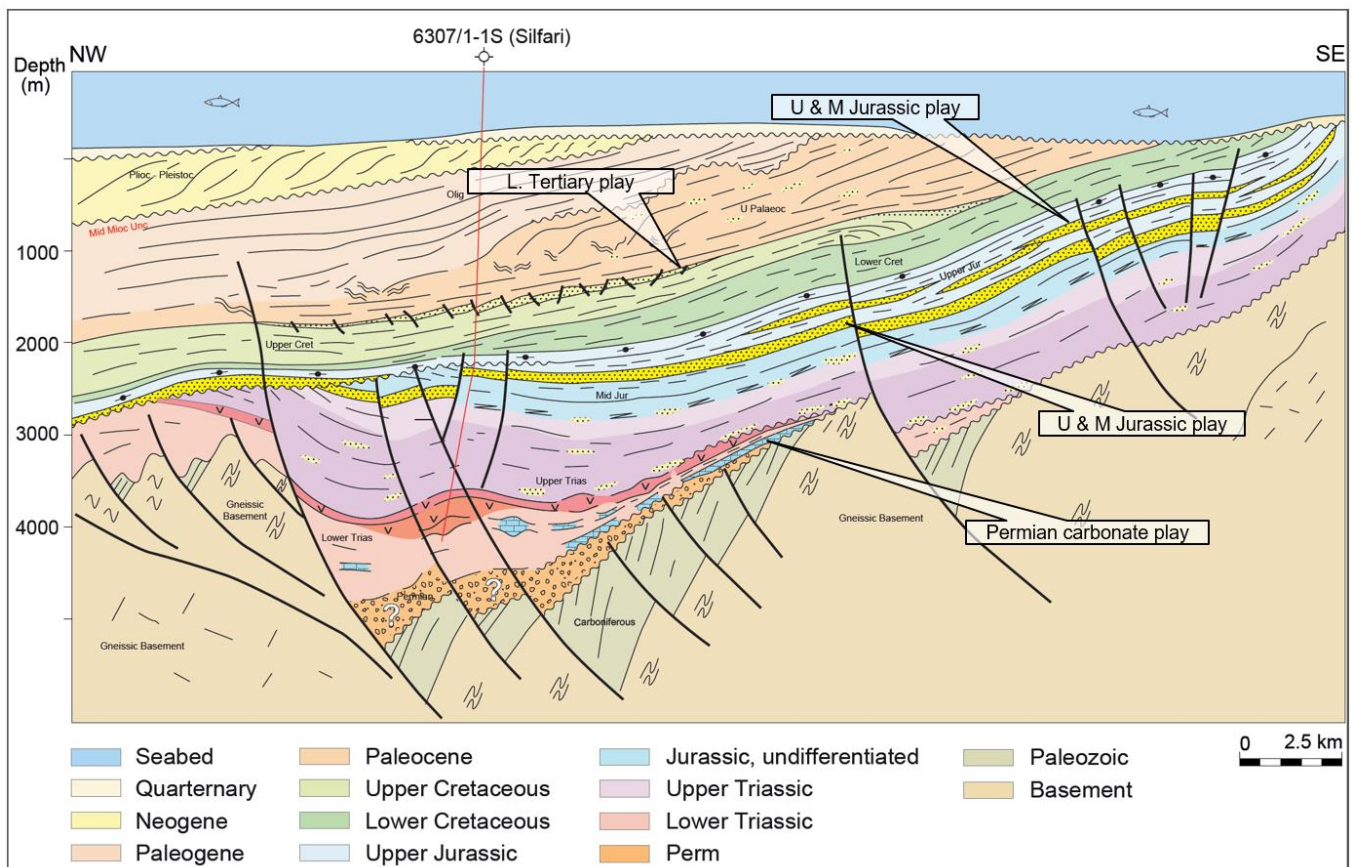


Figure 4: Schematic geo-section

Table 4 lists the resource potential for the prospectivity identified in the APA application for the acreage and Fig. 5 shows the prospect and leads defined.

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 ⁹ Sm ³] (>0.00)			Gas [10 ⁹ Sm 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)						
6307/2-Pm1	L	Oil	1,00	8,00	16,00		0,32		0,07	100,0	Upper Permian	2440	Njord/ Draugen	48
6307/2-Pm2	L	Oil	1,00	8,00	16,00		0,32		0,07	68,0	Upper Permian	2850	Njord/ Draugen	47
6307/2-J1	P	Oil	2,00	7,00	13,00		0,30		0,29	100,0	Fangst Gp / Mid Jurassic	1560	Njord/ Draugen	48
6307/2-Pc1	L	Oil	2,00	7,00	12,00		0,27		0,18	100,0	Egga Fm/Palaeoc	1040	Njord/ Draugen	48
6307/2-J2	L	Oil	1,00		7,00		0,15		0,13	100,0	Meike Fm/Upper Jurassic	1350	Njord/ Draugen	52
6307/5-J1	L	Oil	1,00		7,00		0,15		0,23	100,0	Fangst Gp/Mid Jurass	1490	Njord/ Draugen	64

Table 4: Resource potential (NPD table 2, APA 2017)

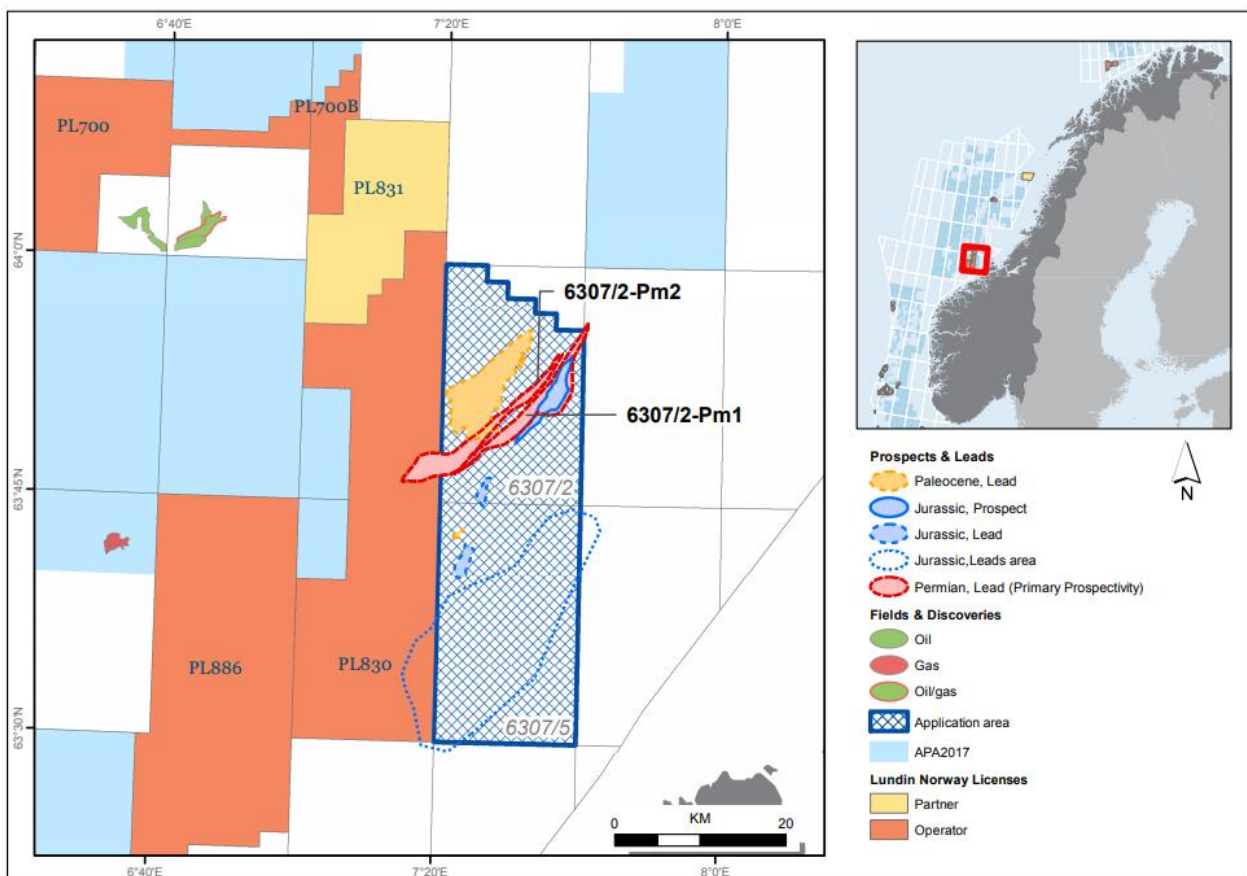


Figure 5. Prospect and lead outlines at time of Application (APA17)

Fig. 6 shows the leads that were identified within PL934 towards the end of the license period, based on new seismic, studies and incorporation of the Silfari well result. Note that the leads in block 6307/2 is mainly similar to those identified at the time of the application, while leads in block 6307/5 were not identified at application due to lack of 3D seismic at that time.

The primary prospectivity is identified in middle Jurassic and lowest Tertiary reservoir plays, although secondary Permian and Triassic plays are also possible. The Jurassic comprises many well-imaged small fault blocks, and the Silfari well proves good reservoir properties in this interval. These have generally small-moderate volume potential but might be collectively attractive for cluster-development if they could be charged. The lower Tertiary (Egga Fm) was drilled by Silfari well, which downgraded the reservoir quality expectations of this play in PL934.

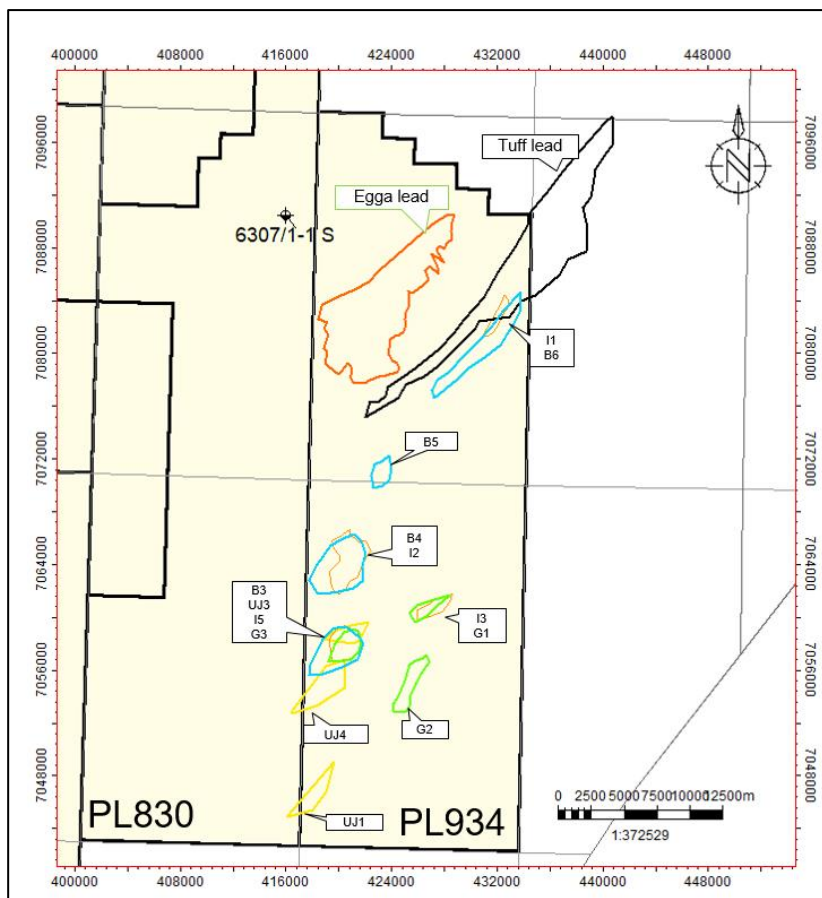


Figure 6: Mapped leads in PL934. Note the location of well 6307/1-1s (Silfari)

From the petroleum systems analysis point of view the evolution of the Froan Basin was modelled in 3D based on the reconstruction of the regional burial and erosion history using data from wells, seismic interpretation and apatite fission track studies (AFTA). The importance of the Miocene tilting event which resulted in significant spill and re-migration from existing accumulations was recognized and potential remigration pathways reconstructed and used in the risking of charge to leads and prospects.

Oil shows with a likely Permian source were identified in the IKU shallow bore hole 6611/9-U-1, as well as sequences of Upper Permian age (Ravnefjell equivalent) with source rock potential. Geochemical signatures were comparable to those from known Ravnefjell products from Greenland (sampled at GEUS, Denmark). Potential shows of Permian origin were subsequently identified in well 6407/10-3 (2667m) as well as in cuttings of wells 6608/8-1. Clear evidence of a Permian source rock in the Froan Basin could, however, not be proven.

The Silfari well (6307/1-1S, drilled 2018) did not encounter any hydrocarbons at any level. The licensees have therefore concluded that presence of a local source rock that could charge the PL934 leads is unlikely.

4. Technical evaluation

A complete technical evaluation regarding economical value and possible development solution is not performed due to the low chance of success for the leads caused by lack of proven source.

5. Conclusion

Based on the lack of proven mature source rock in the Froan Basin, the partnership could not identify a drillable prospect and unanimously decided to relinquish PL934 in December 2020.