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Relinquishment report

PL1103

PGNiG | UPSTREAM NORWAY

PANDION ENERGY

Sval

PL1103 Relinquishment Report

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Summary

Introduction

Following the APA 2020 application round, PL1103 was awarded 19.02.2021. Wintershall Dea Norge AS (40%) has been the operator for the licence along with partner PGNiG Upstream Norge AS (30%), Pandion Energy Norge AS (20%) and Sval Energi AS (10%). The original partners were INEOS E&P Norge AS (30), ONE-Dyas Norge AS (20%) and Edison Norge AS (10%) who all experienced a take-over to PGNIG Upstream Norge AS (30%), Pandion Energy Norge AS (20%) and Sval Energi AS (10%) respectively.

The drill-or-drop decision was 19.02.2023 for the licence. The main prospect was Condor (Eocene injectites), but during the licence period a new lead, Piasa (Oligocene), was evaluated in addition to re-evaluate the Rungne gas/condensate discovery from 2018 (Fig. 1).

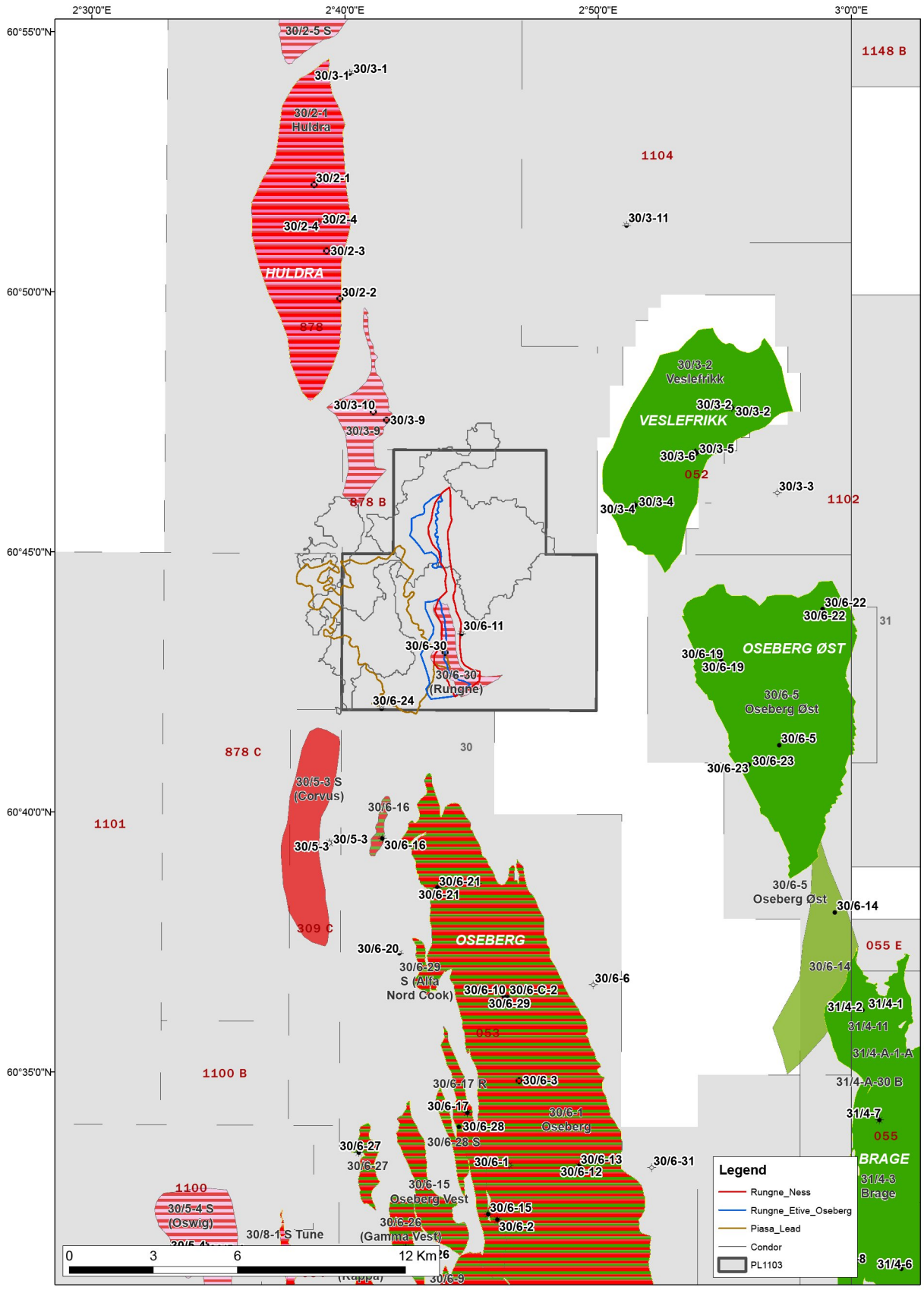

Fig. 1 PL 1103 Licence Overview

Rungne discovery in Ness Fm. (red polygon) and Rungne Etive and Oseberg up-dip potential (blue polygon) is within the licence boundary. The former Condor (dashed polygon) and Piasa (brown polygon) prospects partly extend outside the licence boundary.

The work program for PL 1103 was to re-process 3D seismic or acquire modern 3D seismic, in addition to G&G studies. It was agreed in the licence to reprocess the existing seismic ST06M01. The G&G studies performed was building an Earth Science Analytics (ESA) model using Machine Learning (ML) for injectite recognition and extraction. Other G&G studies performed where sand injection well study, velocity model sensitivity study and basin model and geochemistry study.

The licence is located on the Flatfisk slope, north of the Oseberg Field.

The main prospect has been the stratigraphic Condor prospect of Eocene injectites, but detailed interpretation revealed a larger extent and communication of the injectite-network, resulting in lack of closure. There is also possible connection between the injected sand-bodies and the overlying sand rich Utsira Fm. In addition, the well study revealed that these injectites had already been tested by two nearby wells with no shows. The licence group then screened for additional prospectivity resulting in the Piasa lead and the up-dip prospect of the Rungne discovery.

The Piasa lead is an intra Oligocene, mounded structure formed by a crestal intrusion network of the injectites below. This is a low-relief 4-way structure with very limited sand presence and consequently low volume potential.

The Rungne discovery was re-evaluated based on new interpretation and new velocity model. The new Top Ness depth map connected the northern undrilled segment to the southern discovery segment tested by the 30/6-30 well, increasing the discovery outline. In addition, an upside potential was defined in the up-dip Etive and Oseberg fms. from the discovery well. The trap is a 3-way dip closure with BCU truncation to the west.

The primary source rock is the prolific Upper Jurassic Draupne Fm. with minor contribution from Drake Fm. The hydrocarbon phase is both gas/condensate and oil.

The main reason for relinquishment is the lack of trap for the main prospect, Condor. The other opportunities, incl. the Rungne discovery, show too low volume potential and too high risk to enter the next exploration phase.

1 History of the production license

Table 1.1 PL1103 Milestone overview

Licence	PL 1103
Awarded	19.02.2021 (APA 2020)
Licence blocks	30/3 & 6
Licence drill-or-drop	19.02.2023
Licence period	Expire 19.02.2028
Licence group	Wintershall Dea Norge AS 40% (Operator) PGNiG Upstream Norge AS 30% Pandion Energy Norge AS 20% Sval Energi AS 10%
Licence area	71 km2
Work program	Reprocess 3D seismic or acquire modern 3D seismic and G&G studies
Meetings held	2021-04-09 EC/MC startup meeting #1 2021-05-12 EC work meeting seismic database 2021-09-30 EC work meeting injectites 2021-11-11 EC/MC meeting #2 2022-08-25 EC/MC meeting #3 2022-11-15 EC/MC meeting #4
Work performed	• Re-processing, image improving and inversion of ST06M01 3D merge: ST06M01WDR21 (injectite target) and ST06M01WDR22 (Jurassic target) • Interpretation of the 3D seismic data and relevant offset wells. • Petrophysics evaluation • Building an ESA model using Machine Learning for injectite recognition and extraction • Basin model study and Geochemistry • Velocity modelling • Volume and risks evaluation of all identified prospect opportunities in the licence.
Reasons for drop	Trap failure for the main prospect, Condor. Additional prospectivity (Piasa and Rungne up-dip potential) and the Rungne discovery had limited volume potential with too high risk and did not justify a new exploration well.

2 Database overviews

2.1 Seismic database

The seismic database for PL 1103 is listed in Table 2.1 and shown in Fig. 2.1.

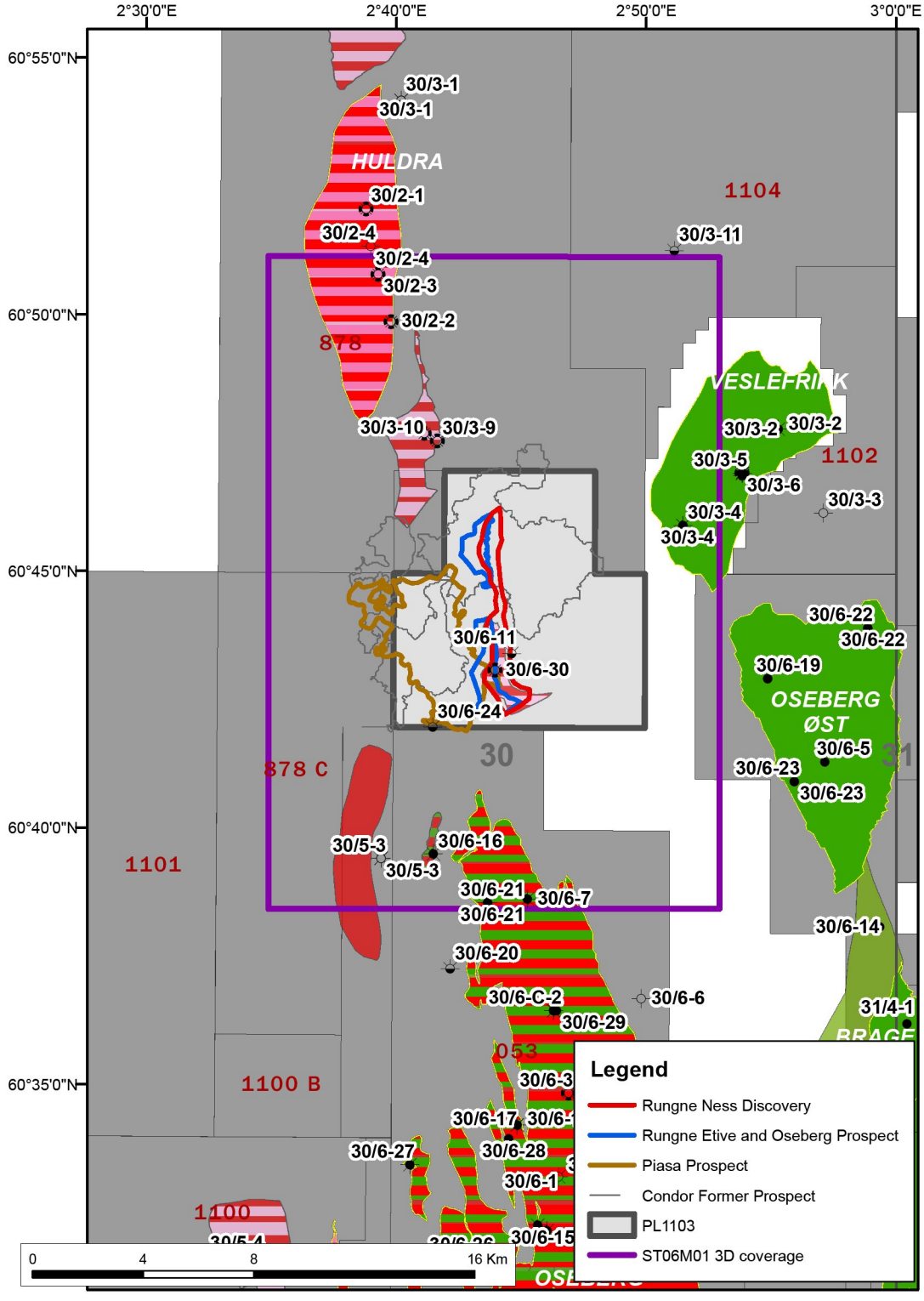

Fig. 2.1 Seismic Database

The ST06M01 seismic outline is shown by the purple polygon. The re-processed versions (ST06M01WDR21 and ST06M01WDR22) have the same outline

Table 2.1 Seismic Database

Survey	NPDID	Volumes	Domain	Year	Quality
ST06M01	n.a	Near-Far-Full Stack	3D Time	2006	Moderate quality. Pre-stack merge
ST06M01WDR21	n.a	Full Stack, INV	3D Time	2021	Good. Pre-stack reprocessing
ST06M01WDR22	n.a	Near-Mid-Far Stack, INV	3D Time	2022	Good. Pre-stack reprocessing

The input datasets for ST06M01 is: ST9718, ST9818, ST0207, NH0402 and SH9106. The respective NPDID's are: 3893, 3958, 4191, 4256 and 3444

The re-processing from 2021 had a stratigraphic focus on the Eocene injectites, while the 2022-version had a stratigraphic focus on the Jurassic target of the Rungne discovery and upside potential.

2.2 Well database

The most important wells in the well database for PL 1103 is listed in Table 2.2 and shown in Fig. 2.2.

Wells in the database was used for seismic well-ties, seismic inversion, petrophysical input in volume calculation and calibration of the ESA, Machine Learning-model.

Table 2.2 Well Database

Well	Year	TD Age	Result/Field/Discovery
30/2-2	1984	Early Jurassic, Drake fm.	Gas-Condensate discovery - Huldra
30/3-9	2000	Early Jurassic, Drake fm.	Gas/condensate discovery
30/3-4	1985	Early Jurassic, Cook fm.	Oil discovery - Veslefrikk
30/6-11	1982	Early Jurassic, Statfjord fm.	Dry (shows)
30/6-30	2018	Early Jurassic, Dunlin fm.	Gas/condensate discovery - Rungne
30/6-24S	1991	Triassic, Lunde fm.	Dry (shows)
30/6-16	1984	Triassic, Hegre fm.	Oil discovery
30/6-7	1982	Early Jurassic, Statfjord fm.	Oil and gas discovery - Oseberg

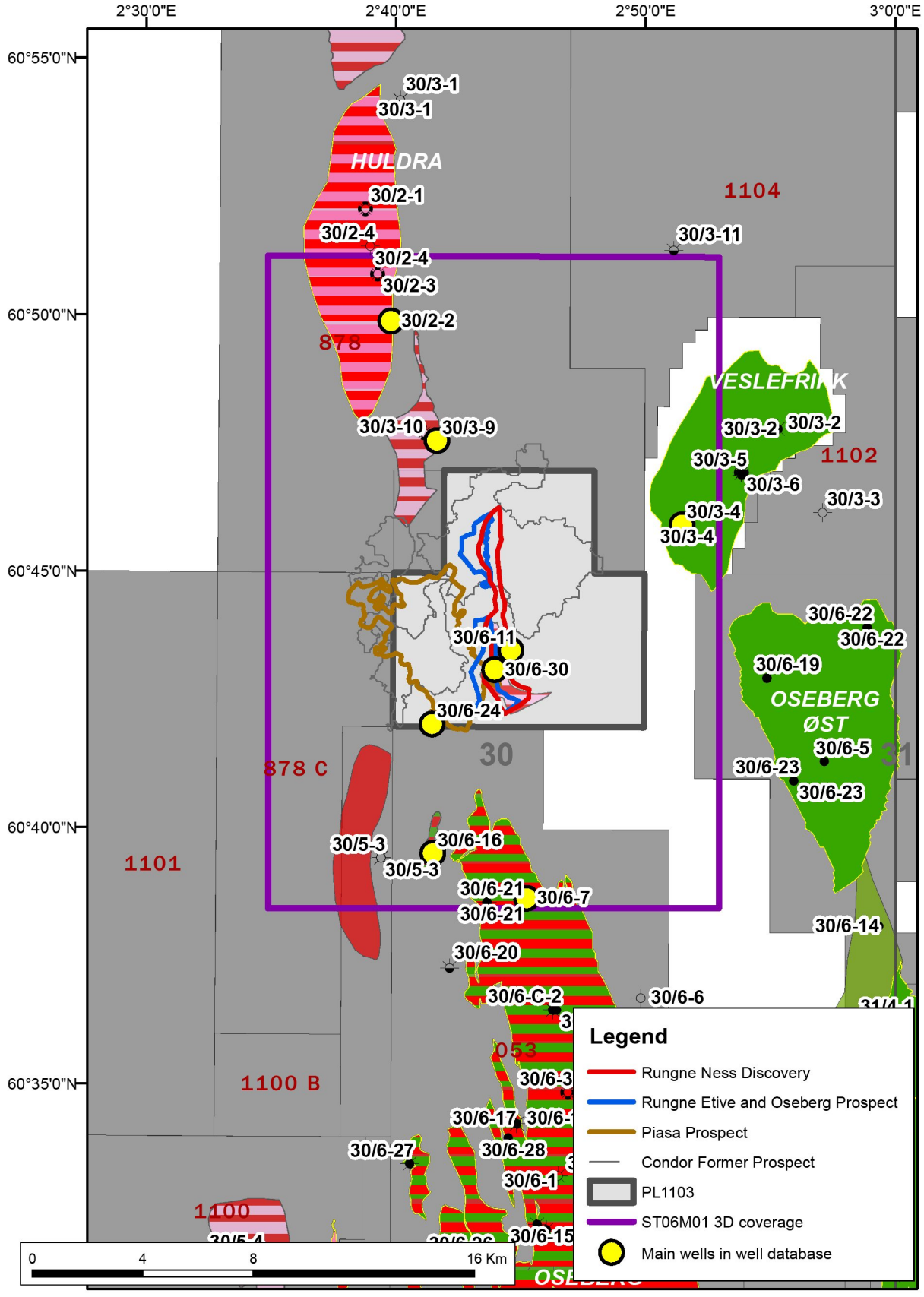

Fig. 2.2 Well Database

3 Results of geological and geophysical studies

G&G studies performed in the licence

- Building an ESA model using Machine Learning for injectite recognition and extraction
- Basin model study and Geochemistry
- Velocity modelling

Machine learning:

The main prospect, Condor, was initially identified on 3D seismic mega merge using geobody interpretation (Fig. 3.1). After award the Eocene injectites were re-mapped on new re-processed 3D-merge using ESA machine learning tool. Labels were created with support from previously trained internal injectite model and applied to the entire dataset. The outcome is a probability cube where geobodies were extracted in 3D. Different cut-offs were applied. A good match was seen between the extracted sand injections and the log-response in all wells in the area. Even with a conservative cut-off filter the Condor prospect picked up a larger extent than previously mapped pre-award, both north and west, and they are also most likely in connection to the overlying Utsira fm. sandstones (Fig. 3.2). Both 30/6-30 and 30/3-9 have tested the injectite network without any shows. No DHI is seen in the sand injectite network.

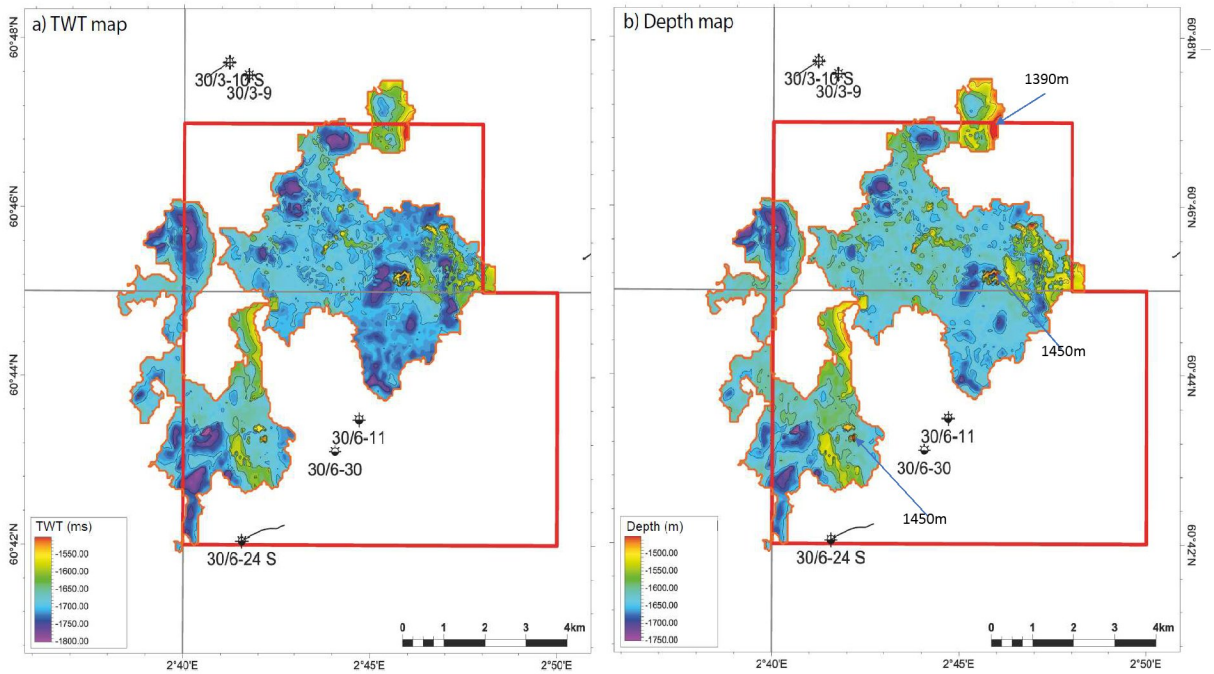

Fig. 3.1 Former Condor Prospect

Time (a) and depth (b) map of the former Condor prospect from manual interpretation

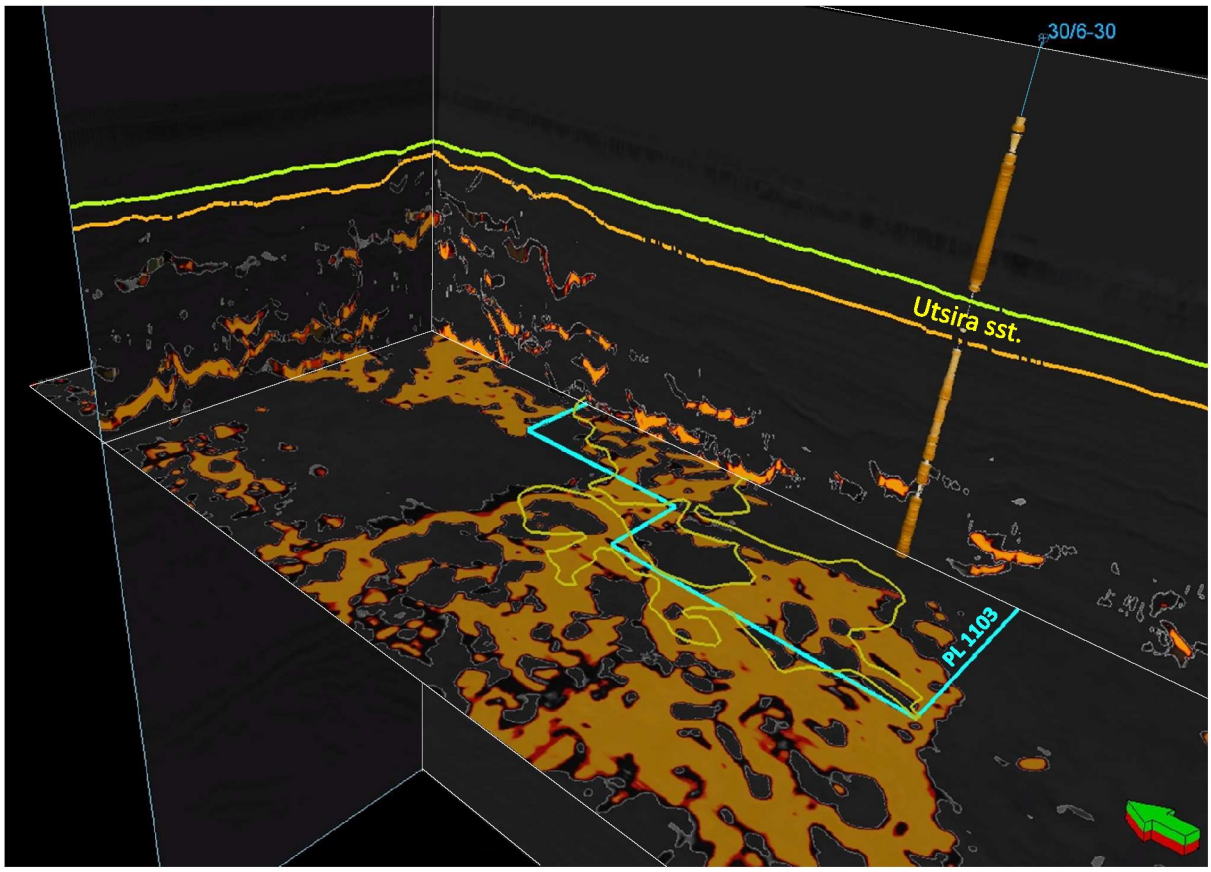

Fig. 3.2 Injectites interpreted from Machine Learning

Injectites (orange geobodies) displayed on in-line, x-line and time-slice. The old Condor prospect outline in yellow on the time-slice. The injectites are highly connected in 3D and likely injects into the sand section of Utsira fm. Well 30/6-30 is displayed with the GR-log and has tested one injectite sand-body.

Sand injection well study:

The overburden section (i.e. all stratigraphy above BCU) in all wells in the well database were studied, in order to find any evidence for sand and/or hydrocarbon presence. All available logs and well reports were used. Injected sands were present where the ESA-model had predicted sand, but no shows were described in the well reports.

Basin model study and geochemistry:

The source and migration has already been proven in this licence with the Rungne discovery from 2018. There are two source kitchen areas that contributes to the Rungne discovery; Rungne Sub-basin to the west and Magne Sub-basin to the north. Main source rock contributing is Draupne fm. and main generation and expulsion happened from mid Campanian and is still ongoing today. The Source rock potential is also sufficient to source the Piasa lead, but the main risk is the upward migration from Upper Jurassic to Oligocene, since no clear fault system is seen as a migration route up to the injectites. The source migration risk was therefore not reduced for Piasa lead.

Velocity modelling:

A new semi-regional velocity model was needed for the Rungne discovery to clarify if the saddle point between the southern proved segment and the northern untested segment was above or below the WUT-contact in the 30/6-30 well. A layer-cake model was built using 6 surfaces, 8 key wells and seismic interval velocity cube. The result was that the two segments were connected, and the discovery area increased by 1,7 km2. Despite the increase in area and resources, the volumes were not sufficient for appraisal drilling.

4 Prospect update

Condor prospect Summary

From the APA202 application, the Condor prospect was interpreted as high amplitude geobodies of sand injected sills and dikes (Fig. 3.1). The mean recoverable volumes was calculated to 179 mmboe. After award, Machine Learning was used to map out the sand injectites, building a model in Earth Science Analytics (ESA) (3 Results of geological and geophysical studies). This revealed that the sand injectites were highly connected and had a larger extent than what was previously mapped by manual interpretation. It was also likely connected to the sand-rich Utsira fm. above (Fig. 3.2). The result was no trap definition for the Condor prospect and hence no hydrocarbon volume potential.

The licence acreage was then screened for other prospect opportunities, resulting in the Piasa lead and up-dip potential in the Rungne discovery.

Piasa Lead Summary

The Piasa lead is an Oligocene low-relief (107 m) 4-way structural mounded feature, created by the crestal intrusion of the injectites below (Fig. 4.1). The reservoir is injectite sandstones of Ull Fm in Oligocene. Seal is Oligocene and Miocene shales. The ESA-model did only pick a few injected sand bodies within the structural closure, but there could be thinner injectite sand below seismic resolution. This resulted in very low N/G-input and following low volume potential. In addition, there is a high risk of migration failure since there are no clear migration pathways from the Upper Jurassic Kimmeridgian Draupne shales source rock into the injected sands. Structural spill to the northeast is at 1224 m. Key risks are access to charge and reservoir presence. The crest of the lead is 1117 m TVDSS. Most likely hydrocarbon phase is oil and total mean recoverable resources are 18 mmboe. Volumes are summarised in Table 4.1.

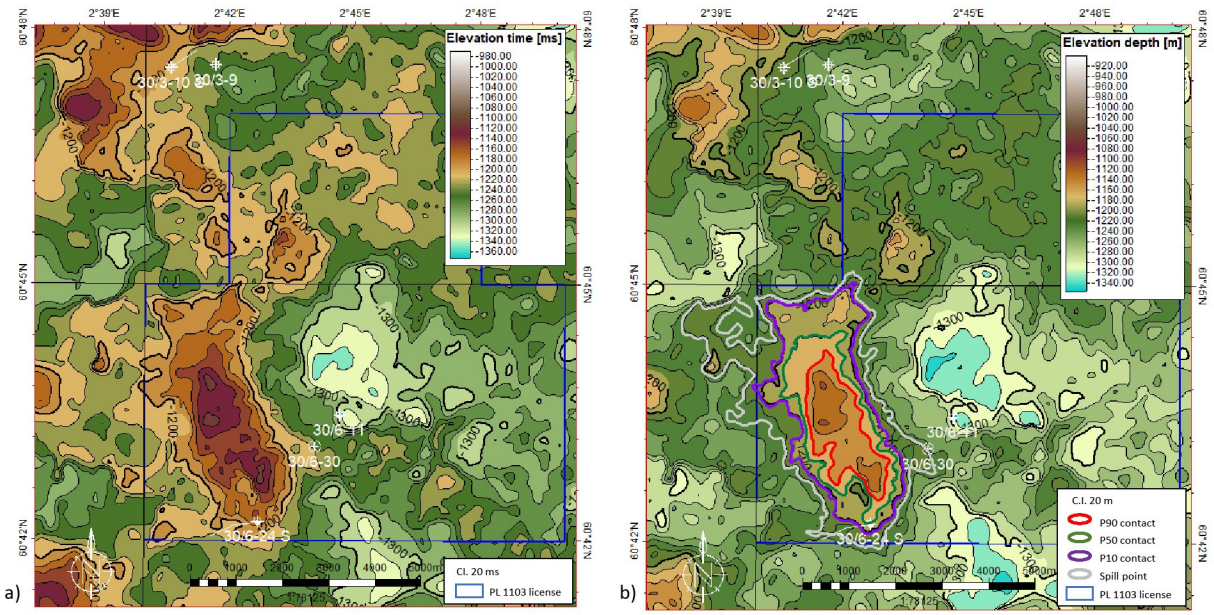

Fig. 4.1 Piasa time and depth structural maps

Intra Oligocene unconformity map: a) Time structural map, b) Depth structural map with Piasa contact distribution.

Table 4.1 Discovery and prospect volume table

Prospect/discovery segment	HC phase	In-place MMBoe				Recoverable MMBoe			
		P90	P50	Pmean	P10	P90	P50	Pmean	P10
Piasa Oligocene	Oil	13.6	42.6	54.5	109.7	3.8	13.1	17.7	37.6
Rungne Ness fm - Discovered	Gas/Condensate	7.9	10.5	10.7	14.0	4.4	5.9	6.1	8.0
Rungne Etive/Oseberg updip - Northern segment	Gas/Condensate	4.0	7.6	8.7	14.8	1.9	3.6	4.1	7.0
Rungne Etive/Oseberg updip - Southern segment	Gas/Condensate	3.0	7.3	8.6	16.2	1.4	3.5	4.1	7.6

Rungne Discovery and Updip potential

Rungne (30/6-30) is a gas-condensate discovery in Ness Fm, Middle Jurassic, sealed by Lower Cretaceous shales and sources by Kimmeridgian Draupne shales. The PL1103 licence re-evaluated the discovery to see if the discovery could be extended to the north. The trap definition for the Rungne discovery is a 3-way dip closure with BCU truncation unconformity to the west. Rungne was re-evaluated based on the new velocity model (3 Results of geological and geophysical studies). The new Top Ness depth map lifted the saddle point between the southern drilled segment and the northern untested segment, above the WUT-contact, increasing the discovery area from 2,5 km2 to 4,6 km2 (Fig. 4.2) This resulted in increased mean recoverable discovery volume from 4,4 mmboe (from the PL825 relinquishment report) to 6,1 mmboe (Table 4.2).

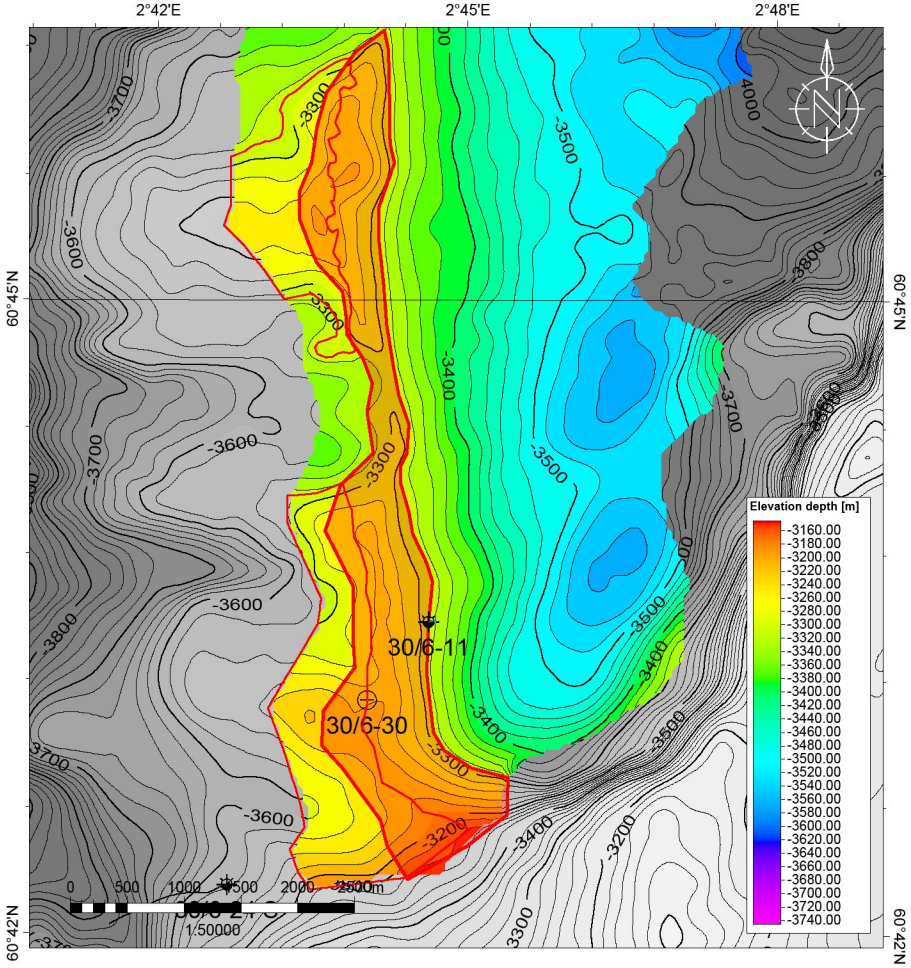

Fig. 4.2 Rungne depth map

Rungne Top Ness depth map, merged with BCU and truncated by Base Oseberg Fm. BCU background map in grey. Rungne Ness discovery in red filled polygon, and the north and south Rungne Etive and Oseberg Up-dip prospects in red non-filled polygons

Table 4.2 Rungne Discovery data - Ness

Block	30/6	Prospect name	Rungne Ness	Discovery/Prosp/Lead	Discovery	Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Gas	Reported by company	Wintershall Dea	Reference document				Assessment year	2022
This is case no.:	1 of 1	Structural element	Flatfisk Slope	Type of trap	Structural	Water depth [m MSL] (>0)	120	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)					0,11	0,19	0,20	0,31
	Gas [10^9 Sm^3] (>0.00)	1,11	1,47	1,50	1,95				
Recoverable resources	Oil [10^6 Sm^3] (>0.00)					0,03	0,06	0,06	0,09
	Gas [10^9 Sm^3] (>0.00)	0,66	0,88	0,90	1,18				
Reservoir Chrono (from)	Bajocian	Reservoir litho (from)	Ness fm.	Source Rock, chrono primary	Kimmeridgian	Source Rock, litho primary	Draupne fm.	Seal, Chrono	Bathonian - Berriasian
Reservoir Chrono (to)	Bajocian	Reservoir litho (to)	Ness fm	Source Rock, chrono secondary	Bajocian	Source Rock, litho secondary	Drake fm.	Seal, Litho	Heather - Aasgard
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)	1,00	Oil case (0.00-1.00)	0,00	Gas case (0.00-1.00)	1,00	Oil & Gas case (0.00-1.00)	0,00		
Reservoir (P1) (0.00-1.00)	1,00	Trap (P2) (0.00-1.00)	1,00	Charge (P3) (0.00-1.00)	1,00	Retention (P4) (0.00-1.00)	1,00		
Parametres:	Low (P90)	Base	High (P10)	*Comments: Base, mode for volumes = P50. Reservoir thickness: Top and base reservoir depth maps used*					
Depth to top of prospect [m MSL] (> 0)	3140	3140	3140						
Area of closure [km^2] (> 0.0)	4,0	4,6	5,0						
Reservoir thickness [m] (> 0)									
HC column in prospect [m] (> 0)	155	161	168						
Gross rock vol. [10^9 m^3] (> 0.000)	0,362	0,446	0,545						
Net / Gross [fraction] (0.00-1.00)	0,26	0,29	0,32						
Porosity [fraction] (0.00-1.00)	0,18	0,19	0,21						
Permeability [mD] (> 0.0)									
Water Saturation [fraction] (0.00-1.00)	0,35	0,40	0,45						
Bg [Rm3/Sm3] (< 1.0000)	0,0035	0,0036	0,0038						
1/Bo [Sm3/Rm3] (< 1.00)									
GOR, free gas [Sm^3/Sm^3] (> 0)	918	1319	2344						
GOR, oil [Sm^3/Sm^3] (> 0)									
Recov. factor, oil main phase [fraction] (0.00-1.00)									
Recov. factor, gas ass. phase [fraction] (0.00-1.00)									
Recov. factor, gas main phase [fraction] (0.00-1.00)	0,55	0,60	0,65						
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)	0,27	0,30	0,33	For NPD use:					
Temperature, top res [^{0}C] (>0)	130			Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)	408			Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1. Vsh <0,4	2. Phi <0,1	3.					Kart nr	NPD will insert value

The Early-Middle Jurassic reservoirs in Etive and Oseberg fms. were water-wet in the 30/6-30 discovery well, but had oil shows. Prospective volumes, both oil and gas-condensate, were therefore calculated up-dip from the well location, but only the gas-condensate case is included in this report. Trap definition for these two segments are 3-way dip closure with BCU truncation unconformity to the west. Seal is Lower Cretaceous shales and source rock is primarily Kimmeridgian Draupne shales. The up-dip potential is split in two separate segments; north and south (Fig. 4.2) with total mean recoverable volumes of 4,1 mmboe in each segment. The Prospect data can be found in Table 4.3 and Table 4.4). A volume summary can be found in Table 4.1.

Table 4.3 Rungne Prospect data - Etive and Oseberg Up-dip North

Block	30/3,6	Prospect name	Rungne Etive Osebe	Discovery/Prosp/Lead	Prospect	Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Gas	Reported by company	Wintershall Dea	Reference document				Assessment year	2022
This is case no.:	1 of 1	Structural element	Flatfisk Slope	Type of trap	Structural	Water depth [m MSL] (>0)	120	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)					0,22	0,51	0,59	1,08
	Gas [10^9 Sm^3] (>0.00)	0,38	0,69	0,79	1,33				
Recoverable resources	Oil [10^6 Sm^3] (>0.00)					0,07	0,15	0,18	0,33
	Gas [10^9 Sm^3] (>0.00)	0,22	0,41	0,47	0,80				
Reservoir Chrono (from)	Toarchian	Reservoir litho (from)	Oseberg fm.	Source Rock, chrono primary	Kimmeridgian	Source Rock, litho primary	Draupne fm.	Seal, Chrono	Bathonian - Berriasian
Reservoir Chrono (to)	Bajocian	Reservoir litho (to)	Etive fm	Source Rock, chrono secondary	Bajocian	Source Rock, litho secondary	Drake fm.	Seal, Litho	Heather - Aasgard
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)	0,72	Oil case (0.00-1.00)	0,00	Gas case (0.00-1.00)	1,00	Oil & Gas case (0.00-1.00)	0,00		
Reservoir (P1) (0.00-1.00)	1,00	Trap (P2) (0.00-1.00)	1,00	Charge (P3) (0.00-1.00)	0,90	Retention (P4) (0.00-1.00)	0,80		
Parametres:	Low (P90)	Base	High (P10)	*Comments: Base, mode for volumes = P50. Reservoir thickness: Top and base reservoir depth maps used*					
Depth to top of prospect [m MSL] (> 0)	3250	3250	3250						
Area of closure [km^2] (> 0.0)	0,8	1,1	1,9						
Reservoir thickness [m] (> 0)									
HC column in prospect [m] (> 0)	40	53	70						
Gross rock vol. [10^9 m^3] (> 0.000)	0,160	0,200	0,240						
Net / Gross [fraction] (0.00-1.00)	0,81	0,84	0,87						
Porosity [fraction] (0.00-1.00)	0,20	0,21	0,22						
Permeability [mD] (> 0.0)									
Water Saturation [fraction] (0.00-1.00)	0,35	0,40	0,45						
Bg [Rm3/Sm3] (< 1.0000)	0,0035	0,0036	0,0038						
1/Bo [Sm3/Rm3] (< 1.00)									
GOR, free gas [Sm^3/Sm^3] (> 0)	918	1319	2344						
GOR, oil [Sm^3/Sm^3] (> 0)									
Recov. factor, oil main phase [fraction] (0.00-1.00)									
Recov. factor, gas ass. phase [fraction] (0.00-1.00)									
Recov. factor, gas main phase [fraction] (0.00-1.00)	0,55	0,60	0,65						
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)	0,27	0,30	0,33	For NPD use:					
Temperature, top res [^{0}C] (>0)	130			Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)	428			Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1. Vsh <0,4	2. Phi <0,1	3.					Kart nr	NPD will insert value

Table 4.4 Rungne Prospect data - Etive and Oseberg Up-dip South

Block	30/6	Prospect name	Rungne Etive Osebe	Discovery/Prosp/Lead	Prospect	Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Gas	Reported by company	Wintershall Dea	Reference document				Assessment year	2022
This is case no.:	1 of 1	Structural element	Flatfisk Slope	Type of trap	Structural	Water depth [m MSL] (>0)	120	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)					0,17	0,48	0,59	0,16
	Gas [10^9 Sm^3] (>0.00)	0,28	0,67	0,78	1,45				
Recoverable resources	Oil [10^6 Sm^3] (>0.00)					0,05	0,14	0,18	0,35
	Gas [10^9 Sm^3] (>0.00)	0,17	0,40	0,47	0,88				
Reservoir Chrono (from)	Toarchian	Reservoir litho (from)	Oseberg fm.	Source Rock, chrono primary	Kimmeridgian	Source Rock, litho primary	Draupne fm.	Seal, Chrono	Bathonian - Berriasian
Reservoir Chrono (to)	Bajocian	Reservoir litho (to)	Etive fm	Source Rock, chrono secondary	Bajocian	Source Rock, litho secondary	Drake fm.	Seal, Litho	Heather - Aasgard
Probability [fraction]									
Total (oil + gas + oil & gas case) (0.00-1.00)	0,80	Oil case (0.00-1.00)	0,00	Gas case (0.00-1.00)	1,00	Oil & Gas case (0.00-1.00)	0,00		
Reservoir (P1) (0.00-1.00)	1,00	Trap (P2) (0.00-1.00)	1,00	Charge (P3) (0.00-1.00)	1,00	Retention (P4) (0.00-1.00)	0,80		
Parametres:	Low (P90)	Base	High (P10)	*Comments: Base, mode for volumes = P50. Reservoir thickness: Top and base reservoir depth maps used*					
Depth to top of prospect [m MSL] (> 0)	3190	3190	3190						
Area of closure [km^2] (> 0.0)	0,4	1,0	1,7						
Reservoir thickness [m] (> 0)									
HC column in prospect [m] (> 0)	46	71	96						
Gross rock vol. [10^9 m^3] (> 0.000)	0,189	0,232	0,285						
Net / Gross [fraction] (0.00-1.00)	0,81	0,84	0,87						
Porosity [fraction] (0.00-1.00)	0,20	0,21	0,22						
Permeability [mD] (> 0.0)									
Water Saturation [fraction] (0.00-1.00)	0,35	0,40	0,45						
Bg [Rm3/Sm3] (< 1.0000)	0,0035	0,0036	0,0038						
1/Bo [Sm3/Rm3] (< 1.00)									
GOR, free gas [Sm^3/Sm^3] (> 0)	918	1319	2344						
GOR, oil [Sm^3/Sm^3] (> 0)									
Recov. factor, oil main phase [fraction] (0.00-1.00)									
Recov. factor, gas ass. phase [fraction] (0.00-1.00)									
Recov. factor, gas main phase [fraction] (0.00-1.00)	0,55	0,60	0,65						
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)	0,27	0,30	0,33	For NPD use:					
Temperature, top res [°C] (>0)	130			Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)	428			Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1. Vsh <0,4	2. Phi <0,1	3.					Kart nr	NPD will insert value

5 Technical assessment

Detailed evaluation of the Condor prospect, using Machine Learning workflow for identification and interpretation, revealed a larger areal extent of the injectite network, also higher up in the stratigraphy with likely communication to the sands in the Utsira fm. The result was lack of trap definition for Condor. Following, the basis for volume potential in the main prospect in the application was gone.

Evaluation of the upside potential in the licence resulted in the mounded Oligocene Piasa lead. This is a low-relief 4-way structure with maximum column height of 107 m. The reservoir presence risk is high due to the very limited injected sand bodies found by the ESA model. The sand presence is therefore conceptual with thin injected sands below seismic resolution, present in the crestal intrusion network of this mounded feature. Following, the N/G is expected to be low. The chance of hydrocarbon migration from Upper Jurassic is also considered to be low, due to no clear fault linking the two stratigraphic sections. The Piasa lead has too low volume potential with too high risk to justify an exploration well.

The re-evaluation of the Rungne discovery and its up-dip potential also failed to increase the volume potential to a level where appraisal can be justified.

Based on the results, a unified conclusion was made in the licence group to relinquish the licence.

6 Conclusion

Phase 1 of the work program leading up to the Drill-or-Drop decision has been fulfilled by reprocessing the 3D merge ST06M01. Geological and geophysical studies revealed that the remaining prospectivity in the licence is not viable to pursue any further. The partnership therefore decided to drop the PL 1103 licence.