

# Relinquishment report



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# 1 Key Licence History

## Award and Participants

PL620 was awarded in APA2011 3rd February 2012 with Faroe Petroleum as an operator with a 50% interest and with Noreco and Edison as partners with 25% interest each. The License covers a 296.098 km<sup>2</sup> area in block 9/6 close to the Yme field.

## Work Obligations

The work commitment was to licence long offset 2D data. Decision to acquire 3D seismic or drop within one year. Drill or Drop within 3 years. Decision on Continuation within 5 years and PDO within 7 years.

## Meetings

2012-03-27 ECMC meeting. Formal establishment of licence and decision on the work program for the license.

2012-06-18 Work meeting. Decision to reprocess 2D data

2012-10-18 Work meeting. Interpretation status

2012-11-28 ECMC meeting. Decision to acquire 3D

2013-11-18 ECMC meeting. Seismic acquisition results and DNME acquisition status

2014-10-09 ECMC meeting. Updated volumes and risk. Recommendation to drop

## 2 Database

The database used in the evaluation was as defined in the Application with the addition of long offset 2D data and the FP13002 3D survey acquired as part of the licence work. Fig. 2.1

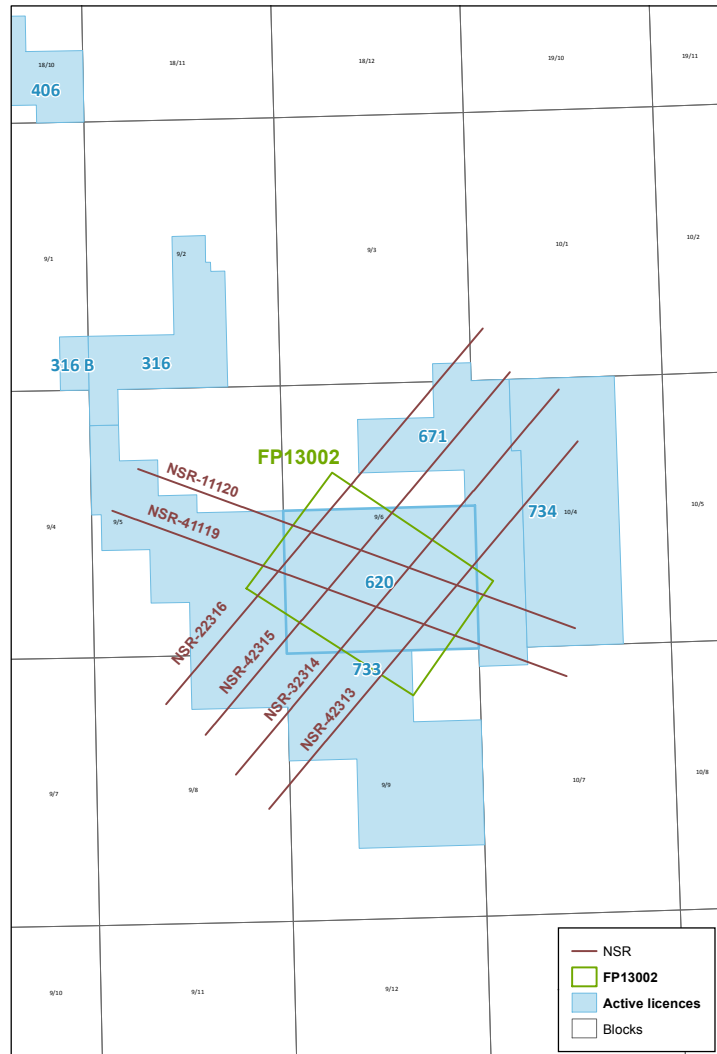


Fig. 2.1 Seismic database

Reprocessing was done on the 2D lines to better define the structure prior to the decision to acquire new seismic.

## 3 Review of geological framework

Re-interpretation of the Lola prospect on the new 3D data was performed in 2014. The new seismic resulted in a greatly improved understanding of the structure and better definition of the prospect.

The main risk in the licence had been migration. Detailed work was performed to visualize an AVO anomaly on the structure but it was not identified any. Also to try and de-risk migration DNME data was collected together with the neighbouring license. DNME data can indicate presence of hydrocarbons, but the Egersund Basin proved to be anomalous when interpreting the data. Conclusion from the inversion of the DNME data is that the data can not be trusted in this area since we do not understand the anomalies identified. Hence it was not possible to de-risk the prospect further when it comes to migration risk.

## 4 Prospect update

Based on the work performed the risk has increased for the Lola prospect. Several elements have failed to decrease the risk, they are as follows:

- We have a robust closure up against the salt structure. The crest of the structure is not certain as dips becomes steep and we lose reflectivity where the salt penetrates up through the reservoir section and into the shallower sections.
- No AVO anomalies were found on the structure. Considering the depth and expected reservoir parameters we should have some AVO if hydrocarbons are present.
- In addition the DNME data collected in the licence was found to be unreliable in the area and hence could not decrease the migration risk. Fig. 4.1, Fig. 4.2, Fig. 4.3, Fig. 4.4

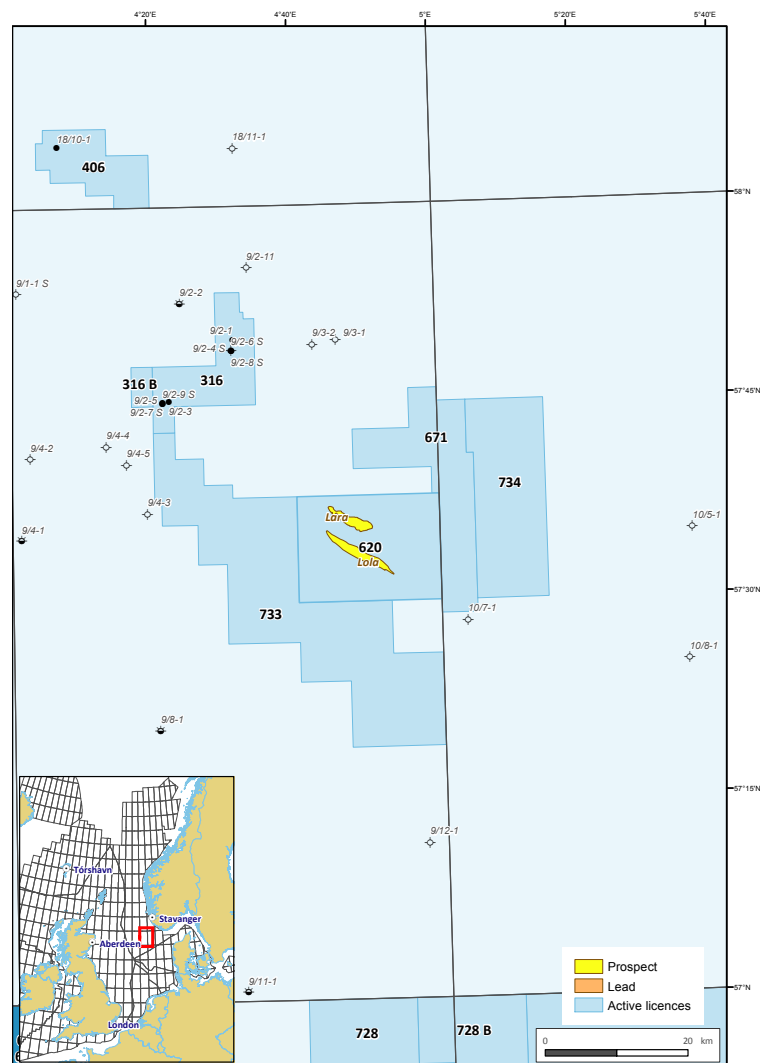


Fig. 4.1 Prospect map



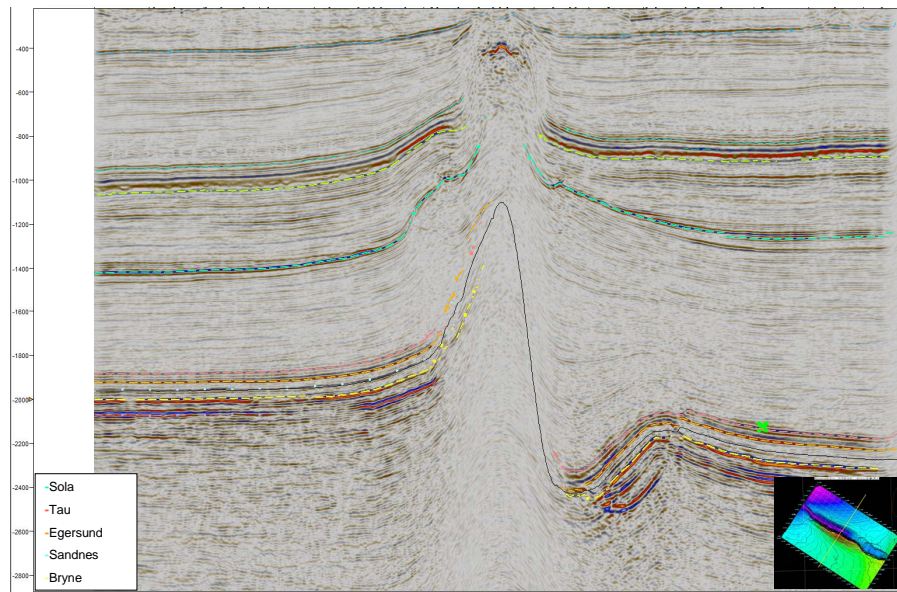


Fig. 4.2 Line crossing Lola structure. Line through the central part of the structure showing how shallow the salt reaches

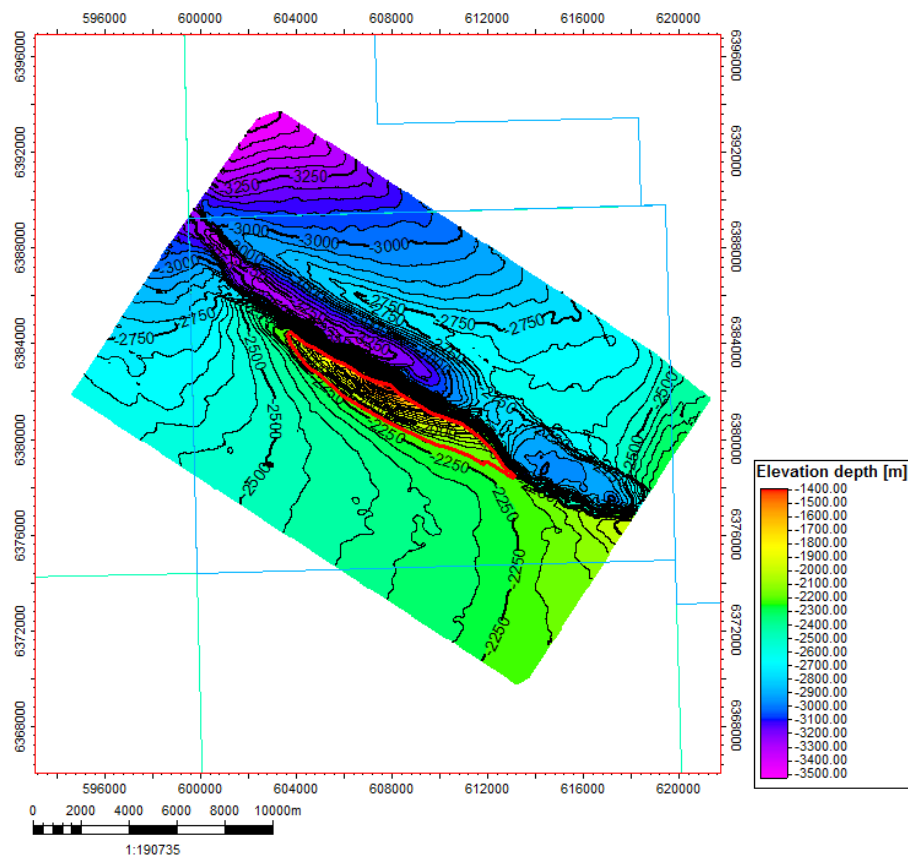


Fig. 4.3 Top Sandes depth. Top Reservoir with Lola outline



Block	Prospect name		Discovery/Prosp/Lead	Prosp ID (or New)	NPD approved?	
9/6 (part)	Lola		Prospect	<i>NPD will insert data</i>	<i>NPD will insert data</i>	
Play (name / new)	Structural element		Company/ reported by / Ref. doc.		Year	
<i>NPD will insert data</i>	Egersund Basin					
Oil/Gas case	Resources IN PLACE					
Oil	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10 <sup>6</sup> Sm <sup>3</sup>	2.58	31.60	77.60			
Gas 10 <sup>9</sup> Sm <sup>3</sup>						
	Resources RECOVERABLE					
	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10 <sup>6</sup> Sm <sup>3</sup>	0.87	11.10	26.70			
Gas 10 <sup>9</sup> Sm <sup>3</sup>				0.01	0.11	0.26
	Which fractiles are used as:		Low:	P90	High:	P10
Type of trap	Water depth (m)		Reservoir Chrono (from - to)		Reservoir Litho (from - to)	
Downthrown/Structural	72		Callovian - Oxfordian		Sandnes - Egersund	
Source Rock, Chrono	Source Rock, Litho		Seal, Chrono		Seal, Litho	
Kimmeridgian	Tau		Oxfordian - Kimmeridgian		Egersund - Tau	
Seismic database (2D/3D):		3D				
Probability of discovery:						
Technical (oil+gas case)		22%		Prob for oil/gas case		100%
Probability (fraction):		Reservoir (P1)	Trap (P2)	Charge (P3)	Retention (P4)	
		0.9	0.9	0.3	0.9	
Parameters:		Low	Base	High	Comments	
Depth to top of prospect (m)		1400	1400	1400		
Area of closure (km <sup>2</sup> )		3	6.2	12.3		
Reservoir thickness (m)		55	92	130		
HC column in prospect (m)		160	250	350		
Gross rock vol. (10 <sup>9</sup> m <sup>3</sup> )						
Net / Gross (fraction)		60	70	80		
Porosity (fraction)		20	25	30		
Water Saturation (fraction)		25	30	40		
Bg. (<1)						
Bo. (>1)		1.26	1.29	1.31		
GOR, free gas (Sm <sup>3</sup> /Sm <sup>3</sup> )						
GOR, oil (Sm <sup>3</sup> /Sm <sup>3</sup> )		47	55	64		
Recovery factor, main phase		30	35	40		
Recovery factor, ass. phase						
Temperature, top res (deg C) :		44	Pressure, top res (bar) :		180	

Fig. 4.4 Prospect data. Charge risk has increased since the application

## 5 Technical evaluation

No new development evaluation was done in the license as the prospect could not be significantly de risked geologically.

## 6 Conclusions

We consider the remaining potential in the PL620 license to be of to high risk and to low volume potential to drill a well at this time. The license program has not de-risked the Lola prospect and the Lara lead sufficiently for the Licence to commit to drilling a well.