

Relinquishment status report for PL429
AU-EXP NOR ELN-00018

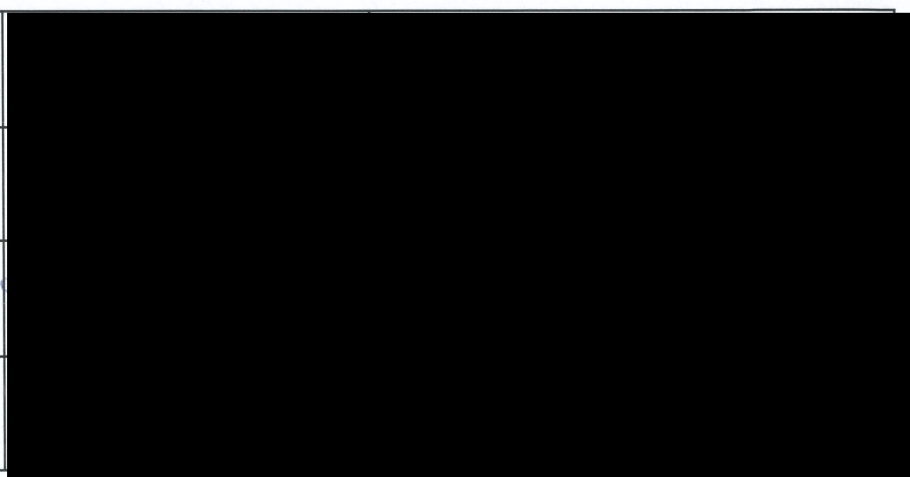
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1 Introduction

The initial period for Production Licence 429 expired February 2012. The partnership unanimously decided to fully relinquish the acreage.

2 Background, database and license history

Production Licence (PL) 429 was awarded in February 2006 to partners Statoil (70% - Operator) and Dong (30%). Work obligations were to acquire 3D data covering the license, perform G&G evaluation s and to drill a well.

Production Licence 429 is located in the Blocks 6407/4 (445km²) and 6407/1 (12km²), and is approximately 32km north of the Njord Field. In terms of structural setting, the licence is situated within the Halten Terrace area, to the south of the Gjøeslingen Lineament and the east of the Kya Fault Zone (Figure 1 and Figure 2).

A new 3D seismic survey – ST0809 - covering PL429 was acquired in 2008 (Figure 3). This seismic data is owned by, and covers the majority of, the licence. Two structures previously identified on 2D seismic data were mapped and updated (Figure 2). Spinell, situated in the southern part of the licence, is a large, segmented 4-way closure (Figure 4). These segments are Spinell Sør, Spinell Nord, Spinell Vest A and Spinell Vest B (Figure 4 and Figure 5). Gullhøna, situated in the north of the licence, is a small rotated fault block (Figure 2 and Figure 6).

The 6407/4-1 well drilled in 1985 tested the Spinell Sør segment, proving the presence of gas and condensate within the Garn Formation, although due to very poor hole conditions, data collected during drilling were unreliable. A gas-water contact was not proven and the DST results were inconclusive. The results for the Ile Formation were inconclusive. The Tofte sands and Tilje Formation, which demonstrates the best reservoir properties, were dry. To fulfil the drilling commitment for the licence, it was decided to appraise the discovery in this Sør segment. The main aims of the 6407/4-2 well were to test for commercial hydrocarbon volumes and test producibility of the Garn Formation (DST with fracturing). As the well was dry, the producibility of the Garn Formation was not tested. The reservoir properties were as expected.

3 Technical work and meetings

Seismic interpretation/mapping of the Spinell and Gullhøna structures was based upon a merged dataset of several 3D seismic surveys (including the newly-acquired ST0809 survey), of which only Statoil has access. Additional technical work carried out includes:

- an evaluation of the hydrocarbon source and migration history of the area;
- an evaluation of the fault seal potential of the Spinell structure,
- fluid inclusion studies and hydrocarbon core scanning of cores from 6407/4-1 (and the newly acquired core from 4-2) to evaluate the presence of hydrocarbons/test for a palaeo-hydrocarbon water contact;
- petrological/petrophysical study to determine the effects of sample preparation on measured plug porosity/permeability (i.e. the effects of clay collapse etc);
- sedimentological description of the Garn Formation cored in the 6407/4-2 well;
- geochemical studies on cutting samples from 6407/4-2 to evaluate the character and origin of the source rock

The results of the core scanning and fluid inclusion studies are consistent with either leakage and/or under-filling of the Spinell Sør structure.

Five combined Exploration and Management Committee meetings have been held:

- EC/MC 1 24th April 2007
- EC/MC 2 24th October 2007
- EC/MC 3 29th April 2010
- EC/MC 4 3rd November 2010
- EC/MC 5 30th November 2011

Technical/work meetings:

- Well testing strategy 6th January 2011

4 Proven Resources in the Spinell Sør segment

The 6407/4-2 well was dry. The hydrocarbon water contact in the Spinell Sør segment is placed at 3958mTVD, based upon a combination of pressure data and hydrocarbon core scanning of the Garn Formation (Figure 7). The proven mean recoverable resources for the Spinell Sør segment are 2.2 MSm³ OE (Table 1).

5 Remaining prospectivity in Spinell and Gullhøna

Although the 6407/4-1 and 4-2 wells did not test Gullhøna or the other segments in the Spinell structure, it is possible that faults at the apex of the structure are open at all reservoir levels, and the Spinell Sør, Nord and Vest B segments are in communication. Consequently, these segments will have a shared hydrocarbon-water contact in the Garn Formation, and deeper reservoir levels will be dry (Table 2). Alternatively, assuming a degree of fault seal would allow fill to deeper reservoir levels and thus higher volumes (Table 3). The Spinell Vest A segment does not require fault seal along most of its length due to the high displacement and juxtaposition of reservoir with the shales of the Spekk Formation.

The Gullhøna structure was not tested by the 6407/4-1 or 4-2 wells. Potential reservoir intervals are juxtaposed with Spekk Formation source rocks permitting hydrocarbon fill into deeper reservoir levels (Figure 6). However, compared to the original interpretation based on 2D seismic, the structure is considerably smaller when mapped with the ST0809 3D dataset, thus the mean aggregated volumes are sub-economic (1.7MSm³ OE).

6 Summary and conclusions

The work programme for PL429 has been fulfilled. At present, the hydrocarbon potential of the remaining segments in the Spinell and Gullhøna structures do not justify further exploration, thus PL429 has been relinquished.

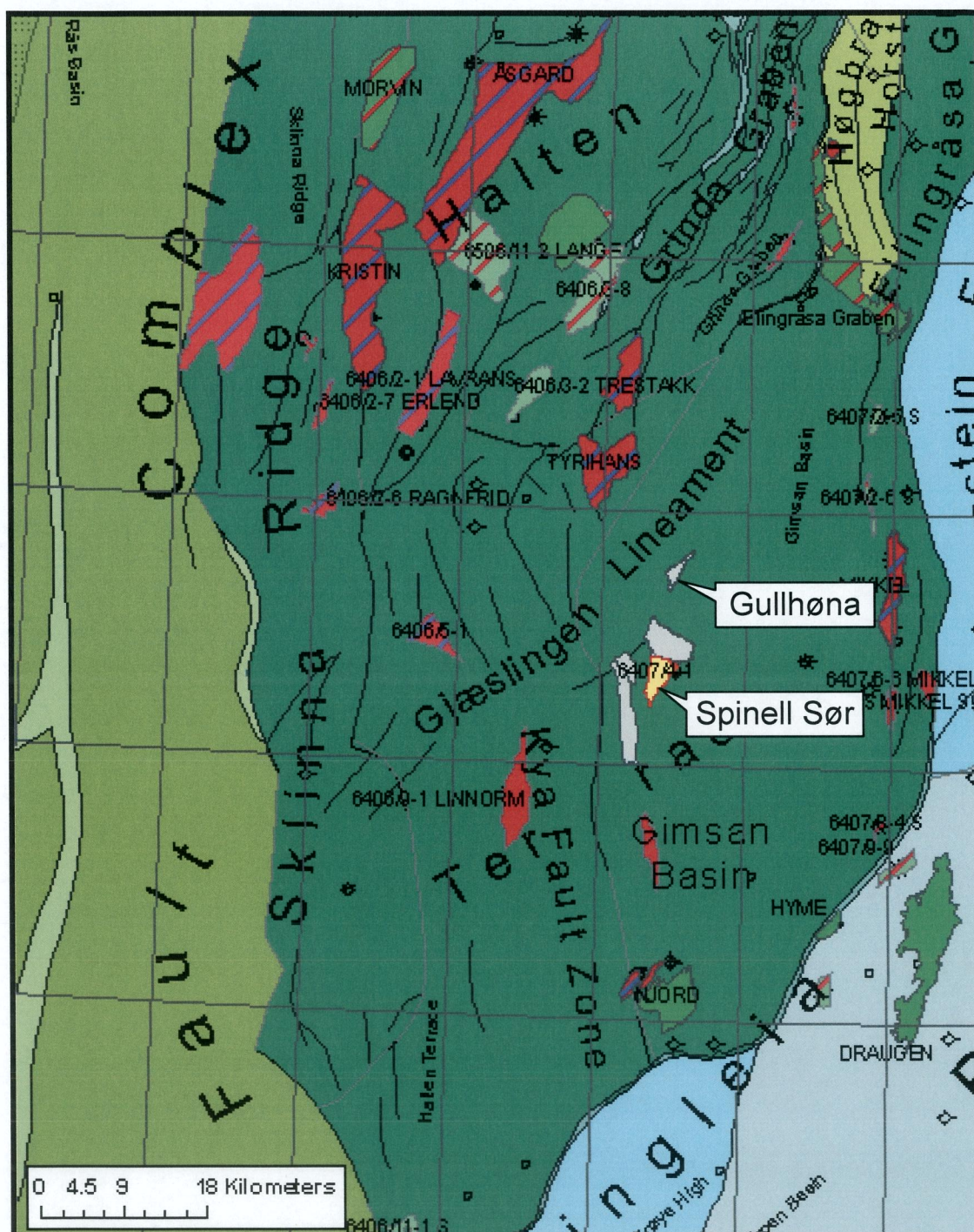


Figure 1 Location of Spinell and Gullhøna in relation to key structural elements and discoveries/fields in the Halten Terrace area

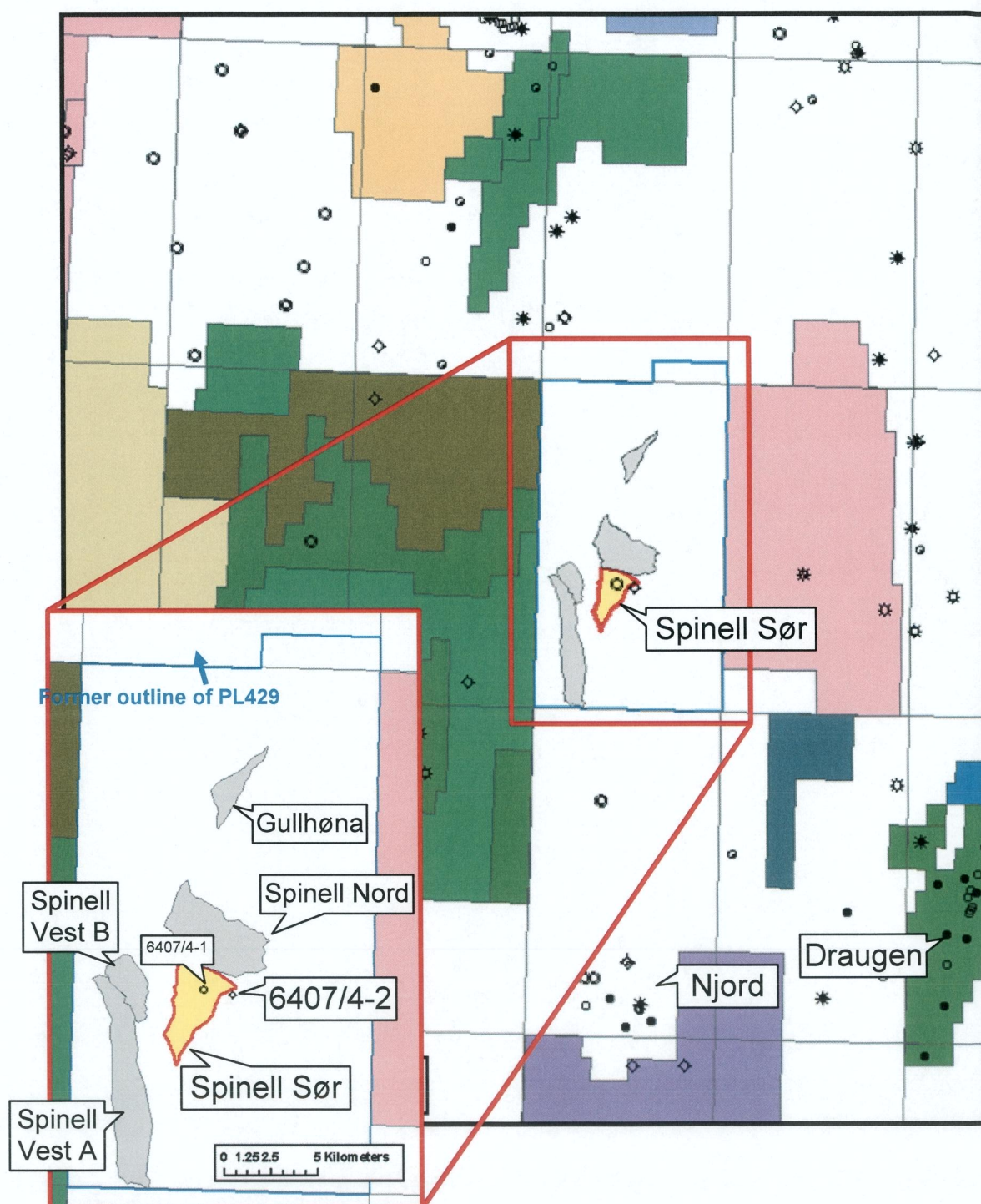


Figure 2 Location map of PL429, the Spinell Sør discovery and untested segments on the Spinell and Gullhøna structures.

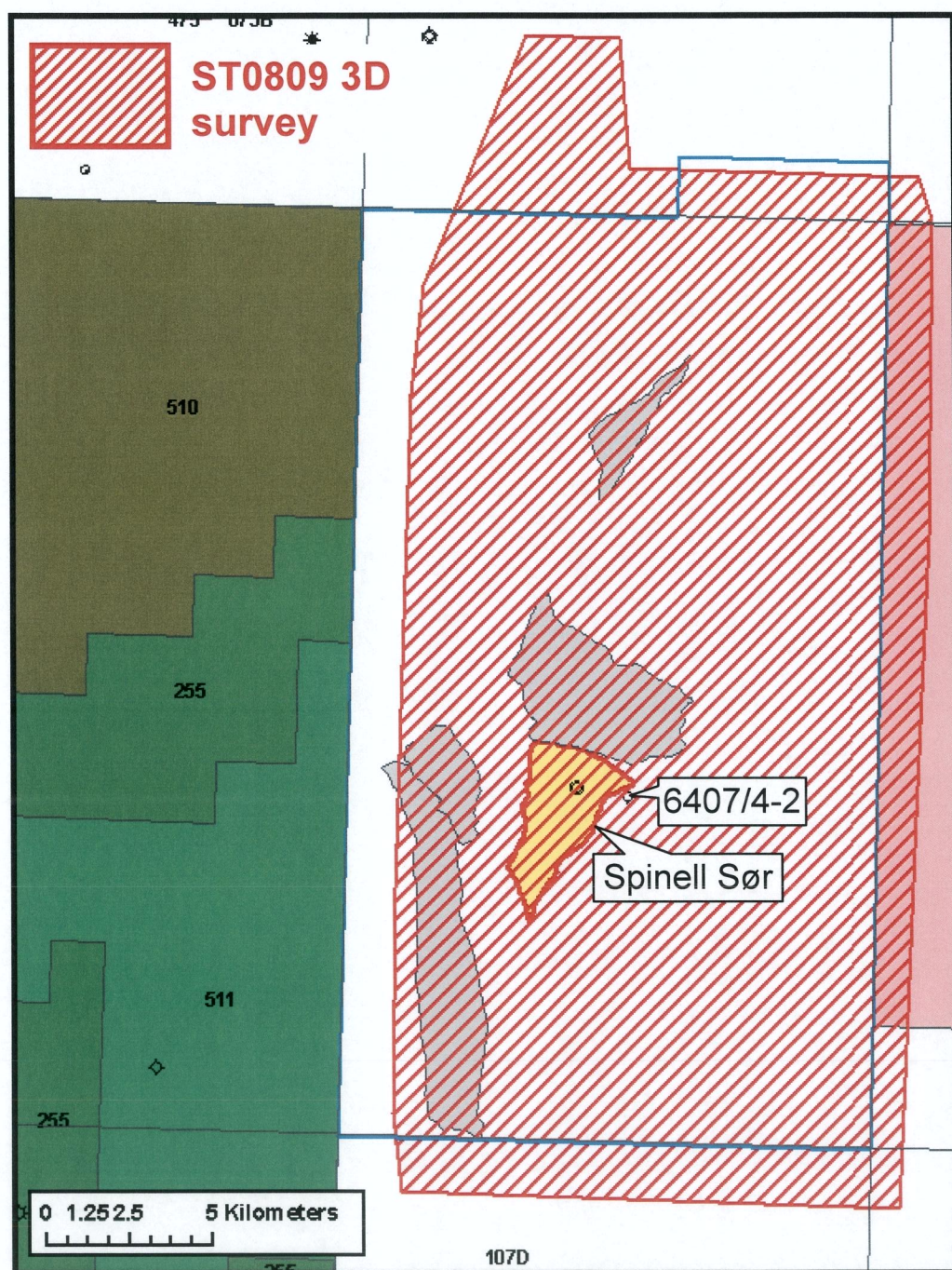


Figure 3 Outline of the ST0809 3D seismic survey acquired in 2008

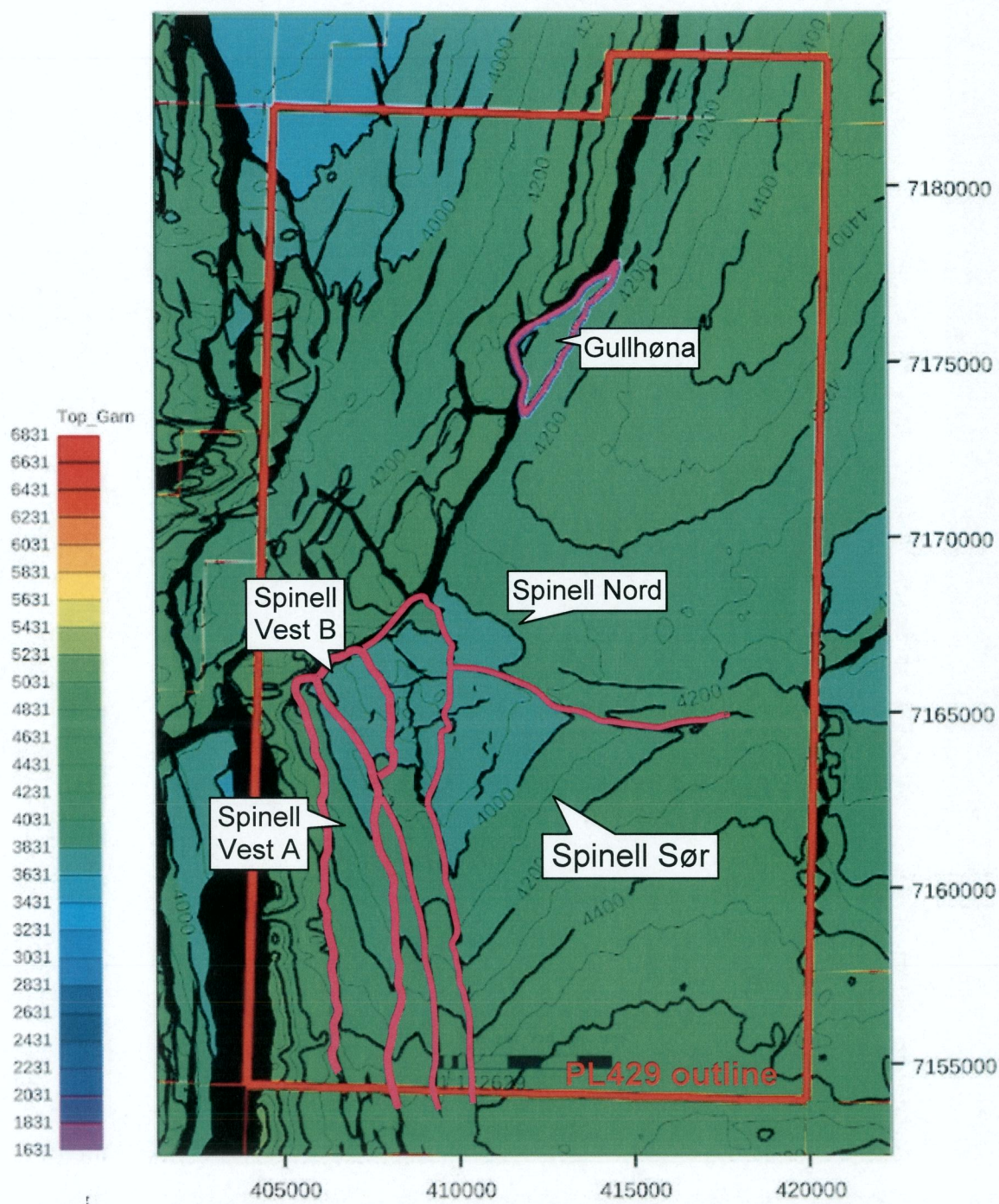


Figure 4 Top Garn Formation depth map showing the segments of the Spinell structure and the Gullhøna.

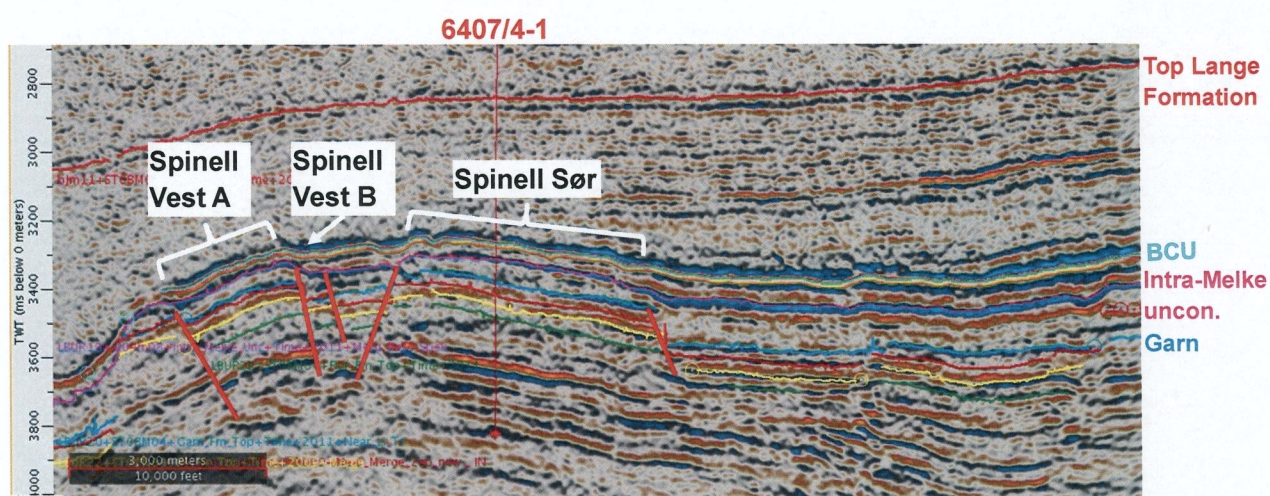


Figure 5 Seismic cross section (crossline 3797) across the Spinell structure

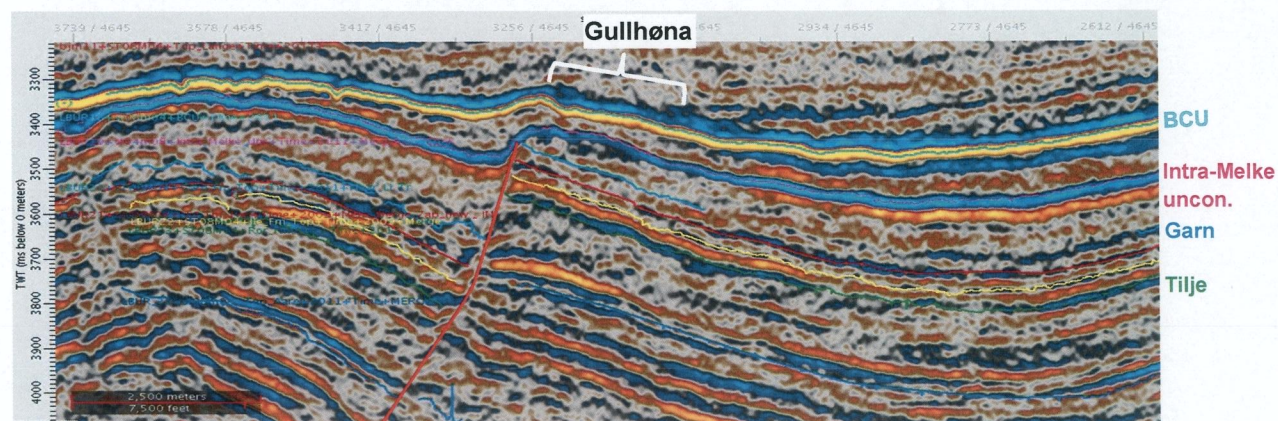


Figure 6 Seismic cross section (crossline 4645) across the Gullhøna structure

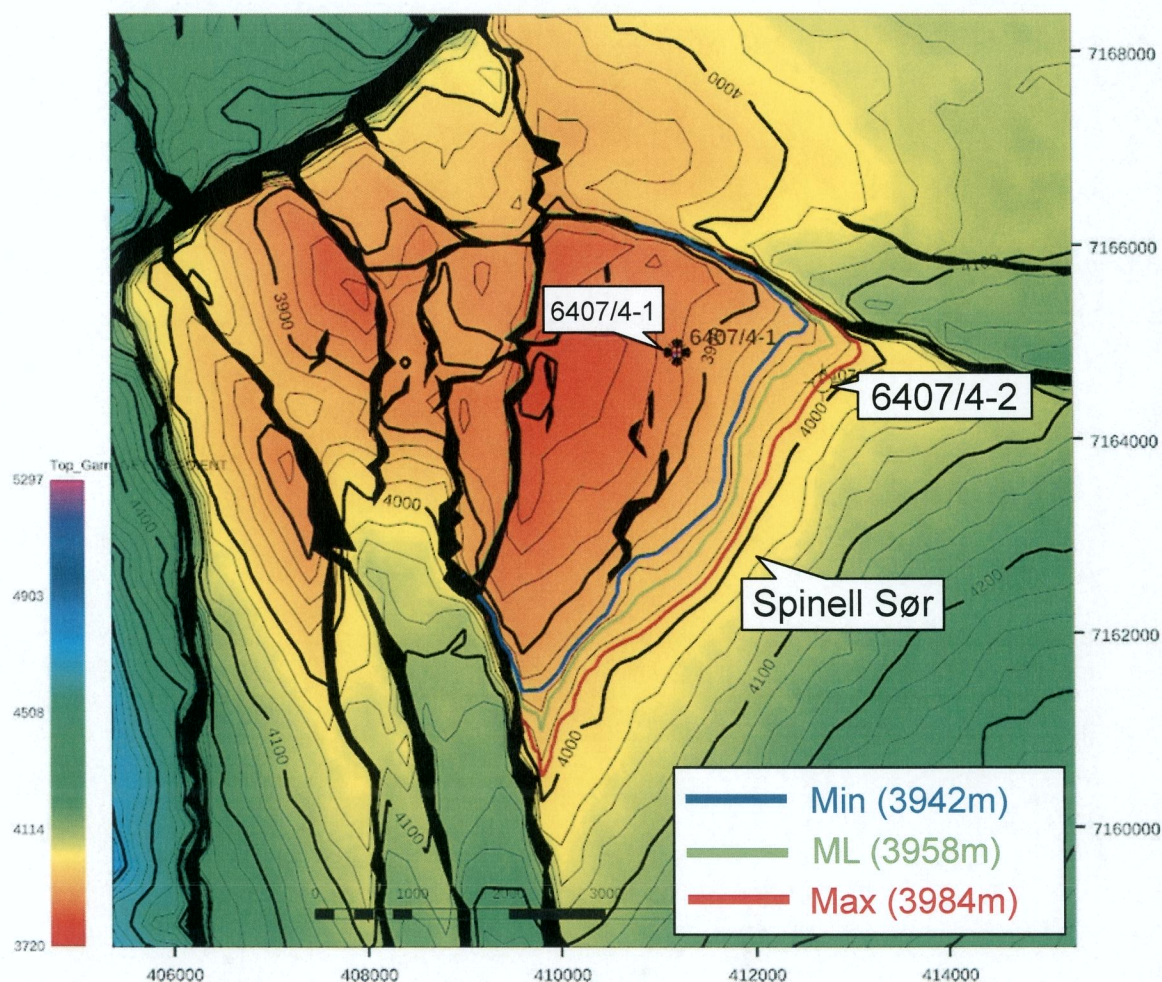


Figure 7 Post-well contacts in the Spinell Sør segment, determined through a combination of log, pressure and hydrocarbon core scanning data.

DISCOVERED	Discovery/prospect segments	In-place res. (MSm ³ oe) 100%, Total Structure			Recoverable res. (MSm ³ oe) 100%, Total Structure		
		P90	Mean	P10	P90	Mean	P10
Proven by well	Spinell Sør	3.18	4.72	6.47	1.42	2.17	3.01

Table 1 Proven in-place and recoverable resources (gas + condensate) in the Spinell Sør segment

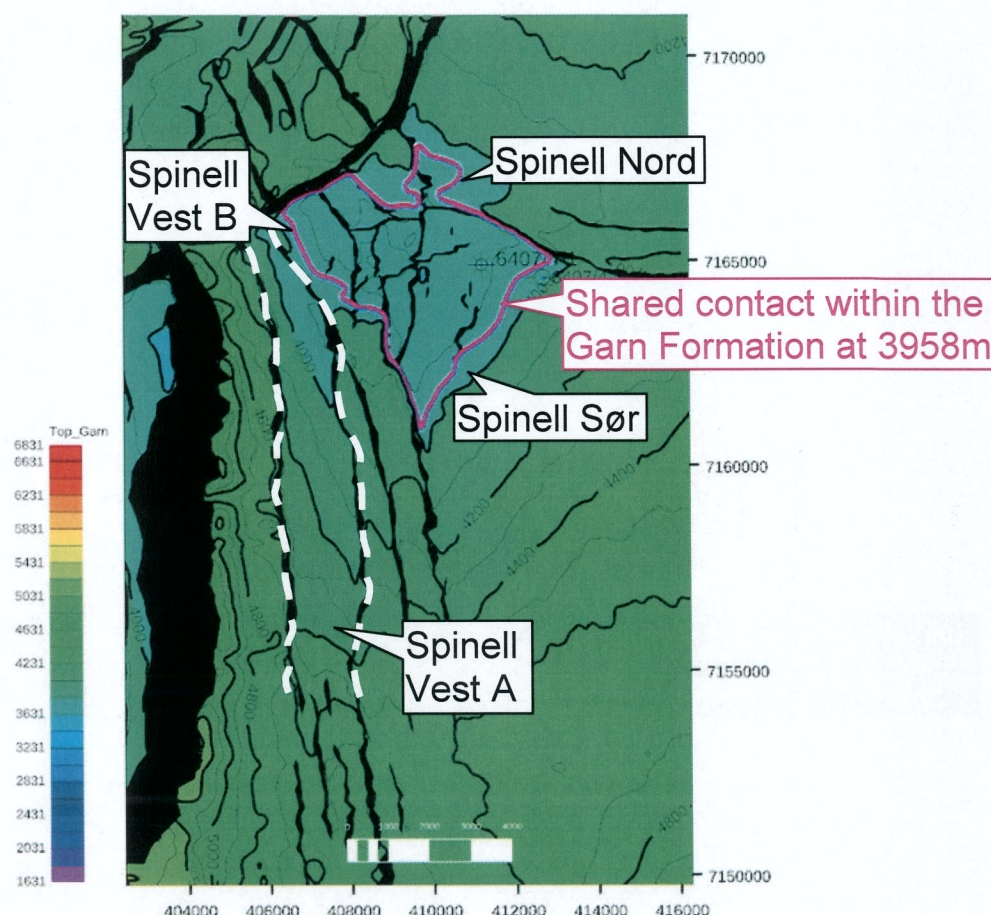


Figure 8 Faults at the apex of the Spinell structure may be open. The consequence of this would be a shared hydrocarbon-water contact in the Garn Formation and no hydrocarbons in the deeper reservoir levels. The Spinell Vest A segment does not require fault seal along most of its length due to the high displacement.

UNDISCOVERED	Prospect/segment	In-place res. (MSm ³ oe) 100%, Total Structure			Recoverable res. (MSm ³ oe) 100%, Total Structure		
		P90	Mean	P10	P90	Mean	P10
<i>Pre drill segment (unproven resources)- assuming shared contacts in the Garn Formation at 3858m</i>	Spinell Nord	0.14	0.18	0.83	0.05	0.07	0.10
	Spinell Vest B	0.96	1.24	1.54	0.43	0.58	0.74

Table 2 Prognosed resources (gas + condensate) in the Spinell Nord and Vest B segments assuming a shared hydrocarbon-water contact in the Garn Formation with no hydrocarbon filling in deeper levels.

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UNDISCOVERED	Prospect/segment	In-place res. (MSm ³ oe) 100%, Total Structure			Recoverable res. (MSm ³ oe) 100%, Total Structure		
		P90	Mean	P10	P90	Mean	P10
<i>Pre drill segment (unproven resources)</i>	Spinell Nord	0.4	4.3	11.7	0.1	2.1	6.4
	Spinell Vest A	1.4	10.7	25.4	0.6	5.0	12.0
	Spinell Vest B	1.1	1.5	1.9	0.5	0.7	0.9
	Gullhøna	0.8	3.6	6.6	0.3	1.7	3.2

Table 3 Prognosed resources in untested segments in PL429, assuming the Spinell Nord and Vest A & B segments are not in communication, and fill down to deeper reservoir levels is possible.