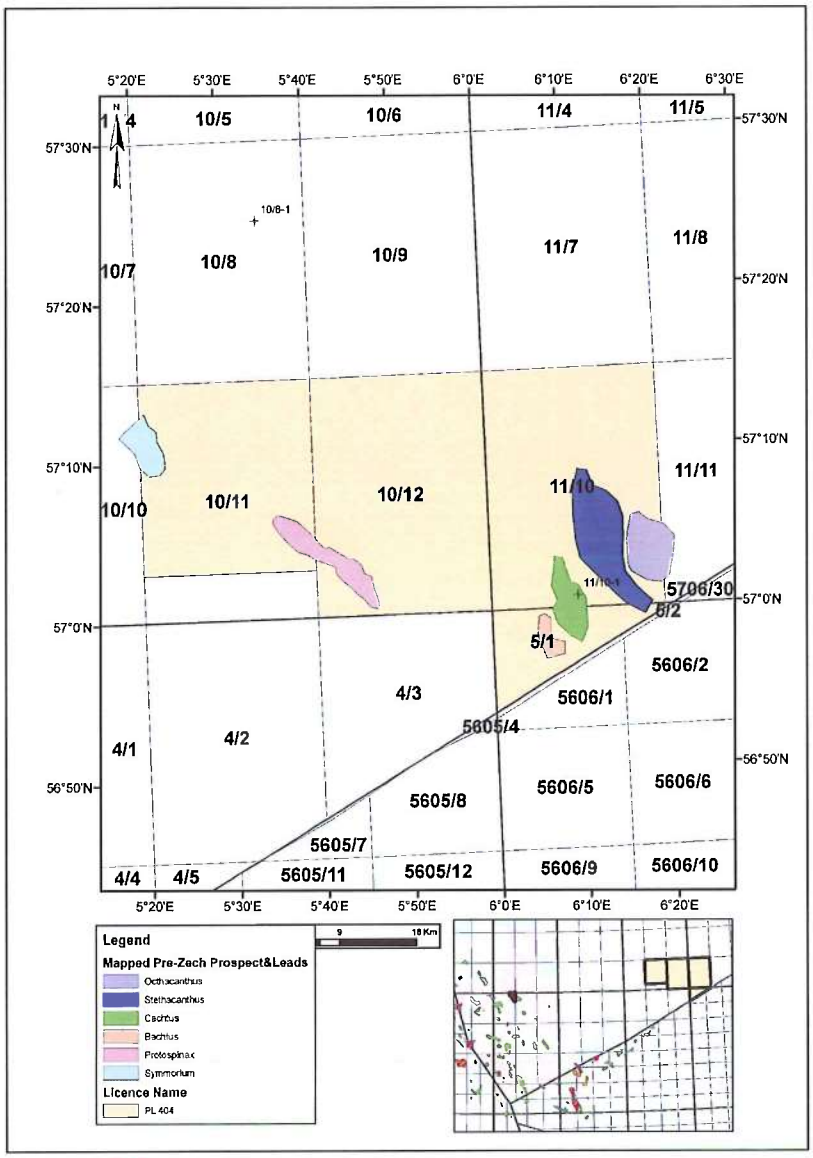
PL404 Licence Relinquishment Report



ConocoPhillips

bayerngas norge

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PL404 Licence Relinquishment Report

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1 Summary and Conclusion

PL404 was situated in the Norwegian-Danish basin in Norwegian waters, adjacent to the Danish border. The license covered blocks 10/12, 11/10 and part of blocks 10/11 and 5/1. The license was awarded 16th February 2007, and had a seismic work committment. An extension to the initial period was granted, due to delays in drilling in PL331, and the final license extension date was set to 16th August 2012. The main play in the PL404 is the Pre-Zechstein play, with a Carboniferous source, Permian Rotliegendes aeolian sandstone reservoir and Zechstein salt as the primary seal.

This report summarises the work done in 2007-2012, after the license was awarded, and after drilling the 8/10-3 (Megalodon) well in PL331 in block 8/10 to the west of PL404. The main elements of updates on the license have been interpretation of NSR 2D long offset seismic, re-interpretation of older vintage seismic, depth conversion analysis, basin modelling and volume calculations. The final update to the evaluation was done after drilling of the Megalodon well and carrying out 2D PSDM reprocessing over the Protospinax Lead. The Megalodon well did find a Rotliengendes reservoir section, although deeper than expected below an expanded shale section; however it did not find any traces of hydrocarbons.

Compared to Megalodon the remaining PL404 leads may be positioned differently relative to the prognosed source basin for hydrocarbon migration. However, the major risk element is still the presence of a working Carboniferous source basin. Due to the nature of the salt, the trap geometry and volumetric calulations are very uncertain.

Based on the results from the 8/10-3 Megalodon well with no indications of a working source rock interval, together with post well mapping and geological evaluations, the risk of prospectivity in the PL404 license is considered to be too high to pursue. The PL404 partnership therefore decided to fully relinquish the license.

2 Key License History

The application for this license was submitted in 2006 by ConocoPhillips. The PL499S licence was awarded on 16th February 2007 to ConocoPhillips (operator) with 100% equity.

The initial work obligations were to acquire 2000km 2D seismic (long cable).
Within two years relinquish or choose 1) or 2):

1. Acquire 300km2 long cable 3D seismic. Drill/Drop within 4 years. Well shall explore Rotliegendes Group. DoC/Relinquish within 6 years.
2. One firm well should investigate prospectivity of the Rotliegendes Group. DoC/Relinquish within 4 years. Submit PDO or relinquish within 5 years.

The initial work obligation regarding 2D seismic was completed.

Within the 2 year requirement ConocoPhillips elected to take alternative 1 as a forward work program, with a modified work program to carry out PSDM reprocessing of 200 line kilometres of long offset 2D instead of acquiring a new 3D. This was accepted by the OD on 23rd January 2009.

During 2009 ConocoPhillips farmed out 30% of the PL404 equity to Bayerngas Norge AS.

Due to the 2/4-W incident at Ekofisk which resulted in the rig Mærsk Gallant being taken for emergency remedial work and the 8/10-3 was delayed. Thus an application for an 18 month license extension for PL404 was submitted in August 2009. Approval of this request was granted by the Ministry in a letter on 22nd September 2009 and the new deadline for a drill/drop decision was set to 16th August 2012.

Following the completion of the Megalodon well, which found Permian reservoir rocks but no signs of hydrocarbons, re-evaluation in the light of the well results was carried out on the PL404 prospectivity. Due to the high anticipated risk on the prospectivity the PL404 partnership decided to fully relinquish the license with no well activity.

3 Database

3.1 Well database

Wells included in the common license database are listed in Table 3.1. Note that most do not penetrate the Rotliegendes, the main prospective interval in the license.

Table 3.1 PL404 well database

Well database	
NOR 01/03-05	UK 09/11-1
NOR 02/01-07	UK 30/21-1
NOR 02/04-17	UK 30/22B-1
NOR 02/06-03	UK 30/23-1
NOR 02/07-02	UK 30/23-2A
NOR 02/07-22	UK 30/23A-3
NOR 02/07-23	UK 30/24-05
NOR 02/07-27	UK 30/24-07
NOR 02/07-29	UK 30/24-10
NOR 02/10-01	UK 30/24-14
NOR 02/11-08	UK 30/24-15
NOR 02/11-09	UK 30/24-18
NOR 02/12-01	UK 30/24-19
NOR 03/05-01	UK 30/24-21
NOR 07/03-01	UK 30/24-24
NOR 09/04-05	UK 30/24-25
NOR 09/08-01	UK 30/24-27
NOR 09/11-01	UK 30/24-35
NOR 09/12-01	UK 30/24-36
NOR 10/05-01	UK 30/25A-4
NOR 10/07-01	UK 30/27-1
NOR 10/08-01	UK 30/28-1
NOR 11/09-01	UK 30/29A-1
NOR 11/10-01	UK 30/29A-2
NOR 15/12-03	UK 30/29A-3
NOR 8/10-3	UK 30/30-1
DK ELNA-1	UK 30/30-2
DK FELICIA-1	UK 30/30-3S1
DK IBENHOLT-1	UK 31/21-1
DK INEZ-1	UK 31/26-3
DK JANE-1 (D-1)	UK 31/26-4
DK LENA-1 (K-1)	UK 31/26A-5
DK NINA-1 (F-1)	UK 31/26A-8
	UK 31/26A-9A
	UK 38/1-1
	UK 38/3-1

3.2 Seismic data

The original seismic database over the area is detailed in the 2006 APA application document. The license was covered by 2D seismic data with two 3D seismic surveys (NODAB-97; MC3D-Q4) covering part of the license. However the 3D was not optimal for imaging the sub salt section.

As part of the work commitment the PL404 partnership acquired NSR long offset 2D seismic over the license using TGSNopec to infill existing NSR regional lines. The final NSR coverage provided a 1.25*1.25 km grid coverage as shown in Figure 3.1 and listed in Table 3.2.

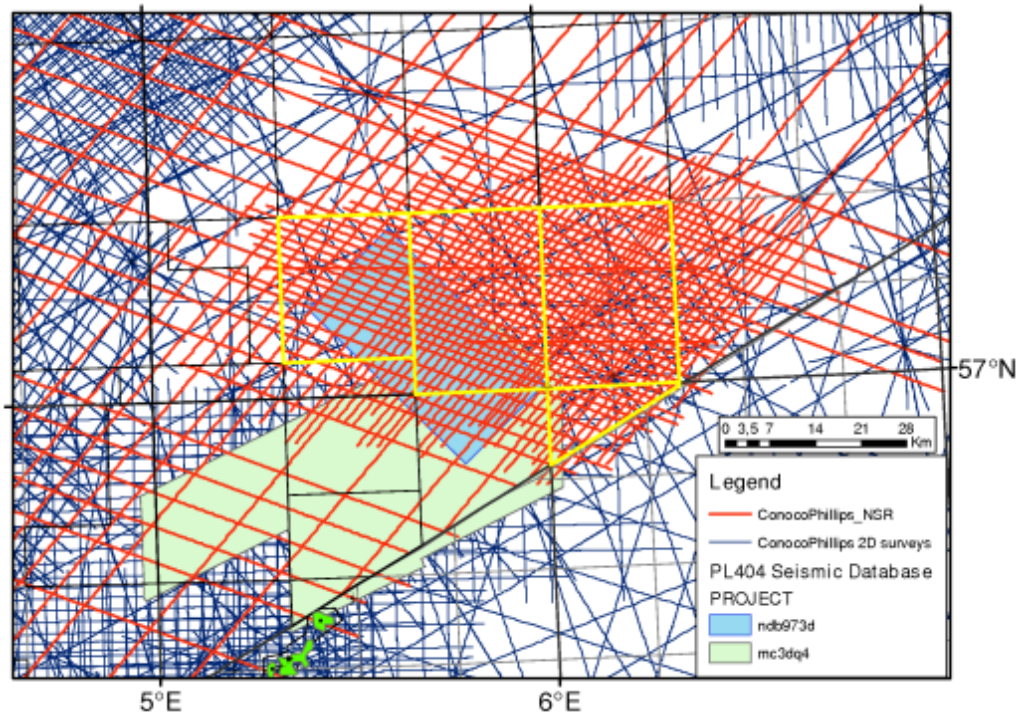

Figure 3.1 2D and 3D seismic database

Table 3.2 PL404 NSR 2D Seismic Line List

Name	Survey
nsr07 - 01	NSR07
nsr07 - 02	NSR07
nsr07 - 42	NSR07
nsr07 - 511115	NSR07
nsr07 - 511125	NSR07
nsr07 - 511135	NSR07
nsr07 - 511145	NSR07
nsr07 - 511155	NSR07
nsr07 - 511165	NSR07
nsr07 - 511175	NSR07
nsr07 - 511185	NSR07
nsr07 - 511195	NSR07
nsr07 - 522925	NSR07
nsr07 - 522935	NSR07
nsr07 - 522945	NSR07
nsr07 - 522955	NSR07
nsr07 - 522965	NSR07
nsr07 - 522975	NSR07
nsr07 - 522985	NSR07
nsr07 - 522995	NSR07
nsr07 - 523005	NSR07
nsr07 - 523015	NSR07
nsr07 - 523025	NSR07
nsr07 - 523035	NSR07
nsr07 - 523045	NSR07
nsr07 - 6111325	NSR07
nsr07 - 6111375	NSR07
nsr07 - 6111425	NSR07
nsr07 - 6111475	NSR07
nsr07 - 6111525	NSR07
nsr07 - 6111575	NSR07
nsr07 - 6111625	NSR07
nsr07 - 6111675	NSR07
nsr07 - 6111725	NSR07
nsr07 - 6111775	NSR07
nsr07 - 6111825	NSR07
nsr07 - 6111875	NSR07
nsr07 - 6111925	NSR07
nsr07 - 6111975	NSR07
nsr07 - 6229275	NSR07
nsr07 - 6229325	NSR07
nsr07 - 6229375	NSR07
nsr07 - 6229425	NSR07
nsr07 - 6229475	NSR07
nsr07 - 6229525	NSR07
nsr07 - 6229575	NSR07
nsr07 - 6229625	NSR07
nsr07 - 6229675	NSR07
nsr07 - 6229725	NSR07
nsr07 - 6229775	NSR07
nsr07 - 6229825	NSR07
nsr07 - 6229875	NSR07
nsr07 - 6229925	NSR07
nsr07 - 6229975	NSR07
nsr07 - 6230025	NSR07

Name	Survey
NSR04-22292	NSR04
NSR04-21116	NSR04
NSR04-11112	NSR04
NSR04-11120	NSR04
NSR04-12296	NSR04
NSR04-12304	NSR04
NSR04-21116	NSR04
NSR04-22300	NSR04
NSR04-31110	NSR04
NSR04-31114	NSR04
NSR04-31118	NSR04
NSR04-32294	NSR04
NSR04-32298	NSR04
NSR04-32302	NSR04
NSR04-41113	NSR04
NSR04-41115	NSR04
NSR04-41117	NSR04
NSR04-41119	NSR04
NSR04-41121	NSR04
NSR04-42293	NSR04
NSR04-42295	NSR04
NSR04-42297	NSR04
NSR04-42299	NSR04
NSR04-42301	NSR04
NSR04-42303	NSR04
NSR04-42305	NSR04

In addition an approximately 200km subset of the NSR 2D lines were reprocessed through a Pre Stack Depth Migration sequence over the Protospinax Lead as shown in Figure 3.2 in an attempt to improve the sub-salt imaging beneath a salt diapir.

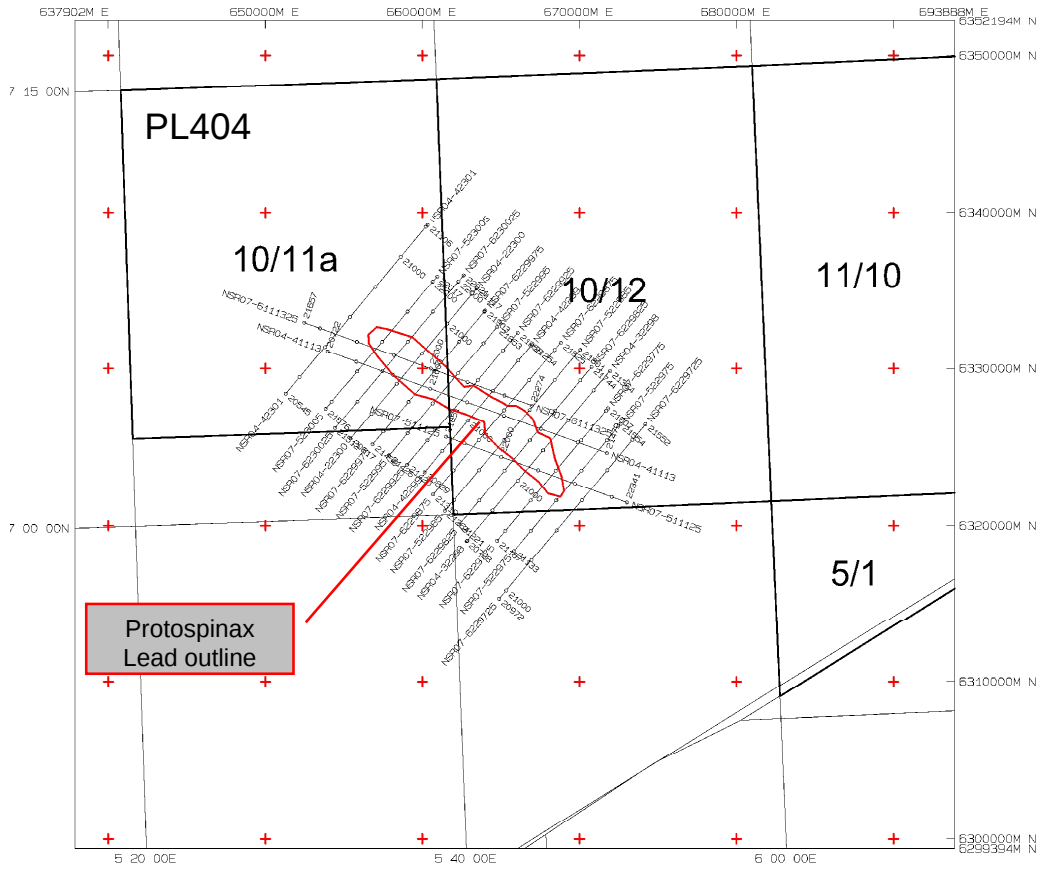

Figure 3.2 Map of NSR 2D lines used in PSDM reprocessing

4 Review of Geological Framework

4.1 Permian Stratigraphy

The main change in our understanding of the stratigraphy of the Permian in the North Permian Basin, is that the Frazerburgh Formation is much more extensively developed in the basin than what was prognosed prior to drilling of the 8/10-3 Megalodon well in PL331 to the west of PL404. This formation had been identified in some Norwegian wells previously but as only a thin interval less than 30m thick. The Megalodon well penetrated 192m of lacustrine shales assigned to the Fraserburgh Formation before entering the Auk Fm sandstones. The lacustrine interval in this well has been correlated with similar rocks in the 2/4-20, 2/1-7 and 9/4-5. Although thinner in these wells, common for all was that the lacustrine rocks were deposited above the aeolian sandstones and directly below the Kupferschiefer.

4.2 Reservoir Presence and Quality

The first real basin centre test was the Megalodon well which confirmed the pre-drill depositional model in many aspects although also indicated some variability in the facies. A 150m section of sabkha sandstones of the Auk Formation was penetrated. The sandstones are interpreted to have been deposited under both wet and dry sabkha conditions although primarily influenced by aeolian input.

The aeolian sandstone reservoir in the 8/10-3 Megalodon well had somewhat lower porosities than most offset wells, averaging at 14% with a net-to-gross of 0.85. RFTs in the 8/10-3 well indicated permeabilities of around 2-4 mD. These are consistent with those used in the PL404 evaluations.

4.3 Mapping Updates

Post Megalodon interpretation carried out after the results of the 8/10-3 well primarily focussed upon the new observations of thicker Frazerburgh formation, resulting in new Top Rotliegendes and Top Rotliegendes sand maps, and also updates were made to the Base Rotliegendes. Mapping of the 150m thick claystone away from the Megalodon well indicates that the interval is likely thinner or absent in the PL404 area (Figure 4.1).

Limited further mapping of the prospectivity has been carried out since 2009 (Figure 4.2) as the uncertainty from 2D imaging and depth conversion does not warrant remapping. The only area that has been investigated in more detail is the Protospinax lead where PSDM processing of the 2D data led to some improvement in the seismic imaging. The subsequent new depth maps over Protospinax confirm that the structure at Top Rotliegendes is mostly an artifact of pull up under the salt diapir and there is limited closure (ADD FIG) and the Rotliegendes just rises up to the north.

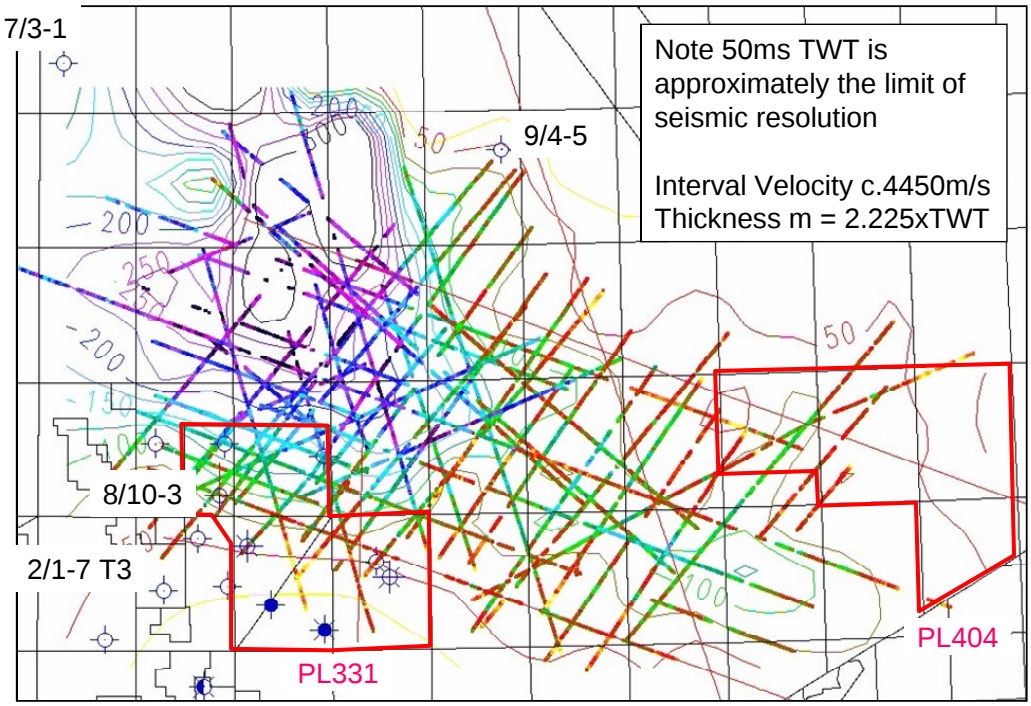

Figure 4.1 TWT thickness map of the Frazerburgh Fm. *(TWT ms). Mapped post Megalodon well showing thinning of the interval towards PL404.*

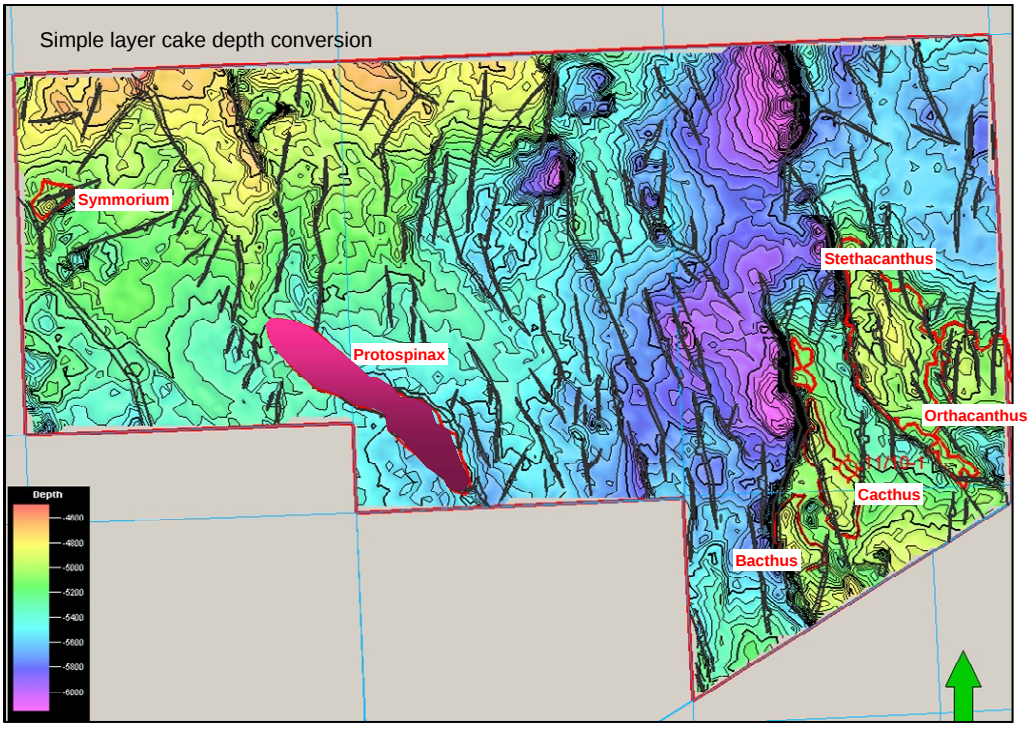

Figure 4.2 Top Rotliegendes Depth Structure Map. *(depth m) showing the location of the currently defined leads.*

4.4 Source Rocks and Hydrocarbon Migration

The presence and quality of source rocks have always constituted the greatest uncertainties for the prospectivity of the Rotliegendes Pre-Zechstein Play. See the 20067 APA Application document for more detailed description of the source rocks.

After the APA award in 2007 the 3D basin model was updated, to show the new interpretation and to locate fetch areas for the different leads in the license.

The Megalodon well was dry and the failure is believed to be related to either the absence of functioning source rocks or poor migration efficiency. The leads in the PL404 licence are on the other side of the Carboniferous source basin, and thus difficult to comment on migration issues and carrier bed quality. The risk on source presence/effectiveness is thought to be high (see section 5.3 Risking.

5 Prospect Updates

Most of the leads were originally identified in the license area defined on the top Rotliegendes time and depth maps and were briefly described in the 2006 APA Application document. These maps have been subsequently updated using the new 2D seismic data and depth converted using various methods. This work resulted in the disappearance of the lead called Hybodus, and the identification of Cachtus and Bachtus leads.

The PSDM reprossing over the Protospinax lead showed that there was limited structural closure, and that most of the apparent structure was due to velocity effects from the overlying salt structure. Thus the Protospinax is no longer carried as a lead.

Evaluation of the size and risk of the leads was carried out prior to drilling the 8/10-3 Megalodon well. In the final evaluation of the licence, post Megalodon, no new volume estimations have been made although re-risking has been performed, see 5.3 Risking. The major risk elements are considered to be source presence and trap geometries. 3D seismic interpretation would be necessary for maturing the leads to prospects providing more confidence in the trap mapping, but would not address the source presence risk.

Secondary potential within Triassic and younger sequences has not been pursued due to the main issue with a working petroleum generating system in the area.

5.1 Trap

According to the most recent interpretation and depth conversion, the structures appear as large closures in time, but the corresponding depth models vary considerably depending upon which depth conversion method is used. The actual shape and configuration of the traps is uncertain due to the uncertainty in 2D imaging and depth conversion around the salt structures.

Whilst long offset 3D seismic would improve the structural imaging and therefore the trap risk, it would not address the critical risk of hydrocarbon source presence.

5.2 Volumes

Volumetric estimations for the PL404 leads are summarised in Table 5.1 and data sheets for the main leads are provided in Table 5.2, Table 5.3, Table 5.4 and Table 5.5.

Table 5.1 PL404 Volumes and risk summary

Lead	Recoverable Resources			Risk
	P10	P50	P90	Ps
Stethacanthus	51	351	567	6 %
Orthacanthus	6	121	205	6 %
Bacthus	8	50	80	6 %
Cacthus	10	65	105	8 %
Cacthus North	2	10	15	8 %
Symmorium	10	65	105	8 %

Table 5.2 Stethacanthus Lead Data Sheet

Block	Prospect name		Discovery/Prosp/Lead		Prosp ID (or New!)	NPD approved?
11/10	Stethacanthus		Lead		*NPD will insert data*	*NPD will insert data*
Play (name / new)	Structural element		Company/ reported by / Ref. doc.			Year
NPD will insert data	Danish Norwegian Basin		ConocoPhillips/ PL404 relinquishment report			201
Oil/Gas case	**Resources IN PLACE**					
Gas	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,7	5,0	9,7
Gas 10^9 Sm^3	13	81	124			
	Resources RECOVERABLE					
	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,6	3,9	7,5
Gas 10^9 Sm^3	8	58	89			
	Which fractiles are used as:		Low:	P90	High:	P10
Type of trap	Water depth (m)		Reservoir Chrono (from - to)		Reservoir Litho (from - to)	
3-way Fault	70		Capatanian - Capatanian		Rotliegendes (Auk Fm)	
Source Rock, Chrono	Source Rock, Litho		Seal, Chrono		Seal, Litho	
Carboniferous	Coal / shale		Zechstein		Salt	
Seismic database (2D/3D):	2D NSR Long offset 2007 and 2004 data					
Probability of discovery:						
Technical (oil+gas case)	6,00 %			Prob for oil/gas case		100% Gas
Probability (fraction):	Reservoir (P1)	Trap (P2)	Charge (P3)	Retention (P4)		
	0,65	0,9	0,21	0,5		
Parametres:	Low	Base	High	Comments		
Depth to top of prospect (m)	4800	4800	4800			
Area of closure (km^2)	12	47	50,5			
Reservoir thickness (m)	100	200	430			
HC column in prospect (m)	200	325	350			
Gross rock vol. (10^9 m^3)	0,9	5,5	6,6			
Net / Gross (fraction)	0,35	0,65	0,8			
Porosity (fraction)	0,1	0,14	0,18			
Water Saturation (fraction)	0,65	0,4	0,2			
Bg. (<1)	0,0027	0,0028	0,0029			
Bo. (>1)						
GOR, free gas (Sm^3 /Sm^3)	9990	14045	21008			
GOR, oil (Sm^3 /Sm^3)						
Recovery factor, main phase	0,62	0,72	0,77			
Recovery factor, ass. phase	0,62	0,72	0,77			
Temperature, top res (deg C) :	133	Pressure, top res (bar) :		787		

Table 5.3 Orthacanthus Lead Data Sheet

Block	Prospect name		Discovery/Prosp/Lead		Prosp ID (or New!)	NPD approved?
11/10	Orthacanthus		Lead		*NPD will insert data*	*NPD will insert data*
Play (name / new)	Structural element		Company/ reported by / Ref. doc.			Year
NPD will insert data	Danish Norwegian Basin		ConocoPhillips/ PL404 relinquishment report			2013
Oil/Gas case	**Resources IN PLACE**					
Gas	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,1	1,8	3,4
Gas 10^9 Sm^3	2	28	43			
	Resources RECOVERABLE					
	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,1	1,4	2,7
Gas 10^9 Sm^3	1	20	32			
	Which fractiles are used as:		Low:	P90	High:	P10
Type of trap	Water depth (m)		Reservoir Chrono (from - to)		Reservoir Litho (from - to)	
3-way Fault	70		Capatanian - Capatanian		Rotliegendes (Auk Fm)	
Source Rock, Chrono	Source Rock, Litho		Seal, Chrono		Seal, Litho	
Carboniferous	Coal / shale		Zechstein		Salt	
Seismic database (2D/3D):	2D NSR Long offset 2007 and 2004 data					
Probability of discovery:						
Technical (oil+gas case)	6,00 %			Prob for oil/gas case		100% Gas
Probability (fraction):	Reservoir (P1)	Trap (P2)	Charge (P3)	Retention (P4)		
	0,65	0,9	0,21	0,45		
Parametres:	Low	Base	High	Comments		
Depth to top of prospect (m)	4910	4910	4910			
Area of closure (km^2)	4	19	22			
Reservoir thickness (m)	100	200	430			
HC column in prospect (m)	80	215	240			
Gross rock vol. (10^9 m^3)	0,1	1,8	2,3			
Net / Gross (fraction)	0,35	0,65	0,8			
Porosity (fraction)	0,1	0,14	0,18			
Water Saturation (fraction)	0,65	0,4	0,2			
Bg. (<1)	0,0027	0,0028	0,0029			
Bo. (>1)						
GOR, free gas (Sm^3 /Sm^3)	9990	14045	21008			
GOR, oil (Sm^3 /Sm^3)						
Recovery factor, main phase	0,46	0,71	0,78			
Recovery factor, ass. phase	0,46	0,71	0,78			
Temperature, top res (deg C) :	136	Pressure, top res (bar) :		798		

Table 5.4 Bacthus Lead Data Sheet

Block	Prospect name		Discovery/Prosp/Lead		Prosp ID (or New!)	NPD approved?
11/10	Bacthus		Lead		*NPD will insert data*	*NPD will insert data*
Play (name / new)	Structural element		Company/ reported by / Ref. doc.			Year
NPD will insert data	Danish Norwegian Basin		ConocoPhillips/ PL404 relinquishment report			2013
Oil/Gas case	**Resources IN PLACE**					
Gas	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,5	1,1	1,8
Gas 10^9 Sm^3	10	16	24			
	Resources RECOVERABLE					
	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,3	0,8	1,4
Gas 10^9 Sm^3	5	11	17			
	Which fractiles are used as:		Low:	P90	High:	P10
Type of trap	Water depth (m)		Reservoir Chrono (from - to)		Reservoir Litho (from - to)	
3-way Fault	70		Capatanian - Capatanian		Rotliegendes (Auk Fm)	
Source Rock, Chrono	Source Rock, Litho		Seal, Chrono		Seal, Litho	
Carboniferous	Coal / shale		Zechstein		Salt	
Seismic database (2D/3D):	2D NSR Long offset 2007 and 2004 data					
Probability of discovery:						
Technical (oil+gas case)	6,00 %		Prob for oil/gas case		100% Gas	
Probability (fraction):	Reservoir (P1)	Trap (P2)	Charge (P3)	Retention (P4)		
	0,65	0,9	0,21	0,45		
Parametres:	Low	Base	High	Comments		
Depth to top of prospect (m)	4830	4830	4830			
Area of closure (km^2)	6	8	9			
Reservoir thickness (m)	100	200	350			
HC column in prospect (m)		275				
Gross rock vol. (10^9 m^3)	0,8	0,9	1,1			
Net / Gross (fraction)	0,35	0,65	0,8			
Porosity (fraction)	0,1	0,14	0,18			
Water Saturation (fraction)	0,65	0,4	0,2			
Bg. (<1)	0,0027	0,0028	0,0029			
Bo. (>1)						
GOR, free gas (Sm^3 /Sm^3)	9990	14045	21008			
GOR, oil (Sm^3 /Sm^3)						
Recovery factor, main phase	0,50	0,69	0,77			
Recovery factor, ass. phase	0,50	0,69	0,77			
Temperature, top res (deg C) :	134	Pressure, top res (bar) :		790		

Table 5.5 Cacthus Lead Data Sheet

Block	Prospect name		Discovery/Prosp/Lead		Prosp ID (or New!)	NPD approved?
11/10	Cacthus		Lead		*NPD will insert data*	*NPD will insert data*
Play (name / new)	Structural element		Company/ reported by / Ref. doc.			Year
NPD will insert data	Danish Norwegian Basin		ConocoPhillips/ PL404 relinquishment report			2013
Oil/Gas case	**Resources IN PLACE**					
Gas	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,7	1,4	2,4
Gas 10^9 Sm^3	13	21	31			
	Resources RECOVERABLE					
	Main phase			Ass. phase		
	Low	Base	High	Low	Base	High
Oil 10^6 Sm^3				0,5	1,1	1,9
Gas 10^9 Sm^3	7	15	22			
	Which fractiles are used as:		Low:	P90	High:	P10
Type of trap	Water depth (m)		Reservoir Chrono (from - to)		Reservoir Litho (from - to)	
3-way Fault	70		Capatanian - Capatanian		Rotliegendes (Auk Fm)	
Source Rock, Chrono	Source Rock, Litho		Seal, Chrono		Seal, Litho	
Carboniferous	Coal / shale		Zechstein		Salt	
Seismic database (2D/3D):	2D NSR Long offset 2007 and 2004 data					
Probability of discovery:						
Technical (oil+gas case)	6,00 %			Prob for oil/gas case		100% Gas
Probability (fraction):	Reservoir (P1)	Trap (P2)	Charge (P3)	Retention (P4)		
	0,65	0,9	0,21	0,5		
Parametres:	Low	Base	High	Comments		
Depth to top of prospect (m)		4870				
Area of closure (km^2)	11	13	15			
Reservoir thickness (m)	100	200	430			
HC column in prospect (m)		205				
Gross rock vol. (10^9 m^3)	1,0	1,2	1,4			
Net / Gross (fraction)	0,35	0,65	0,8			
Porosity (fraction)	0,1	0,14	0,18			
Water Saturation (fraction)	0,65	0,4	0,2			
Bg. (<1)	0,0027	0,0028	0,0029			
Bo. (>1)						
GOR, free gas (Sm^3 /Sm^3)	9990	14045	21008			
GOR, oil (Sm^3 /Sm^3)						
Recovery factor, main phase	0,56	0,72	0,78			
Recovery factor, ass. phase	0,56	0,72	0,78			
Temperature, top res (deg C) :	135	Pressure, top res (bar) :		794		

5.3 Risking

The critical risk for the leads in PL404 is source rock presence. Source presence being a ***shared*** risk means that when a well in the same play proves the presence of source rocks, this risk element would be eliminated for any remaining prospects. Since the PL331 Megalodon 8/10-3 well was dry, a working Carboniferous source rock and charge system has not yet been proven. There is a large uncertainty, but still a possibility of source as the Megalodon well may have failed due to potential migration issues precluding charging the Megalodon structure.

A post Megalodon re-evaluation of the risk of the PL404 license leads has been performed and the pre- and post- Megalodon risks are shown in Table 5.6. Overall the probablility of success for the PL404 leads have decreased due to the negative outcome of the Megalodon well. There is a significant perceived increase in source risk. The reservoir risks have not changed as the seismic mapping of the lacustrine unit seen in the 8/10-3 well shows it to thin and likely be absent in the PL404 area.The migration risk has not been changed as the leads are located adjacent to the prognosed source basin and also the containment risk has not changed. The trap risk has not changed with the exception of that for the Protospinax Lead due to the 2D PSDM data revealing the velocity/imaging effects of the overlying salt.

Table 5.6 Risk Summary of PL404 Leads. Pre and post 8/10-3 Megalodon well

Stethacanthus

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,94	0,90	
Migration	0,81	0,70	
Containment	0,45	0,50	Salt seal issue
Ps	**8 %**	**6 %**	

Orthacanthus

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,94	0,90	
Migration	0,81	0,70	
Containment	0,45	0,45	Salt seal issue
Ps	**8 %**	**6 %**	

Bacthus

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,94	0,94	
Migration	0,81	0,70	
Containment	0,45	0,45	Salt seal issue
Ps	**8 %**	**6 %**	

Cacthus

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,94	0,94	
Migration	0,81	0,70	
Containment	0,64	0,64	Salt seal issue
Ps	**12 %**	**8 %**	

Cacthus North

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,94	0,94	
Migration	0,81	0,70	
Containment	0,64	0,64	Salt seal issue
Ps	**12 %**	**8 %**	

Symmorium

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,72	0,70	
Migration	0,81	0,70	
Containment	0,79	0,80	
Ps	**11 %**	**8 %**	

Protospinax (post PSDM)

	Pre Megalodon	Post Megalodon	Comments
Source	0,37	0,30	Main Risk
Reservoir	0,65	0,65	
Trap	0,72	0,30	
Migration	0,81	0,70	
Containment	0,79	0,80	
Ps	**11 %**	**3 %**	

6 References

ConocoPhillips (2004) *Awards in Predefined areas 2004, Open blocks 8/10 & 8/11 and part and Blocks 2/2 and 2/3*

ConocoPhillips (2006) *Awards in Predefined areas 2006, Open blocks 4/2, 4/5, 5/1, 10/11, 10/12 and 11/10*