PL642 Relinquishment Report

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List of figures

List of tables

1 Key License History

PL642 was originally awarded as part of the APA 2011, on the 3rd of February 2012. Repsol Exploration Norge AS, now renamed Repsol Norge AS, was appointed operator of the license with a 40% share and the remaining ownership was distributed as follows: OMV Norge AS 20%, Spring Energy Norway AS later on Tullow Norge AS 20% and Petoro AS 20%. The partnership remained unchanged until the DoD decision. The initial Drill or Drop date was the 3rd of February 2014. The drill decision was taken with the support of all partners except Tullow Norge AS. Hagar well was finally spud the 21st of August 2015. At that moment the license ownership was: RNAS 40% (operator), Petoro AS 20%, VNG Norge AS 10%, Moeco Oil & Gas Norge AS 10%, OMV Norge AS 10% and Pure E&P Norway AS 10%.

Initial work obligations and work periods

Within 2 years or before 03/02/2014
- Buy existing 3D seismic (MC3D-FH2006)
- Conduct relevant geological and geophysical studies
- Drill or Drop decision before 03/02/2014

Within 4 years or before 03/02/2016
- Take a "concretization decision" (BOK - Beslutning Om Konkretisering) based on feasibility studies

Within 6 years or before 03/02/2018
- Decide on commerciality and start preparation for a plan for development (BOV - Beslutning Om Videreføring)

Within 7 years or before 03/02/2019
- Decide to submit a plan for development and operation to MPE

Any applications and grants for extension of deadlines

Repsol Norge AS asked for a 6-month extension of the BoK with the support of partners in January 2016. The extension was granted by the government in February 2016. The reason for the extension was that several post well studies were still ongoing and were not going to be finished before the 3rd of February 2016, when the next decision had to be taken. The partnership decided to ask for the extension of the exploration period in order to finalize and integrate all the post well studies. The post well studies were crucial to the partnership in order to have conclusive results on the remaining prospectivity in the license.

Overview of meetings held

- License Kick off Meeting: 1st March 2012
- Reprocessing start up Meeting: 30th May 2012
- EC Meeting: 16th November 2012
- Work Meeting: 27th May 2013

- Pre-DoD Meeting: 18th September 2013
- EC/MC Meeting: 11th November 2013
- Work Meeting: 24th January 2014
- EC/MC Meeting: 21st March 2014
- EC/MC Meeting: 27th June 2014
- Work Meeting, Site Specific Risk Assessment: 19th Agust 2014
- Work Meeting: Well location Risk Assessment: 11th September 2014
- EC/MC Meeting: 14th November 2014
- Work Meeting, Hagar well Specific Risk Assessment: 19th January 2015.
- MC Meeting: 19th January 2015
- EC/MC Meeting: 16th April 2015
- MC Meeting, Drilling Strategy: 19th June 2015
- EC/MC Meeting: 27th November 2015
- EC/MC Meeting: 31st May 2016

Reason for relinquishment

The work program on the license was completed by buying the existing 3D seismic (MC3D-FH2006) and conducting relevant G&G studies in first license years. The prospect and leads were mapped and completely evaluated and Hagar prospect was identified as a good candidate to enter into the next phase in the license by committing to an exploration well. With the drilling of the Hagar exploration well the commitments of the second exploration phase were fulfilled. Hagar well turned out to be dry and the resource assessments carried out on the remaining prospectivity did not support further investments on the license. Therefore, the operator recommended to the partnership the relinquishment of the license which was unanimously supported.

Figure 1.1

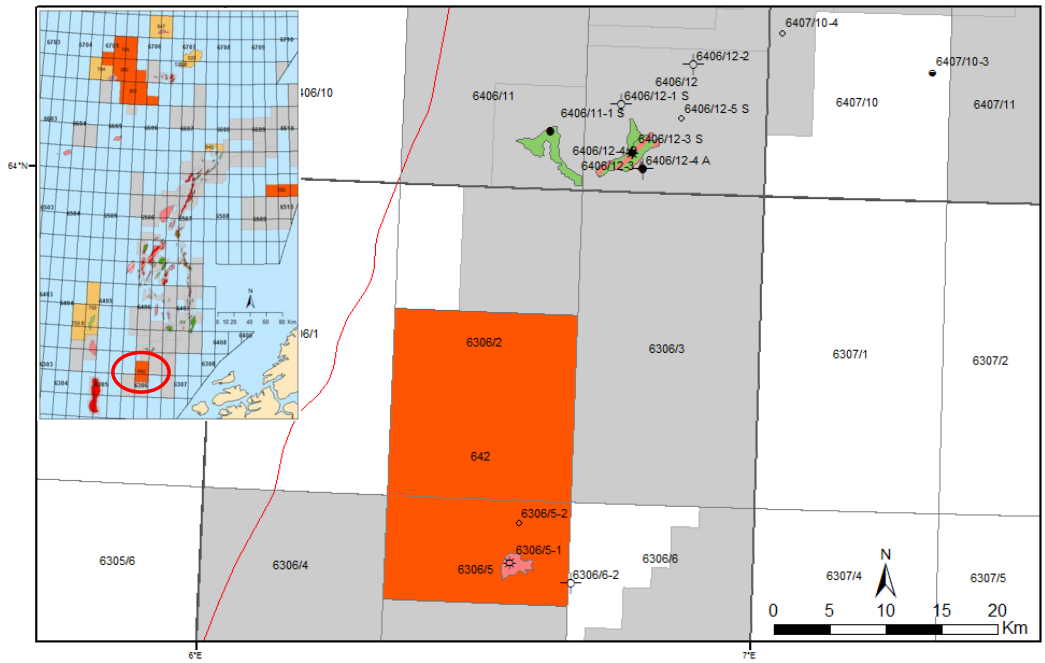

Figure 1.1 Base Map Showing location of PL642

2 Database

Well Database

The well database Table 2.1 is a selection of publically available wells in the vicinity of PL642 license. The wells are key wells in adding value to the license in terms of tying seismic to wells, analysing reservoir properties, correlating reservoir conditions to area of interest and giving valuable input and calibration points to the basin model that covers the license and its vicinity. All wells in the common database were drilled and released before the license was awarded.

Table 2.1 Well database for PL642

Well	Operator/Drilling year	TD (m MD) and Fm at TD	Well used for
6306/5-1T2	HESS/1997	2050 / Kvitnos	Correlation/Petrophysics/Well calibration/Well velocity control
6306/6-1	DNO/1994	1317 / Basement	Correlation/Petrophysics/Core study/Basin modelling/Well calibration/Well velocity control
6306/6-2	DNO/2009	2080 / Basement	Correlation/Basin Modelling/Well calibration/Well velocity control
6306/10-1	SHELL/1990	3187 / Basement	Correlation/Facies Analysis/Petrophysics/Core study/Basin modelling/
6406/11-1S	SAGA/1991	4185 / Red Beds	Correlation/Petrophysics/Basin Modelling
6406/12-1S	DNO/1991	3965 / Melke	Correlation/Facies Analysis/Petrophysics/Core study
6406/12-2	DNO/1995	4367 / Melke	Correlation/Facies Analysis/Petrophysics/Core study
6407/9-2	SHELL/1985	1865 / Tilje	Correlation/Facies Analysis/Core study
6407/9-5	SHELL/1985	1820 / Not	Correlation/Core study
6407/10-1	NORSK HYDRO/1987	3347 / Grey Beds	Correlation/Facies Analysis/Petrophysics/Well calibration
6407/10-2	NORSK HYDRO/1999	3825 / Tilje	Correlation/Facies Analysis/Petrophysics/Well calibration
6407/12-1	SHELL/1999	1805 / Garn	Correlation/Facies Analysis/Well calibration

Seismic Database

The seismic database consists of publically available 2D data, multiclient 2D data and publically available 3D datasets within and in the vicinity of PL642 in addition to the purchased MC3D-FH2006 survey. Table 2.2 and Figure 2.1 illustrate and list the seismic datasets used in the license.

Table 2.2 Seismic database for PL642.

2D Surveys Public	2D Surveys Multiclient	3D surveys Public	3D Surveys Multiclient
BPN891, BPN89R99_FULLOPF,	MV01RE	SH9002	MC3D-FH2006
FH91, GFB84, GFD85, HT97RE,	MC-NH0508	SH9104	
MN84-3, MN89-13, NA-84		ST9302	
NA-87-2, NPD-B-72, NPD-B-84,		CN6306	
SG9110, SG9113, SG9205,		CN6306R97	
SH8403, SH8907, ST8501, ST8705,			
ST8707, ST9595, UH-94, VMT95			

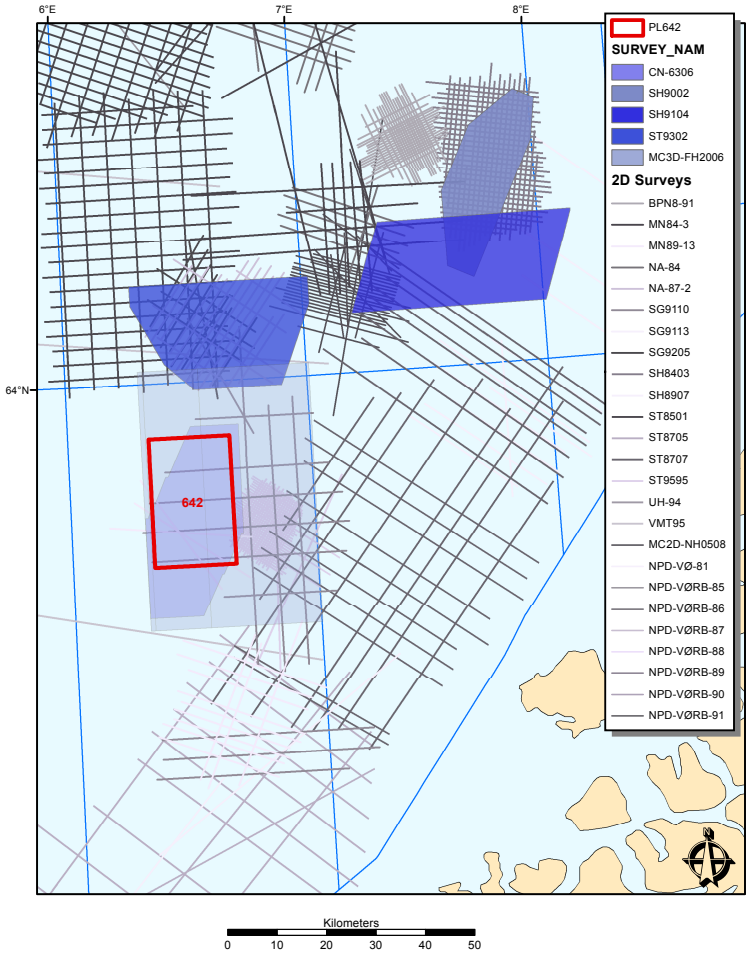

Figure 2.1 Seismic database for PL642

Studies

The biostratigraphic study *Biostratigraphic re-evaluation of the Spekk to Ror Formations, southern Halten Terrace done*by APT on 2012 was included as common database. The study was used to re-interpret the original biostratigraphic data within a consistent framework and re-evaluate the lithostratigraphy.

3 Review of Geological Framework

Studies Performed

Table 3.1 presents the studies performed to develop the prospectivity of the license, to prepare Hagar exploration well and the associated post-drill studies.

Table 3.1 Pre-drill and post drill studies carried out in PL642. EOWR of all the service companies that were involved in the Hagar well as well part of the database of the license are and were uploaded in L2S.

Study Name	Year	Author
PETROGRAPHIC ANALYSIS OF SAMPLES FROM REPSOL EXPLORATION NORGE AS WELLS 6406/12-1S AND 6406/12-2, NORWEGIAN SEA. Report 10077	2012	FUGRO
Biostratigraphic re-evaluation of the Spekk to Ror Formations, southern Halten Terrace	2012	Applied Petroleum Technology AS
Facies, Petrography, Diagenesis & RQ Assessment Upper Jurassic Sandstones - Rogn Fm. Review of Fugro's Petrographic Report Nº 10077	2012	Repsol Exploración – "Disciplinas Geológicas" Team - Clastic Sedimentology
Rock Physics Analysis & Elastic inversion	2012	REPSOL
Petrophysical interpretaion of the Jurassic section in the offset wells	2012-13	REPSOL
Seismic interpretation	2012-14	REPSOL
Sandstone Petrography, Facies & RQ Assessment Juarasic Melke and Rong Fm.	2013	REPSOL
Noise Cancellation Parameterisation	2013	GeoTeric
PETROGRAPHIC ANALYSIS OF SAMPLES FROM WELLS 6306/6-1, 6306/10-1, 6406/12-2 AND 6407/10-1. Report 10208	2013	FUGRO
PL 642 HAGAR SEISMIC PROJECT. Environmental, Social and Health Impact Assessment (ESHIA)	2013	DET NORSKE VERITAS
Blow out calculations for PL 642	2014	Reservoir Development. Executive Regional Unit EAA. - REPSOL
Blow out calculations for PL 642 – GAS CAP	2014	Reservoir Development. Executive Regional Unit EAA. - REPSOL
Seafloor/2D High Resolution Seismic Survey and Habitat Assessment	2014	GARDLINE
GEOHAZARDS STUDY AGREEMENT	2014	OGE - REPSOL
Hagar Site Survey Post Mortem	2014	REPSOL
BLOWOUT AND DYNAMIC WELLKILL SIMULATIONS. EXPLORATION WELL HAGAR (PL642)	2014	ACONA
Hagar Basin modelling	2014	REPSOL
Technical and economical evaluation of a potential discovery case	2014	REPSOL
Offset well analysis	2014	REPSOL
Review of Archive Data from 10 Wells in NOCS Blocks 6406/2, 6406/3, 6406/11, 6406/12 & 6407/10	2015	RPS
Review of Archive Data from 13 Wells in NOCS Blocks 6306/6, 6306/10, 6406/2, 6406/3, 6406/11, 6406/12, 6407/9-1 & 6407/10	2015	RPS
Exploraion Well Planning	2014-2015	REPSOL
Seismic shallow hazard analysis for Hagar well location	2015	Geophysics Upstream - REPSOL
Gas While Drilling Report 6306/5-2 (Hagar)	2015	OGE - REPSOL
Hagar, Preliminary Formation Evaluation WL & LWD data	2015	OGE - REPSOL
Hagar Post Drill Geopressure Report.	2015	OGE - REPSOL
Zero Offset VSP Processing Report, Hagar well	2015	SCHLUMBERGER
Hagar, follow up survey of coral targets, post drilling	2015	DNV-GL
Norwegian Well 6306/5-2 Routine Biostratigraphy Report	2015	Applied Petroleum Technology AS
Geochemistry Data Report – Source Rock, Maturity and Gas Analysis Well 6306/5-2 (Hagar)	2016	Applied Petroleum Technology AS
Well 6306/5-2 Cuttings Study Middle-Upper Jurassic Melke and Rogn Formations Reservoirs SW of Njord-Field	2016	Corex (UK) LTD
A Stratigraphic Reconstruction of Bulk Volatile Chemistry from Fluid Inclusions in 6306/5-2	2016	FIT
Fluid Inclusions Screening Well 6306/5-2 Hagar Norway Sea	2016	Stratigraphy, Petrography and Diagenesis Team - REPSOL
Reservoir Quality Review Well 6306/5-2 Hagar, Norway Sea PL642	2016	Stratigraphy, Petrography and Diagenesis Team - REPSOL
Geological interpretation from GVR borehole images, Well 6306/5-2 Hagar Prospect	2016	Eriksfiod
Determination of the presence of oil in six mud samples corresponding to the depth interval 2900-3217 m of the Hagar well	2016	Technology Centre (CTR-REPSOL)

Results of block evaluation

The work carried out during the initial exploration phase in the license was mainly focused on better defining the Hagar prospect and the leads identified in the application and on trying to de-risk them in order to get a drillable prospect.

The Hagar prospect was defined as a syn-rift wedge of Upper Jurassic interval in the hanging wall of the Klakk Fault Complex. This syn-rift wedge was believed to be a slope apron fan system with the main sediment source coming from the eroded Triassic and Jurassic in the Frøya High.

Seismic Reprocessing

The prospect was mapped using the public 3D survey CN6306 which was shot in 1994 with 5 streamers of 3300m length each and processed in 1995. It has a moderate to poor quality with low dominant frequency of 25 Hz and 61 degrees average of phase rotation. The survey was then reprocessed in 1997 (CN6306R97). Comparison between the original and reprocessed survey shows that in the shallow part, the reprocessed data has higher frequency but the original survey has a sharper definition of the reflectors and less noise in the target interval between 2.5s to 3.5s. Since the 1997 reprocessed data was considered worse than the original, it was decided to reprocess survey CN6306 again to better define the Hagar prospect. The reprocessing started in 2011, finished in 2012 and was done by Fugro Seismic Imaging. The workflow used was PSTM Kirchhoff and the data was migrated in 2ms sample rate. The previous processing was using 4ms sample rate in the migration. The reprocessed CN6306R12 shows much better vertical resolution and more true amplitude than the original CN6306 as seen in Figure 3.1. The interpretation was finally done on the reprocessed survey which allowed a better definition of the Hagar prospect.

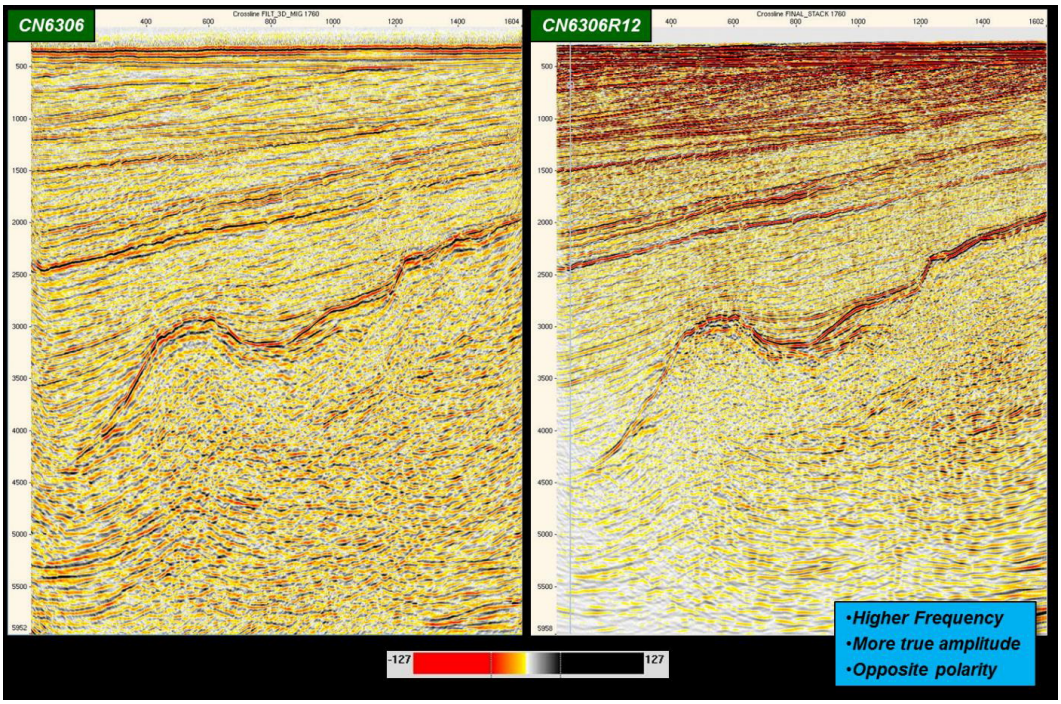

Figure 3.1 Comparison between survey CN6306 (original) and CN6306R12

Reservoir Quality Assessment

Rogn and Melke sandstones around PL642 showed a large variety of porosity and permeability values, thus exhibiting from very good to no reservoir quality. A study to assess reservoir quality was carried out internally in Repsol. Petrographic study of 32 core samples from Jurassic Rogn and Melke formations taken from wells 6406/12-1S and 6406/12-2 (phase I) and 6306/6-1, 6407/10-1 and 6306/10-1 (phase II) , as well as publications from fields within the "Brae trend" in UK all suggested that:

- Medium-grained, clean (i.e., matrix-free), sand-rich proximal facies of hanging wall fan systems exhibit the relatively best reservoir quality;
- Distal facies within hanging wall fan systems resulted in poor quality, tight reservoirs mostly due to the fine-grained, matrix-rich character of their sandstones;
- Coarse-grained, gravel-rich scarp-related (footwall) fans have very poor to no reservoir quality, whose main reservoir risk being associated to early pervasive carbonate cementation

Using Brae field as analogue the results of the study were combined with seismic stratigraphy to try to define where the best reservoir facies could be located within the Hagar wedge, Figure 3.2, and this was used as a basis to select the well location.

Basin Modelling

Due to a regional presence and excellent quality, the Spekk Formation was considered to have the best source potential in the study area. The Spekk Formation consists of marine shales with a Type II to Type II/III kerogen. TOC varies between 3% and 12% with a regional average of 6%. Average regional HI is 350 mg HC/g TOC indicating potential for oil generation with minor associated gas.

3D basin modelling showed that the Spekk Formation was mostly oil mature, Figure 3.3, within the Hagar prospect wedge. If the distal pinchout of this wedge is sufficient to prevent filling of the reservoir from the older gas charge originating in the Møre Basin, an in-situ charge into the Upper Jurassic reservoir from the surrounding Spekk and Melke source rocks was proposed. The timing of this latter oil charge was expected to begin during the Palaeocene and continue until the present day.

No oil shows were observed on cuttings and no increases above background level of gas were observed in Hagar well. This absence of charge was initially interpreted as hydrocarbons have not migrated into the reservoir. Therefore, the assumptions done for the basin modelling were wrong and the in-situ charge did not work. However, Fluid Inclusion study revealed that at least some amounts of hydrocarbons have migrated trough the reservoir but without accumulation.

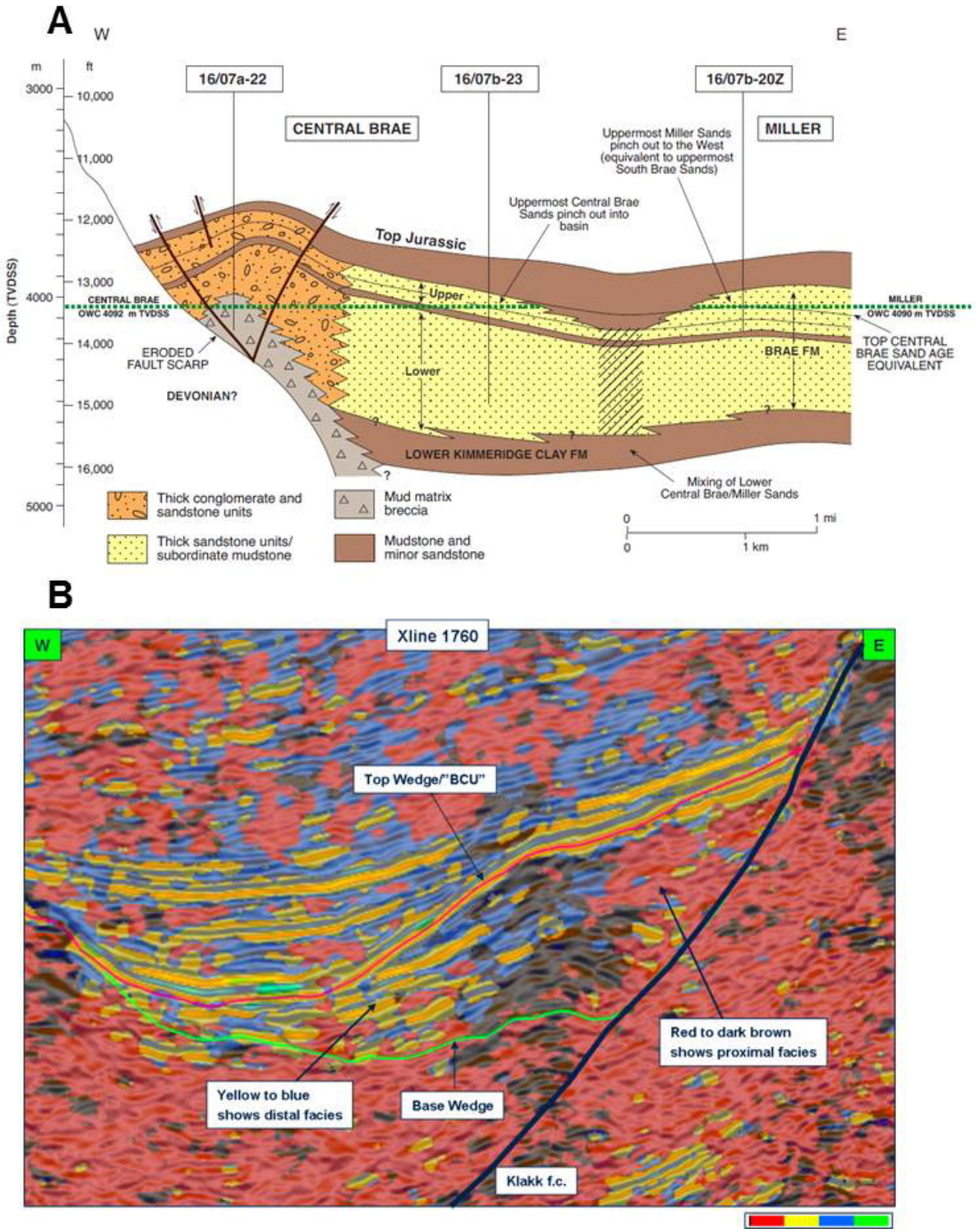

Figure 3.2 Reservoir quality assessment. *A) Structural cross section through Central Brae Field indicating facies relationships between non reservoir breccias, secondary reservoir conglomerates and main reservoir sandstones. This relationship provided the framework for the Hagar wedge analysis.*
B) Within the Hagar prospect, seismic stratigraphic imaging shows facies variations within the fan. The red proximal facies are believed to indicate a fault scarp apron consisting of non-reservoir mud supported breccia. The brown facies indicate secondary reservoir sand supported conglomerate facies, whilst the blue and yellow facies indicate basin floor fan sandstone deposits grading to fine sands and muds in more distal regions.

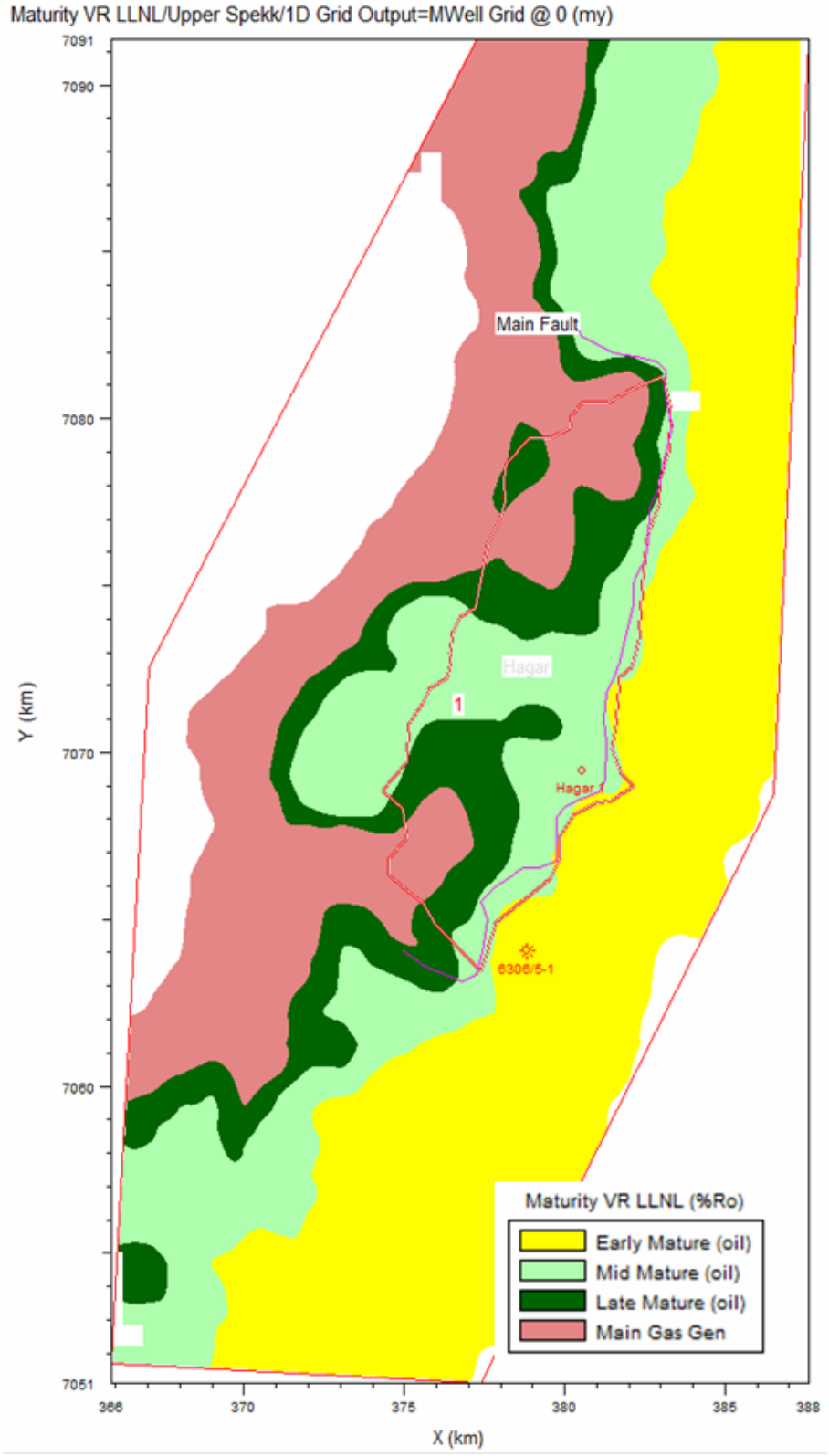

Figure 3.3 Maturity of Spekk Fm present day. *In line with the surrounding discoveries, hydrocarbon type is expected to be oil with a gas cap (Hagar prospect highlighted in red)*

4 Prospect Update

The license PL642 is located on the western flank of Frøya High, bounded by Klakk fault complex to the east and Vøring basin to the west. The prospectivity in the license consisted at the time of the application on the Hagar prospect and two leads, Honi and Hamlet. Figure 4.1 shows the original prospectivity of the license, summarized in Table 4.1.

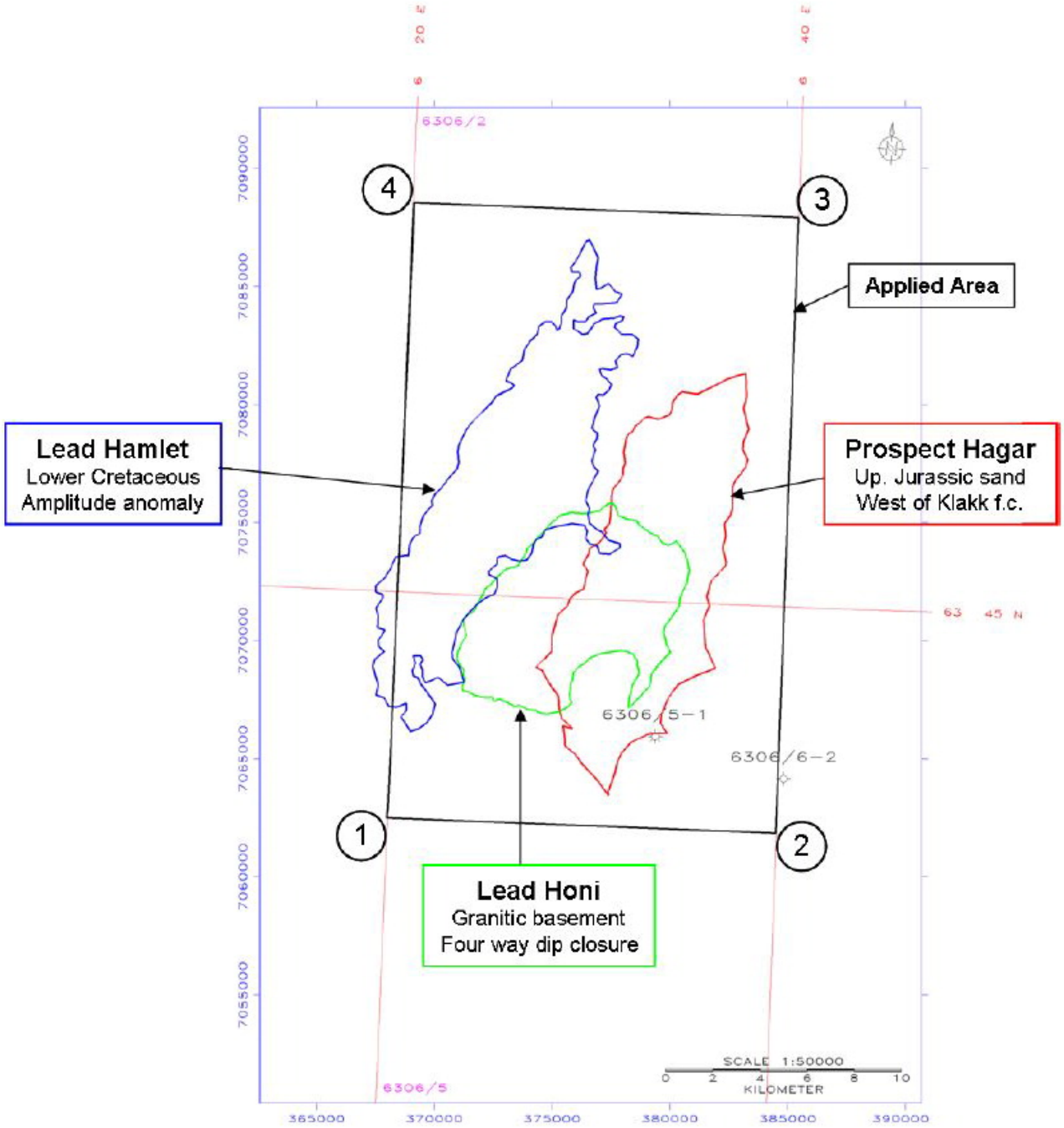

Figure 4.1 Identified prospects and leads in PL642

Table 4.1 Summary of Prospects and leads identified in PL642

Name	Prospect / Lead	Age of Reservoir	Reservoir Depth (m MSL)	Geological Chance of success (0.00-1.00)	Exp. Fluid	P90-Pmean-P10 Recoverable volumes Oil/Gas (10^6 Sm^3/10^9 Sm^3)
Hagar	Prospect	Upper Jurassic Sand	2500	0,22	Oil & Gas	5,00-46,00-117,00/1,00-10,00-31,00
Honi	Lead	Caledonide Basement	2750			
Hamlet	Lead	Lange Formation sand	3100			

The reprocessing of the CN6306 survey allowed a better interpretation of the Hagar prospect and the Honi lead, although no major differences appeared. However, not much improvement was achieved within the Cretaceous section. The quality of the seismic did not allow any de-risk of the Hamlet lead and therefore no further investigation was carried out.

The license agreed to drill the Hagar prospect with the support of all partners except Tullow Norge AS.

Hagar Prospect

The Hagar prospect is a 3 way dip closure of Upper Jurassic sediments juxtaposed against the impermeable granitoid basement of the Frøya High. The prospect represents a syn-rift clastic wedge similar to the Brae field which is located in the UK Northern Viking Graben.

The prospect (Figure 4.2 and Figure 4.3) was defined as a clastic wedge approximately 18km in length north to south and 5km wide east to west. Deposition occurred in an east to west direction and the wedge pinched out to the west and to the north. Reservoir lithology was, by analogy to the Brae field, expected to consist of a proximal deep marine, fault scarp apron breccias and conglomerates grading to distal deep marine, mid fan sandstones. Rogn and Melke formations were expected in the prospect as main reservoirs. On the eastern and the southern limits, the proximal edge of the wedge is juxtaposed against the footwall of the Klakk Fault Complex and the basement of the Frøya High. The prospect lies in 250m water depth and the crest of the wedge is at 2500mSS.

The Spekk and the Melke formations shales were expected to provide the seal for the prospect. The Upper Spekk Formation provides top seal whereas the Lower Spekk Formation and Melke Formation shales provide base seal. In the west and the north, where the clastic wedge pinches out, these units converge and provide lateral seal. With the absence of Lower Spekk or Melke Formation shales due to erosion or non-deposition, the crystalline basement is expected to act as a non-permeable barrier. If top seal has been eroded, the Lower Cretaceous Lyr and Lange formations are expected to be an effective top seal. Spekk Formation was considered as the main source rock and an in-situ charge was postulated as the most probable case for the Hagar prospect.

The prospect was located directly to the east of well 6306/5-1 T2. This well, drilled in 1997 and with TD in the Late Cretaceous Kvitnos Formation, did not target the Jurassic and was drilled updip of the Hagar prospect. It did encounter a mixture of thermogenic and biogenic dry gas in the Paleocene.

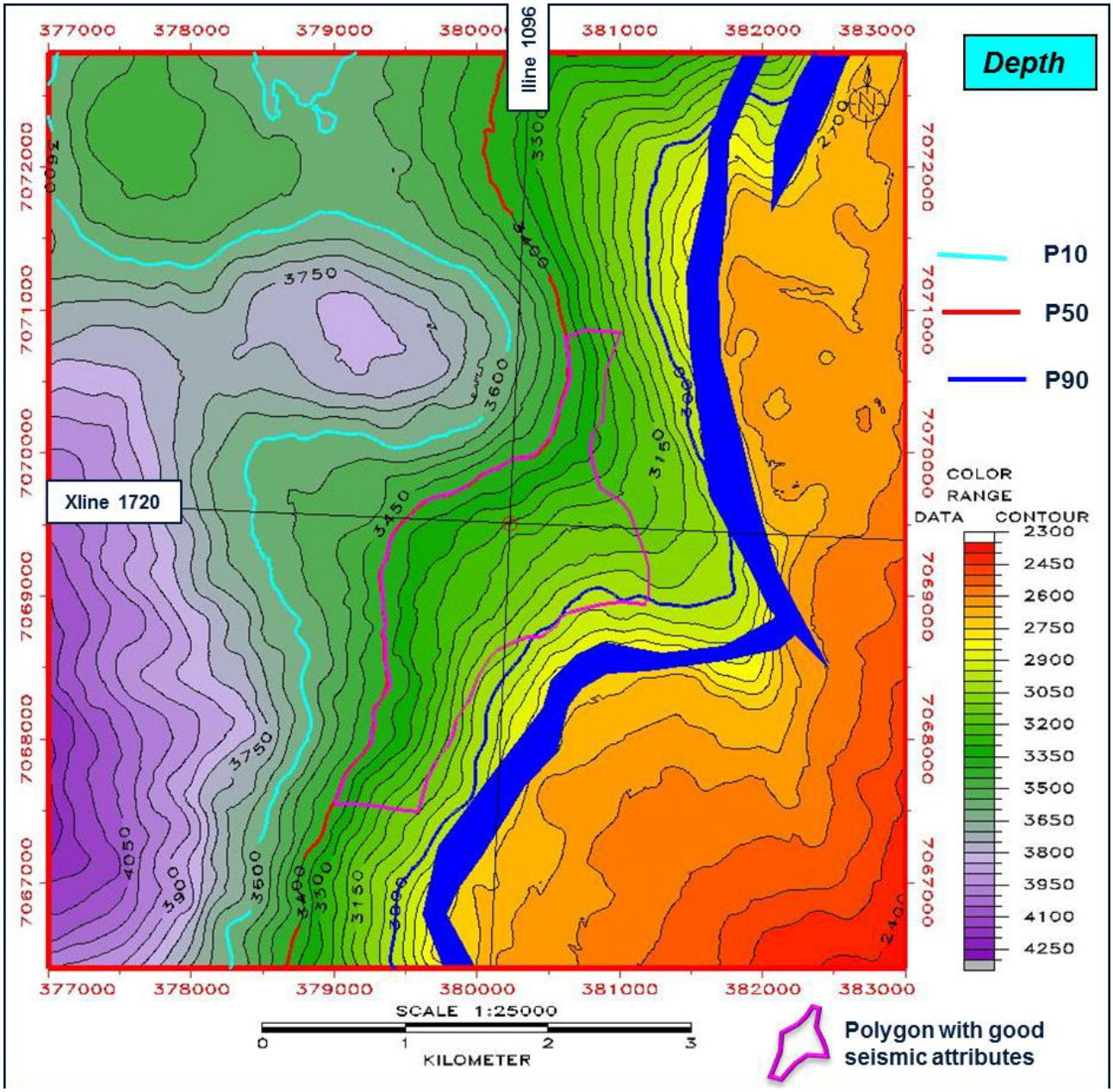

Figure 4.2 Top Jurassic depth map (C.I. = 50m)

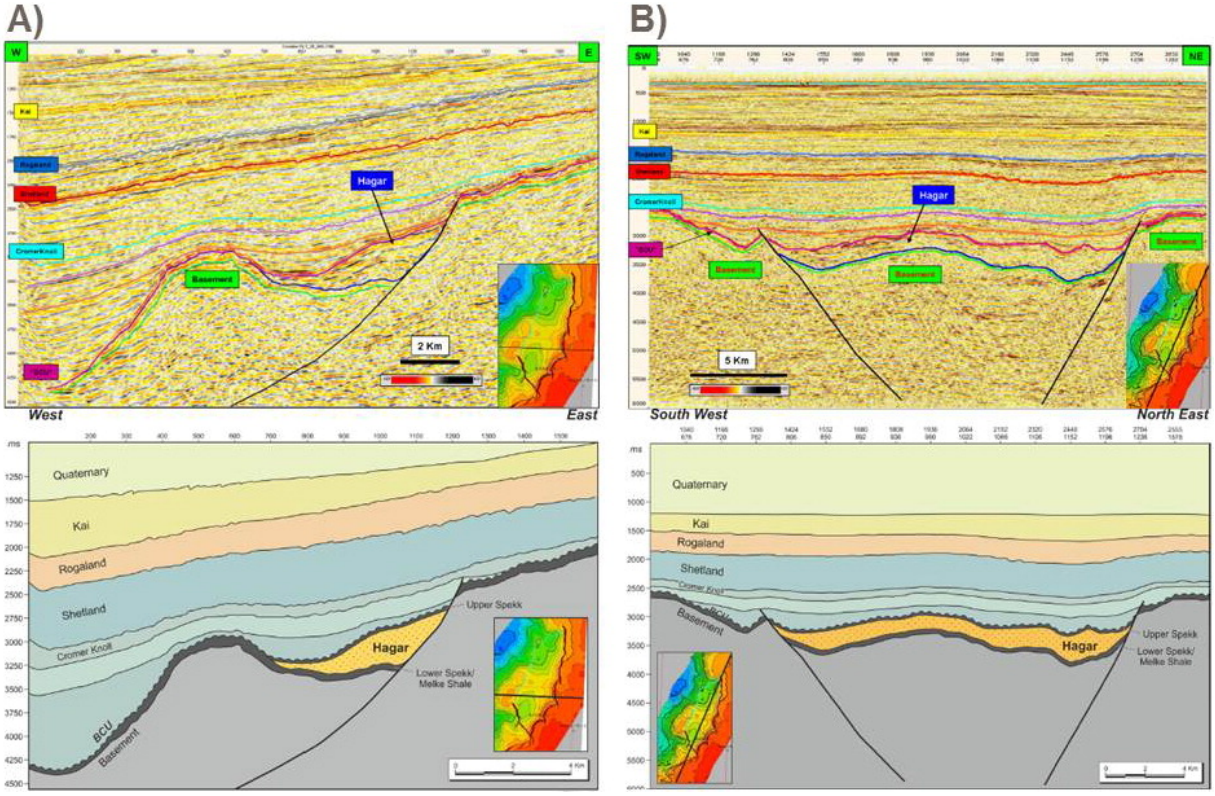

Figure 4.3 Seismic and geo cross-sections showing the Hagar prospect. *Dip line (A) and strike line (B) across the prospect*

6306/5-2 Hagar Exploration Well

The geological objective of the well was to evaluate, in terms of fluid and reservoir potential, the Jurassic Rogn and Melke formations, which are the reservoirs in the nearby Pil, Bue and Boomerang discoveries, and therefore to investigate the presence of oil in the Hagar prospect. The expected combined recoverable mean resources were estimated as 479 MMBOE, with a Pg of 22% and a Pe of 14%. The main risks were reservoir quality and performance, seal effectiveness and to some extent source quantity and volumes.

Well 6306/5-2 was drilled with a semisubmersible platform (Bredford-Dolphin) in a water depth of 226m. The well was spudded on 21.08.2015, reaching the revised TD of 3217mMD on 29.09.2015 within the Melke Formation. There were no major operational issues despite very low ROP's in lower 12 1/4"and 8 1/2" sections.

No hydrocarbon indications were observed and the reservoir was evaluated as water wet. The well was plugged and permanently abandoned as a dry well on 10.10.2015.

Main Results

The well encountered all the expected formations except the Spekk Formation. However, the top of the Jurassic was shallower than prognosed due to uncertainties in the pre-drill velocity model. Also, the Rogn Formation was thinner than expected (12m as opposed to 170m) due to uncertainties in the geological model. The combination of these issues caused the top of the Melke Formation to be 218m shallower than prognosed. The base of the Melke Formation sandstones was not penetrated so total thickness is unknown, Figure 4.4.

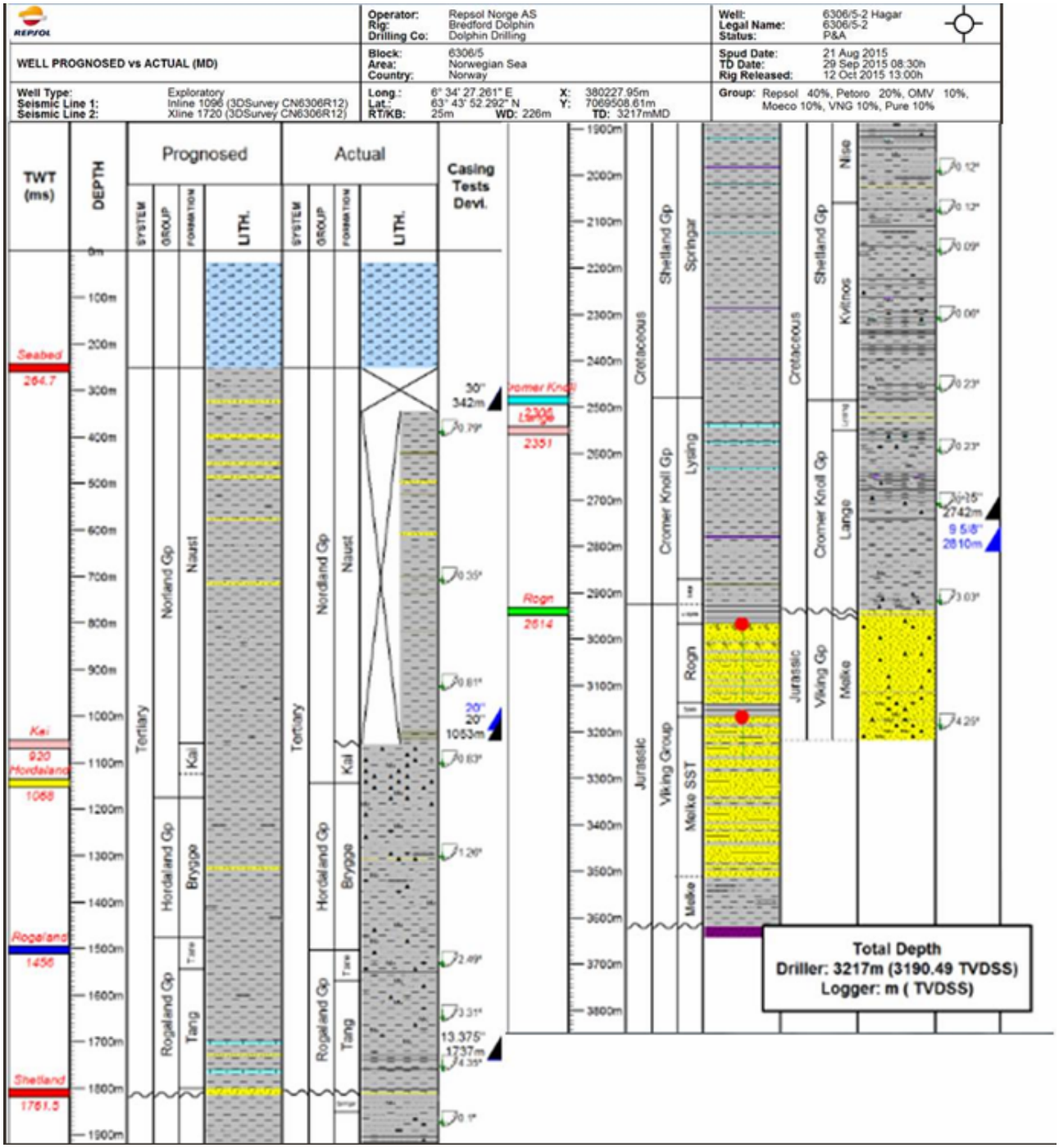

Figure 4.4 Prognosis versus Actual Formation tops

Due to the unknown pre drill internal architecture of the Hagar clastic wedge, the thickness of the Rogn Formation was estimated from offset wells, specifically 6406/12-2. A thickness of 170m was assumed. The presence of a Lower Spekk Formation shale of 30m was also assumed above the Melke Formation sandstones, also seen in 6406/12-2. Post drill, the Rogn Formation was much thinner than prognosed with only 12m (-158m thickness) and the Lower Spekk Formation was found to be absent with the Rogn Formation directly overlying the Melke Formation sandstones. This variation accounts for the top of the Melke Formation being -218m higher than prognosed. Extensive biostratigraphic work was carried out while and post drill in order to be able to characterize the Jurassic formations. RPS and APT were contracted for the biostratigraphic revision and both coincide in dating the shales above the Rogn Formation as Cretaceous in age, therefore confirming the absence of Spekk Formation.

Pre-drill studies prognosed a mean reservoir NTG of 60% and porosity of 22%. The petrographic study indicated moderate to poor reservoir qualities. The reservoir properties were moderate in the Rogn Formation, with NTG of 98% and average porosity of 15%. The Melke Formation had NTG of 80% and average porosity of 10%. Petrophysical results are shown in Figure 4.5. Calculated Timur permeability from NMR logs in Rogn Formation suggested an average of 50mD permeability and 4mD in the Melke Formation. MDT sampling in both Melke and Rogn formations indicated a vertically connected reservoir at normal hydrostatic pressure with a fluid gradient of 0.978g/cc or 0.4233psi/ft, suggesting low salinity water in line with that seen in the surrounding wells.

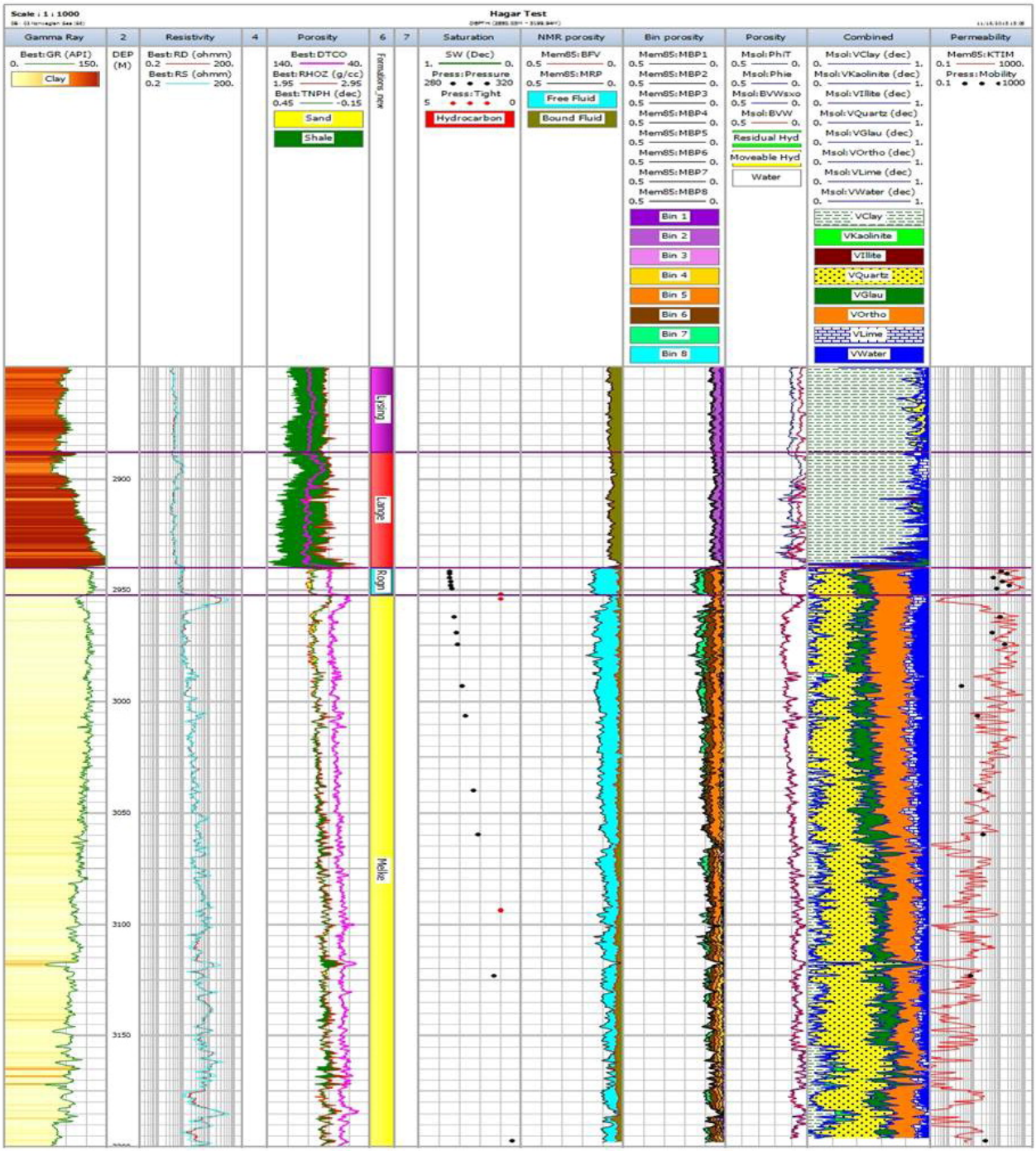

Figure 4.5 Petrophysical interpretation of the Reservoir section from the Hagar well.

The Melke Formation has been interpreted as amalgamated mass-flows, terminal alluvial fan deposits. The deposition was remarkably stable NE-SW. The different bedding styles observed, may have been originated from inter-fingering sheet flows and debris flows, which probably did not experience long transport distances. The depositional environment of the Rogn Formation seems similar to that of the Melke sandstones.

No oil shows were observed on cuttings an no increases above background level of gas were observed during the entire drilling operation. No hydrocarbons have been interpreted from wireline data. The well was therefore classified as dry.

The absence of Upper Spekk Formation at the well location does not completely rule out its presence within the wedge. However, post drill analysis indicates that due to heatflow being towards the lower end of the predicted range, Upper Spekk Formation might be slightly less mature than estimated and so, primary expulsion from the source would be less than expected. In addition, this might have led to insufficient lateral and downward migration into the underlying Rogn Formation reservoir. More importantly, the absence of an Intra-Spekk source rock and Lower Melke Formation shale (even though the latter cannot be concluded from the well logs) appeared to indicate that lack of available source is the key issue, and so the predicted charge was not present to migrate into the reservoirs above.

Post-drill fluid inclusion studies were carried out by FIT and reviewed internally by the Repsol expert. Both confirmed the presence of primary (trapped during crystal growth) and secondary (fracture healing) fluid inclusions. Hydrocarbons were as well observed as impregnations in mineral cleavage and oil cuttings. The interval from 2965m to 2985 m was the one containing the most abundant fluid inclusions, where microthermometry analysis was recommended to FIT. However, FIT did not encountered fluid inclusions with good quality and the microthermometry analysis was not done.

The amount of fluid inclusions was classified as rare by FIT while the inclusions were characterised from rare to several by the Repsol expert. Both studies supported that there were evidences that oil migration took place, as oil is proven to have at least passed through the reservoir, Figure 4.6.

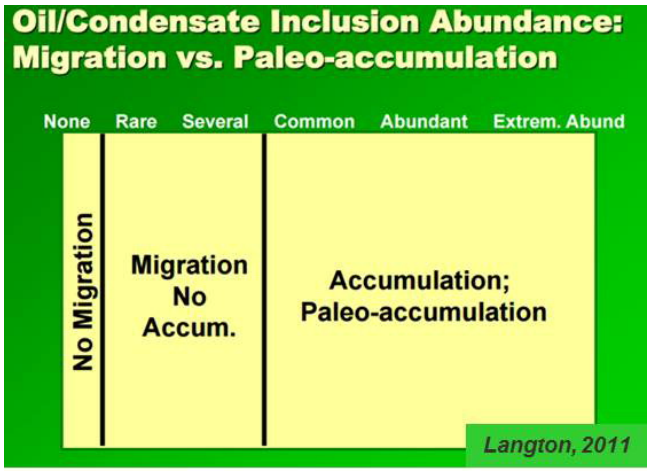

Figure 4.6 Abundance of Fluid inclusions. *Rare to Several presence of Fluid inclusions can correlate to a migration without accumulation.*

The hydrocarbon anomalies in the well may have two different explanations:

- Migration pathway (no accumulation = acted as carrier bed). This is the preferred option by Repsol due to the low to moderate response, and the presence of volatile organic compounds also known as BTEX (benzene, toluene, ethylbenzene, and xylene) that would suggest nearby charge, Figure 4.7.
- Paleocharge. To confirm that a paleocharge occurred, significant bitumen presence would need to be observed without accompanying water-soluble anomalies or independent evidences. Due to the absence of dead oil or any other indirect evidence Repsol is not in favour of this option.

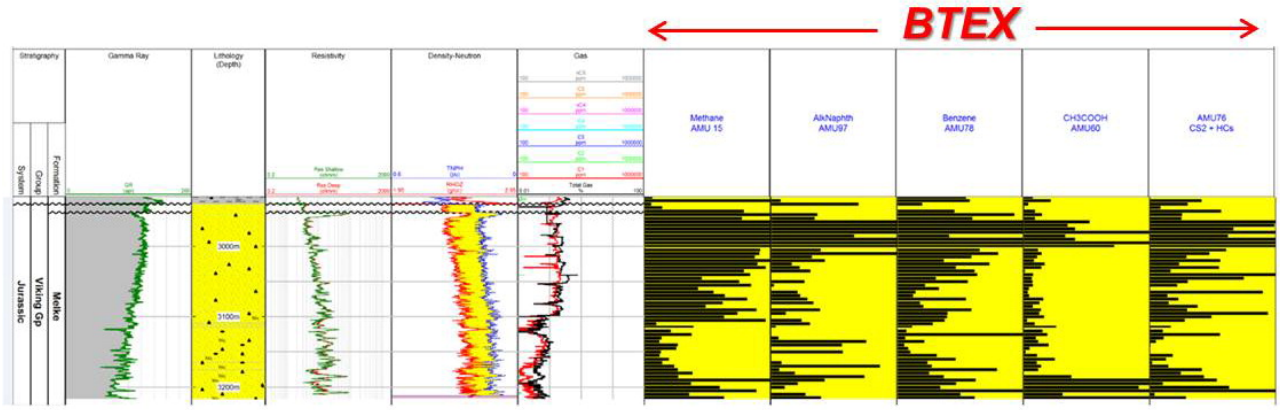

Figure 4.7 Volatile organic compounds encountered in Hagar. *BETEX are used to search for geochemical halos surrounding petroleum accumulations. BETEX anomaly would suggest a "nearby" charge.*

The result of this migration would indicate that at least small amounts of hydrocarbons were generated in the Hagar wedge. However, with the current data it is not possible to estimate which was the source rock that generated the hydrocarbons.

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5 Technical Evaluations

A full technical evaluation and economic analysis was carried out regarding a possible development in case of discovery for the Hagar prospect. The resource estimate for the prospect was done using the probabilistic resource estimation software from Rose & Associates. The petrophysical interpretation performed in-house provided the input for reservoir parameters. The hydrocarbon properties were extrapolated from the discoveries in the surroundings of PL642.

Production strategy was conceptually planned by horizontal drilling, gas cap expansion and supplementary peripheral water injection for pressure maintenance. Some flow assurance issues regarding fluid temperature and sea water treatment before injection were expected and remediation actions were foreseen in the design of facilities.

The multiphase production from wells was planned to be collected in a dedicated FPSO (Floating, Production, Storage and Offloading vessel) where produced fluids were going to be separated and treated. The oil would be stored in the FPSO and transported to market by ships. The produced water would be treated and conditioned for injection into the reservoir. The produced gas would be partially treated in the FPSO, and the rich gas will be transported in pipes to the Asgard Transportation System by a new dedicated line and then delivered to the Kårstø onshore plant. There, the rich gas will be processed and the dry gas will enter the continental market.

6 Conclusions

One prospect and two leads were identified in PL642 with reservoirs in the Caledonian basement, the Jurassic Rogn and Melke formations and Cretaceous Lange Formation. The technical work in the license was focus on the de-risking of the Hagar prospect. In December 2013 the partnership took the decision to enter in the next exploration phase with the commitment of the drilling of the 6306\5-2 Hagar exploration well. Oil and gas were the expected fluids in Hagar, with mean recoverable resources 46 10^6 Sm^3 Oil and 10 10^9 Sm^3 Gas. The geological chance of success for the Hagar prospect was 22%.

The economic evaluation performed by the operator resulted in Hagar having prospective volumes and a possible business case and therefore the decision to drill the prospect was proposed by Repsol Norge As to the rest of the partnership and supported by partners, with exception of Tullow Norge AS.

Hagar exploration well turned out to be dry with no hydrocarbon recorded at reservoir section.

The remaining prospectivity of the license did not support further investments in the license. Therefore, the operator proposed the relinquishment of the license with unanimous support of partners.