General information

Wellbore name	2/5-14 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	2/5-14
Seismic location	inline 6409 & crossline 17202 (3DNQ8)
Production licence	006 C
Drilling operator	Lundin Norway AS
Drill permit	1206-L
Drilling facility	MÆRSK GALLANT
Drilling days	104
Entered date	30.12.2008
Completed date	12.04.2009
Release date	12.04.2011
Publication date	12.04.2011
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	43.0
Water depth [m]	67.0
Total depth (MD) [m RKB]	3845.0
Final vertical depth (TVD) [m RKB]	3507.0
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	TOR FM
Geodetic datum	ED50
NS degrees	56° 36' 25.78'' N
EW degrees	3° 26' 2.53'' E
NS UTM [m]	6273882.33
EW UTM [m]	526645.18
UTM zone	31
NPDID wellbore	5958

Wellbore history

General

Well 2/5-14 S was drilled on the Hyme prospect on the west flank of the South-East Tor oil discovery in the southern North Sea. The objectives were to prove commercial amounts of oil in a stratigraphic trap in the Tor and Ekofisk Formations, and to improve the understanding of chalk porosity and fluid properties related to seismic signature. If a discovery was made an appraisal sidetrack well, 2/5-14 A, was planned to kick off from below the 13 3/8" casing shoe. Following the results of the 2/5-14 S well, the sidetrack was not drilled.

Operations and results

Wildcat well 2/5-14 S was spudded with the jack-up installation Mærsk Gallant on 30 December 2008 and drilled to TD at 3845 m (3507.4 m TVD) in the Late Cretaceous Tor Formation. The well was drilled deviated, kicking off from approximately 1200 m. No shallow gas or shallow water flow zones were prognosed and no shallow gas or water flow zones were encountered. Very low penetration rates were experienced in mudstones of the Hordaland and Rogaland Formations. While running the 9 5/8" casing, returns were lost after working the casing through a tight interval from 3025 m to 3042 m. It is believed that the lost mud was forced into a fracture in the formation that remained open and in communication with the well throughout the 8 1/2" section. The well was drilled with seawater and hi-vis pills down to 579 m, with GEM KCl/polymer mud from 579 m to 1560 m, and with Performadril/KCl mud enhanced with 3 - 6% glycol from 1560 m to TD.

The Hordaland Group was encountered at 1739 m (1736.2 m TVD), 53 m TVD deeper than prognosed. The Rogaland Group was encountered at 3338 m (3069.9 m TVD), 5 m TVD shallow to prognosis. Above the main Shetland Group target, three thin Paleocene sandstones were encountered; two Heimdal equivalent sandstones (intra Lista Formation) at 3438 to 3439 m and at 3485 to 3488 m and the Borr Sandstone (intra Våle Formation) at 3540 to 3546 m. The two uppermost sandstones were hydrocarbon bearing, based on the LWD log data and gas readings. The fluid was probably oil although no oil shows were observed in the samples. The lowermost sandstone (Borr Member) was clearly water wet although with oil shows in the cuttings and gas readings.

The Shetland Group was encountered at 3551 m (3251.2 m TVD), 18 m TVD deeper than prognosed. The main reservoir within the Hyme Prospect, the Tor Formation, was penetrated at 3681 m (3364.8 m TVD), 18 m TVD deep to prognosis. The reservoir quality, however, was poorer than prognosed and no movable oil was found to exist within the chalk matrix. Some potential oil shows were found in fractures at 3775 m (3446.6 m TVD) and were interpreted to be related to either migrating oil in the open fractures or to asphaltic fracture fill. No conventional or sidewall cores were cut in the well. No wire line logs were run and thus no wire line samples were taken in the well due to unstable well conditions (mud gains and losses).

The well was permanently abandoned on 12 April 2009 as a well with shows.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
190.00	3845.00

Cuttings available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
110	NORDLAND GP
1739	HORDALAND GP
3338	ROGALAND GP
3338	BALDER FM
3359	SELE FM
3415	LISTA FM
3528	VÅLE FM
3551	SHETLAND GP
3551	EKOFISK FM
3681	TOR FM

Geochemical information

Document name	Document format	Document size [MB]
5958_01_2_5_14_gch_transfer_1	txt	0.00
5958_01_2_5_14_gch_transfer_2	txt	0.00
5958_02_2_5_14_gch_results_1	txt	0.13
5958_02_2_5_14_gch_results_2	txt	0.04

Logs

Log type	Log top depth [m]	Log bottom depth [m]
LWD - DIR	110	579
LWD - GR RES DEN NEU SON PWD DIR	1560	2706
LWD - GR RES DEN NEU SON PWD DIR	3398	3845

LWD - GR RES PWD DIR	189	1560
LWD - GR RES SON PWD DIR	2706	3398

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	184.0	36	189.0	0.00	LOT
SURF.COND.	20	571.0	26	579.0	1.45	LOT
INTERM.	13 3/8	1551.0	17 1/2	1560.0	2.00	LOT
INTERM.	9 5/8	3391.0	12 1/4	3398.0	1.65	FIT
OPEN HOLE		3845.0	8 1/2	3845.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
147	1.03			Water	
189	1.05			Water	
189	1.25			Water	
189	1.04			Water	
191	1.25			Water	
414	1.35			Water	
579	1.13			Water	
1560	1.35			Water	
1560	1.35			Water	
2706	1.70			Water	
2898	1.70			Water	
3243	1.70			Water	
3398	1.70			Water	
3401	1.57			Water	
3657	1.57			Water	
3845	1.62			Water	