General information

Wellbore name	35/9-7
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Field	NOVA
Discovery	35/9-7 Nova
Well name	35/9-7
Seismic location	MC3D-MARFLO-2007-inline3418 & xline8245
Production licence	418
Drilling operator	Wintershall Norge ASA
Drill permit	1394-L
Drilling facility	SONGA DELTA
Drilling days	47
Entered date	28.02.2012
Completed date	14.04.2012
Release date	14.04.2014
Publication date	14.04.2014
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA HEATHER FM SS
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	INTRA HEATHER FM SS
Kelly bushing elevation [m]	29.0
Water depth [m]	368.0
Total depth (MD) [m RKB]	3006.0
Final vertical depth (TVD) [m RKB]	3005.0
Maximum inclination [°]	5
Bottom hole temperature [°C]	108
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	RANNOCH FM
Geodetic datum	ED50

NS degrees	61° 16' 6.83'' N
EW degrees	3° 40' 23.28'' E
NS UTM [m]	6793049.40
EW UTM [m]	536100.57
UTM zone	31
NPDID wellbore	6776

Wellbore history

General

Well 35/9-7 was drilled on the Skarfjell prospect on the Ryggsteinen Ridge, about 17 kilometres southwest of the Gjøa field in the North Sea. The purpose of the well was to prove petroleum in Late Jurassic reservoir rock.

Operations and results

Wildcat well 35/9-7was spudded with the semi-submersible installation Songa Delta on 28 February 2012 and drilled to TD at 3006 m in the Middle Jurassic Rannoch Formation. No significant problem was encountered in the operations. The well was drilled with spud mud down to 600 m and with Aquadril mud from 600 m to TD.

Two Intra Heather Formation Sandstones were penetrated: an Oxfordian age sandstone at 2621 m to 2690 m (Intra Heather Sandstone 2) and a Bathonian-Callovian age sandstone at 2776 m to 2790 m (Intra Heather Sandstone 1). The total net reservoir in the two sandstone intervals is 54.2 m. Both reservoirs were filled with light oil in oil down-to settings. The densities of the oils are slightly different but the two columns fall on a common pressure gradient within one bar discrepancy. The overpressure at top reservoir is 16.7 bar. The Sandstones in the Brent Group were found water bearing with a hydrostatic pressure gradient.

Three cores were cut from core point 2628 m in the Intra Heather Sandstone 2 to 2706 m the underlying Heather Formation shales. The Intra Heather Sandstone 1 was not cored. Twelve single phase samples were acquired. Seven oil samples were collected from the Intra Heather Sandstone 2, at depths 2626.2 m, 2635.2 m, 2664.1 m, and 2687.7 m; four oil samples were collected from the Intra Heather Sandstone 1 at depths 2776.7 m and 2783.7 m; and one water sample was collected from the Etive Formation at 2968.4 m.

The well was permanently abandoned on 14 April 2012 as an oil discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
610.00	3006.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2628.0	2655.2	[m]
2	2655.2	2681.5	[m]
3	2681.5	2705.2	[m]

Total core sample length [m]	77.2
Cores available for sampling?	YES

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
MDT		2776.70	0.00	OIL	30.03.2012 - 00:00	NO
MDT		0.00	2635.20	OIL	30.03.2012 - 00:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
397	NORDLAND GP
643	UTSIRA FM
706	HORDALAND GP
706	UNDIFFERENTIATED
1007	UNDIFFERENTIATED
1081	GRID FM
1108	FRIGG FM
1247	UNDIFFERENTIATED
1288	ROGALAND GP
1288	BALDER FM
1337	SELE FM
1364	LISTA FM
1737	VÅLE FM
1760	EGGA FM (INFORMAL)
1767	SHETLAND GP

1767	JORSALFARE FM
1895	KYRRE FM
2482	TRYGGVASON FM
2540	BLODØKS FM
2584	CROMER KNOLL GP
2584	RØDBY FM
2594	VIKING GP
2594	DRAUPNE FM
2610	HEATHER FM
2621	INTRA HEATHER FM SS
2690	HEATHER FM
2776	INTRA HEATHER FM SS
2790	HEATHER FM
2911	BRENT GP
2911	TARBERT FM
2922	NESS FM
2953	ETIVE FM
2974	RANNOCH FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
GR PCOR	2597	2909
GR VSP	1850	2975
LWD - CB	2628	2706
LWD - DIR PWD	397	600
LWD - GR RES PWD DIR	397	600
LWD - GR RES PWD DIR SON	600	1358
LWD - GR RES PWD DIR SON DEN NEU	1358	2450
LWD - NBRES GR RES PWD DIR	2454	2628
LWD - NBRES GR RES PWD DIR	2706	3006
MLL PTEX XMAC ORIT CDL CN DSL TT	200	3005
RCI IFX 6TC GR TTRM	2623	2970
STAR ORIT DSL TTRM	2610	3005
XMAC MREX GR TTRM	2610	3005

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	452.2	36	457.0	0.00	
SURF.COND.	20	597.0	26	600.0	1.61	LOT
PILOT HOLE		600.0	9 7/8	600.0	0.00	
INTERM.	13 3/8	1351.0	17 1/2	1358.0	1.65	FIT
INTERM.	9 5/8	2445.0	12 1/4	2450.0	1.59	LOT
OPEN HOLE		3006.0	8 1/2	3006.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
420	1.49			Spud Mud	
597	1.18	18.0		Aquadrill Mud	
600	1.49			Kill Mud	
600	1.49			Spud Mud	
839	1.22	16.0		Aquadrill Mud	
1358	1.31	19.0		Aquadrill Mud	
2435	1.31	18.0		Aquadrill Mud	
2450	1.31	22.0		Aquadrill Mud	
2693	1.32	22.0		Aquadrill Mud	
3006	1.31	21.0		Aquadrill	