

**General information**

Wellbore name	10/4-1
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	10/4-1
Seismic location	EGB 2013 R PSDM Depth Full 4-32. x 111162 & inline 13647
Production licence	734
Drilling operator	Wintershall Norge AS
Drill permit	1584-L
Drilling facility	BORGLAND DOLPHIN
Drilling days	22
Entered date	20.06.2015
Completed date	12.07.2015
Release date	12.07.2017
Publication date	12.07.2017
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	31.0
Water depth [m]	98.0
Total depth (MD) [m RKB]	2415.0
Final vertical depth (TVD) [m RKB]	2415.0
Maximum inclination [°]	1.7
Oldest penetrated age	PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	57° 40' 30.04" N
EW degrees	5° 9' 18.81" E
NS UTM [m]	6394716.97
EW UTM [m]	628539.16
UTM zone	31
NPDID wellbore	7724



Wellbore history

General

Well 10/4.-1 was drilled to test the Zeppelin prospect ca 35 km southeast of the Yme Field in the North Sea. The primary objective was to evaluate the presence of hydrocarbons in sandstones of the Jurassic Sandnes and Bryne formations. Secondary target were the Zechstein Group limestones of Late Permian age.

Operations and results

Wildcat well 10/4-1 was spudded with the semi-submersible installation Borgland Dolphin on 20 June 2015 and drilled to TD at 2415 m in the Permian Zechstein Group. No significant problem was encountered in the operations. The well was drilled with seawater and hi-vis pills down to 640 m and with Innovert oil based mud from 640 m to TD.

Top Sandnes Formation was encountered at 2274 m and top Bryne Formation at 2311 m.

Both formation had sandstones with very good reservoir quality. The Sandnes reservoir has an average porosity of 21.5 %, and the Bryne Formation 17.4 %, using a cut off value of 10%. The gross thickness for the Sandnes Formation is 21 m with a net thickness of 19.15 m. The well encountered the Bryne reservoir with a gross thickness of 53 m and net thickness of 38.75 m. The water saturation is 100 % in both encountered reservoirs. The expected Permian age limestone reservoir was not present at this well location. All reservoirs were water-wet. The well also encountered sandstone of undifferentiated Triassic age with good quality. The sandstone of 16 m gross and 15.95 m net thickness had an average porosity of 23.7 %. It is water-wet. No shows were observed in the well

No cores were cut. No fluid sample was taken.

The well was permanently abandoned on 12 July 2015 as a dry well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
650.00	2415.00

Cuttings available for sampling?	YES
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Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
129	NORDLAND GP



229	HORDALAND GP
490	ROGALAND GP
490	BALDER FM
523	SELE FM
549	LISTA FM
585	VÅLE FM
590	SHETLAND GP
590	EKOFISK FM
648	TOR FM
932	HOD FM
1382	CROMER KNOLL GP
1382	RØDBY FM
1413	SOLA FM
1429	ÅSGARD FM
1842	BOKNEFJORD GP
1842	FLEKKEFJORD FM
1937	SAUDA FM
2215	TAU FM
2245	EGERSUND FM
2274	VESTLAND GP
2274	SANDNES FM
2311	BRYNE FM
2348	UNDEFINED GP
2364	ZECHSTEIN GP

Logs

Log type	Log top depth [m]	Log bottom depth [m]
MED - GR RES SON PWD DIR	202	606
MWD - DIR	129	202
MWD - GR RES PWD DIR	202	640
MWD - GR RES SON PWD DIR	640	2004
VSP	188	2400

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	195.4	36	202.0	0.00	



PILOT HOLE		606.0	9 7/8	606.0	0.00	
INTERM.	13 3/8	630.8	17 1/2	640.0	0.00	
		643.0		643.0	1.52	FIT
INTERM.	9 5/8	1991.1	12 1/4	2004.0	0.00	
		2007.0		2007.0	1.93	LOT
OPEN HOLE		2415.0	8 1/2	2415.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
129	1.02	10.0		Hi Vis Sweeps	
202	1.49	17.0		Displacement Mud	
202	1.02			Hi Vis Sweeps	
640	1.02			Sea Water	
640	1.34	15.0		Displacement Mud	
1025	1.24	12.0		Innovert	
1198	1.24	17.0		Innovert	
1822	1.31	18.0		Innovert	
2380	1.31	22.0		Innovert	
2415	1.31	19.0		Innovert	