General information

Wellbore name	6407/1-7
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Discovery	6407/1-7 (Solberg)
Well name	6407/1-7
Seismic location	ST0614WIR10 inline 8016 Xline 3002
Production licence	475
Drilling operator	Wintershall Norge AS
Drill permit	1507-L
Drilling facility	BORGLAND DOLPHIN
Drilling days	50
Entered date	01.02.2014
Completed date	22.03.2014
Release date	22.03.2016
Publication date	12.04.2016
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	YES
1st level with HC, age	LATE CRETACEOUS
1st level with HC, formation	LANGE FM
Kelly bushing elevation [m]	31.0
Water depth [m]	281.0
Total depth (MD) [m RKB]	3376.0
Final vertical depth (TVD) [m RKB]	3376.0
Maximum inclination [°]	1.2
Oldest penetrated age	EARLY CRETACEOUS
Oldest penetrated formation	LANGE FM
Geodetic datum	ED50
NS degrees	64° 57' 44.68'' N
EW degrees	7° 14' 6.28'' E
NS UTM [m]	7205608.56
EW UTM [m]	416659.43
UTM zone	32
NPDID wellbore	7412

Wellbore history

General

Well 6407/1-7 was drilled to test the Solberg prospect in the southern part of the Grinda Graben in the Norwegian Sea. The Solberg prospect was seen as a possible continuation of the 6407/1-6 S Rodrigues Lange discovery to the East. The main objective of the 6407/1-7 Solberg well was to appraise and evaluate the continuation and reservoir properties of the hydrocarbon-filled Intra Lange Sandstones, as penetrated by 6407/1-6 S Rodriguez well, which is located ca 5 km to the west.

Operations and results

Well 6407/1-7 was spudded with the semi-submersible installation Borgland Dolphin on 1 February 2014 and drilled to TD at 3376 m in the Early Cretaceous Lange Formation. No significant problem was encountered in the operations. The well was drilled with seawater and sweeps down to 510 m, with Aquadrill mud from 510 m to 1689 m, with Carbosea oil based mud from 1689 m to 2922 m, and with Aquadrill mud from 2922 m to TD.

Well 6407/1-7 discovered gas-condensate in Lange Formation sandstones at 3221 to 3239 m. The reservoir had an average porosity of 16 % using a cut-off of 8%. The gross thickness is 18 m with a net thickness of 12 m and average water saturation of 21%. The gas-water contact is not penetrated by the well.

One core was cut in the interval 3226 to 3236 m with 85% recovery. RCX fluid samples were taken at 3225.1 m (gas/condensate) and 3230.3 m (gas/condensate).

The well was plugged back for sidetracking on 22 March 2014. It is classified as a gas/condensate discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
520.00	3375.00

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	3226.1	3234.6	[m]

Total core sample length [m]	8.5

Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
312	NORDLAND GP
541	NAUST FM
1414	KAI FM
1825	HORDALAND GP
1825	BRYGGE FM
2125	ROGALAND GP
2125	TARE FM
2212	TANG FM
2270	SHETLAND GP
2270	SPRINGAR FM
2424	NISE FM
2661	KVITNOS FM
2974	CROMER KNOLL GP
2974	LYSING FM
2997	LANGE FM
3221	NO FORMAL NAME
3239	LANGE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
DSL CN ZDL ORIT XMAC RTEX DMLL	2912	3376
DSL STAR ORIT UXPL	3200	3250
LWD - DIR	312	510
LWD - GR DIR RES SON	3237	3376
LWD - GR RES DIR	390	510
LWD - GR RES DIR SON	510	2922
LWD - GR RES DIR SON	2922	3226
MREX FLEX	3200	3250
RCX	3215	3227
SWC	3221	3224
VSP	1642	3376

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	391.0	36	391.0	0.00	
SURF.COND.	20	501.0	26	510.0	1.32	LOT
PILOT HOLE		510.0	9 7/8	510.0	0.00	
INTERM.	13 3/8	1679.0	17 1/2	1689.0	1.77	LOT
INTERM.	9 5/8	2912.0	12 1/4	2922.0	2.03	LOT
OPEN HOLE		3376.0	8 1/2	3376.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
338	1.34	25.0		Displacement Fluid	
394	1.34	21.0		Displacement Fluid	
394	1.49	42.0		Kill Mud	
394	1.49	42.0		Kill Mud	
510	1.34	21.0		Displacement Fluid	
510	1.16	11.0		Aqua-drill WBM	
767	1.24	12.0		Aqua-drill WBM	
1689	1.31	14.0		Aqua-drill WBM	
1946	1.66	42.0		Carbo SEA OBM	
2535	1.67	48.0		Carbosea OBM	
2616	1.67	25.0		AquaDrill	
2922	1.66	44.0		Carbo SEA OBM	
3113	1.63	27.0		AquaDrill	
3219	1.63	29.0		AquaDrill	
3226	1.67	29.0		AquaDrill	
3376	1.67	24.0		AquaDrill	