

**General information**



Wellbore name	6407/1-6 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	<a href="#">link to press release</a>
Factmaps in new window	<a href="#">link to map</a>
Main area	NORWEGIAN SEA
Discovery	<a href="#">6407/1-6 S</a>
Well name	6407/1-6
Seismic location	ST0614WIR10 inline 7685-xline 2781
Production licence	<a href="#">475</a>
Drilling operator	Wintershall Norge AS
Drill permit	1420-L
Drilling facility	<a href="#">TRANSOCEAN ARCTIC</a>
Drilling days	48
Entered date	07.12.2012
Completed date	24.01.2013
Release date	24.01.2015
Publication date	13.04.2015
Purpose - planned	WILDCAT
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]	24.0
Water depth [m]	291.0
Total depth (MD) [m RKB]	4250.0
Final vertical depth (TVD) [m RKB]	4075.0
Maximum inclination [°]	38.7
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ROR FM
Geodetic datum	ED50
NS degrees	64° 56' 25.66" N
EW degrees	7° 8' 36.8" E
NS UTM [m]	7203286.76
EW UTM [m]	412266.84
UTM zone	32
NPDID wellbore	7086

## Wellbore history

### General

Well 6407/1-6S was drilled on the Rodriguez prospect on the Halten Terrace in the Norwegian Sea. The primary objective was to test the Garn Formation with upside potential in the Ile Formation. Secondary objective was to test high amplitudes observed in the Lange Formation and to improve the regional understanding of the Cretaceous play.

### Operations and results

Wildcat well 6407/6-1 S was spudded with the semi-submersible installation Transocean Arctic on 7 December 2012 and drilled to TD at 4250 m (4075 m TVD). A 12 1/4" pilot hole was drilled from 393 m to 1003 m without any indication of shallow gas. The well was drilled with an S-shaped path that is vertical down to 2330 m, deviated from there to ca 3830 m and vertical again to TD. No significant problem was encountered in the operations. The well was drilled with spud mud down to 396 m, with KCl mud from 396 m to 1003 m, with Performadril mud from 1003 m to 3091 m, and with oil based XP-07 mud from 3091 m to TD.

Gas/condensate was encountered in several overpressured intra Lange sandstones in the interval 3460 m to 3530 m. No water contact was found. The sandstones had an average porosity of 18% using a porosity cut-off of 8%. The reservoir has a net to gross of 0.171 and an average  $S_w$  of 0.276. The Middle Jurassic Garn Formation and Ile Formation were dry with no shows and gas readings of approximately 0.4%. The Garn Formation was 119 m thick, 29 m thicker than prognosed.

No cores were cut in the well. The RCX tool was run for pressure and fluid samples. In the Intra Lange Sandstones, the pressure was 511 bar and two fluid samples were taken at 3463.65 m and 3461.5 m. The samples showed gas-condensate with a GCR of 1852-2188 Sm<sub>3</sub>/Sm<sub>3</sub> and 1.5% CO<sub>2</sub>. Pressure measurements in the Garn Formation proved a water gradient close to hydrostatic pressure. The maximum temperature at well TD was 150 °C, measured on wireline 23 hrs after last circulation.

The well was permanently abandoned on 24 January 2013 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]
1000.00	4250.00
Cuttings available for sampling?	YES

## Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
315	<a href="#">NORDLAND GP</a>
315	<a href="#">NAUST FM</a>
1427	<a href="#">KAI FM</a>
1858	<a href="#">HORDALAND GP</a>
1858	<a href="#">BRYGGE FM</a>
2147	<a href="#">ROGALAND GP</a>
2147	<a href="#">TARE FM</a>
2227	<a href="#">TANG FM</a>
2288	<a href="#">SHETLAND GP</a>
2288	<a href="#">SPRINGAR FM</a>
2440	<a href="#">NISE FM</a>
2568	<a href="#">KVITNOS FM</a>
3099	<a href="#">CROMER KNOLL GP</a>
3099	<a href="#">LYSING FM</a>
3141	<a href="#">LANGE FM</a>
3460	<a href="#">NO FORMAL NAME</a>
3565	<a href="#">LANGE FM</a>
3717	<a href="#">VIKING GP</a>
3717	<a href="#">SPEKK FM</a>
3792	<a href="#">MELKE FM</a>
3914	<a href="#">FANGST GP</a>
3914	<a href="#">GARN FM</a>
4032	<a href="#">NOT FM</a>
4077	<a href="#">ILE FM</a>
4195	<a href="#">BÅT GP</a>
4195	<a href="#">ROR FM</a>

## Logs

Log type	Log top depth [m]	Log bottom depth [m]
MWD - DIR	315	396
MWD - DIR	396	998
MWD - DIR GR RES DEN NEU PWD	396	1003
MWD - DIR GR RES DEN NEU SON PWG	1985	4250
MWD - DIR GR RES SON	998	1985
RCI	3100	3523
RCI	3921	4085

VSP		1701	4236
XMAX SON CBL		1950	4240

**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	395.0	36	398.0	0.00	
SURF.COND.	20	556.0	26	562.0	1.82	
PILOT HOLE		703.0	12 1/4	703.0	0.00	
LINER	16	1164.0	17 1/2	1199.0	1.90	
INTERM.	13 3/8	1976.0	14 3/4	2015.0	0.00	
INTERM.	9 5/8	3766.0	12 1/4	3773.0	1.61	
LINER	7	4175.0	8 1/2	4177.0	0.00	

**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
315	1.04	20.0		Spud mud	
396	1.59	20.0		Displacement mud.	
412	1.32	20.0		KCL MUD	
824	1.48	28.0		PERFORMADRIL	
1003	1.33	23.0		PERFORMADRIL	
1003	1.29	23.0		PERFORMADRIL	
1268	1.42	31.0		PERFORMADRIL	
1919	1.53	40.0		PERFORMADRIL	
1985	1.55	35.0		PERFORMADRIL	
3091	1.69	37.0		XP-07 Yellow	
3834	1.70	35.0		XP/07 Yellow	
3924	1.19	17.0		XP/07 Yellow	
4250	1.20	18.0		XP-07 Yellow	

**Pressure plots**

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.



Document name	Document format	Document size [MB]
<a href="#">7086 Formation pressure (Formasjonstrykk)</a>	pdf	0.23

