

**General information**

Wellbore name	6406/12-3 B
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	FENJA
Discovery	6406/12-3 S Fenja
Well name	6406/12-3
Seismic location	Seismic data set MC3D-HT2007-08
Production licence	586
Drilling operator	VNG Norge AS
Drill permit	1520-L
Drilling facility	TRANSOCEAN ARCTIC
Drilling days	40
Entered date	02.05.2014
Completed date	11.06.2014
Release date	11.06.2016
Publication date	11.06.2016
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA MELKE FM SS
Kelly bushing elevation [m]	24.0
Water depth [m]	324.0
Total depth (MD) [m RKB]	4315.0
Final vertical depth (TVD) [m RKB]	3990.0
Maximum inclination [°]	44
Oldest penetrated age	LATE JURASSIC
Oldest penetrated formation	MELKE FM
Geodetic datum	ED50
NS degrees	64° 1' 52.32" N
EW degrees	6° 45' 17.58" E
NS UTM [m]	7102598.45
EW UTM [m]	390320.66



UTM zone	32
NPDID wellbore	7464

Wellbore history

General

The 6406/12-3 S, 6406/12-3 A, and 6406/12-3 B wellbores were drilled in concert on the Pil and Bue prospects in the southern end of the Halten Terrace in the Norwegian Sea. The S and A wells were planned to target the Pil and the Bue prospects, respectively. The first well, 6406/12-3 S tested 1017 Sm³ oil/day with a GOR of 160 Sm³/Sm³ in Intra Melke Formation sandstones. This result led to the decision within the partnership to drill an appraisal of the Pil discovery. The well was designated 6406/12-3 B and was designed to test the Intra Melke Sandstone reservoir encountered along strike from 6406/12-3 S.

Operations and results

Appraisal well 6406/12-3 B was kicked off at 2355 m in well 6406/12-3 S on 2 May 2014. It was drilled with the semi-submersible installation Transocean Arctic to 4315 m in Late Jurassic sediments belonging to the Melke Formation. No significant problem was encountered in the operations. The well was drilled with XP-07 oil based mud from kick-off to TD.

At the top of the Jurassic section, the well encountered a different stratigraphy from the 6406/12-3 S well. Immediately below BCU, a 35 m MD Spekk/Rogn/Spekk succession was penetrated. Hydrocarbons were present within these rocks but not moveable. Below the Spekk Formation, at 3761 m (3440 m TVD), the well encountered over 500 m of Intra Melke Formation sandstones. These sands are interpreted to contain similar facies as those encountered in the 6406/12-3 S discovery immediately below the BCU. The Intra Melke sands contained an 82 m oil column in very good to excellent quality reservoir sandstone with an oil-water contact at 3844 m (3522 m TVD), 18 m deeper than in the 6406/12-3 S well. Pressure data confirmed the same oil gradient as in 6406/12-3 S. There was no gas cap. A second hydrocarbon column of 10 m was seen approximately 360 m below the oil water contact.

A total of 165 m core was cut and recovered in three cores in the interval 3703 m to 3868 m. The cores captured rocks from the cap rock (Lyr Formation marls), the Spekk and Rogn formations, and the Intra Melke Formation reservoir sandstones. Fluid samples were taken at 3776 m (oil), 3836.5 m (oil), 3892.1 m (water), and 4082.4 m (water).

The well was plugged back to the 13 3/8" casing and permanently abandoned on 11 June 2014. It is classified as an oil appraisal well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
2360.00	4315.00



Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3703.0	3757.3	[m]
2	3757.3	3814.3	[m]
3	3814.5	3869.0	[m]

Total core sample length [m]	165.8
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
348	NORDLAND GP
348	NAUST FM
1091	KAI FM
1230	HORDALAND GP
1230	BRYGGE FM
1961	ROGALAND GP
1961	TARE FM
2087	TANG FM
2332	SHETLAND GP
2332	SPRINGAR FM
2449	NISE FM
2659	KVITNOS FM
3452	CROMER KNOLL GP
3452	LANGE FM
3695	LYR FM
3726	VIKING GP
3726	SPEKK FM
3728	ROGN FM
3748	SPEKK FM
3761	INTRA MELKE FM SS
4264	MELKE FM



Logs

Log type	Log top depth [m]	Log bottom depth [m]
DS MR FLEX	3450	3839
GX UX IM	3450	3839
MWD - GR RES AP DIR	2355	3700
MWD - GR RES NEU DEN SON AP	3700	4315
PCOR	3450	3839
RCX	3450	3839
SBL	3450	3839
SLAM DS CNL CZD AAC DIL	3450	3839
VSP	3450	3839

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	414.7	36	418.0	0.00	
SURF.COND.	20	1238.6	26	1246.0	1.70	FIT
INTERM.	13 3/8	2347.8	17 1/2	2355.0	0.00	
PROD.	9 5/8	3692.5	12 1/4	3700.0	0.00	
OPEN HOLE		4315.0	8 1/2	4315.0	1.85	FIT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2330	1.61	54.0		XP-07	
2500	1.60	40.0		XP-07	
3121	1.61	43.0		XP O7	
3654	1.63	40.0		XP O7	
3814	1.61	46.0		XP O7	
3940	1.58	37.0		XP O7	
4050	1.56	33.0		XP O7	
4109	1.54	37.0		XP O7	
4315	1.54	35.0		XP-07	