General information

Wellbore name	6706/6-2 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6706/6-2
Seismic location	EM00-01WIN17R01 3D: Inline 3645. Xline 7247
Production licence	847
Drilling operator	Wintershall Norge AS
Drill permit	1730-L
Drilling facility	TRANSOCEAN SPITSBERGEN
Drilling days	78
Entered date	04.12.2018
Completed date	19.02.2019
Plugged and abondon date	19.02.2019
Release date	21.02.2020
Publication date	21.02.2020
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	40.0
Water depth [m]	1214.0
Total depth (MD) [m RKB]	3916.0
Final vertical depth (TVD) [m RKB]	3807.0
Oldest penetrated age	LATE CRETACEOUS
Geodetic datum	ED50
NS degrees	67° 37' 20.6'' N
EW degrees	6° 45' 57.57'' E
NS UTM [m]	7502669.96
EW UTM [m]	405099.99
UTM zone	32
NPDID wellbore	8580

Wellbore history

General

Well 6706/6-2 S was drilled to test the Marisko prospect in the Hel Graben deep waters in the Norwegian Sea. The primary objective was to test the hydrocarbon potential in turbiditic sandstones of the Late Cretaceous Nise Formation

Operations and results

A pilot hole 6706/6-U-2 was drilled 30 m away from the main bore location in a 9 7/8" hole to de-risk a shallow anomaly and determine the base of the siliceous Ooze. Afterwards the main bore 6706/6-2 S was initially drilled vertically, with build up to 38 degrees during the 8 1/2" and 6" hole sections.

Wildcat well 6706/6-2 S was spudded with the semi-submersible installation Transocean Spitsbergen on 4 December 2018 and drilled to TD at 3916 m (3767 m TVD) m in Early Paleocene sediments. Operations proceeded without significant problems, but due to bad weather 20% of the rig-time was waiting on weather. The well was drilled with seawater down to 2099 m and with Innovert oil-based mud from 2099 m to TD.

Two main sandstone units, Sandstone 1 and Sandstone 2, were penetrated but proved to be Paleocene age Intra-Tang sandstones rather than Nise sandstones. Sandstone 1 was dated to the Selandian and Sandstone 2 to the Danian.

Biostratigraphy in this area is difficult due to the largely resedimented nature of the turbidite sands, showing an overwhelmingly Cretaceous micropaleologic assemblage. However, due to the presence also of Paleocene microfossils in cored samples a Cretaceous age is impossible while a Paleocene age must be correct.

Sandstone 1 was encountered at 2929.5 m (2924.8 m TVD) and was ca 232 m TVD thick. Sandstone 2 was encountered at 3661.3 m (3598 m TVD) and was ca 182 m TVD thick. Both sandstones were cored. Sandstone 1 had good porosities, but generally moderate to low permeability. Sandstone 2 had moderate porosity but very low permeability. Both sandstones were found to be water wet. Weak shows are described in the cored interval (fluorescence, cut and residual ring) in Sandstone 1, but organic geochemical analyses of core extracts showed invasion of the oil-base on the cores, making the shows inconclusive.

Four cores were cut. Cores #1 and #2 were cut in succession from 2952.5 to 3061.5 m in Sandstone 1 with 100% recovery. Core #3 was cut from 3678 to 3705 m in Sandstone 2 with 103% recovery, and core #4 was cut from 3745 to 3763.8 m in Sandstone 2 with 90% recovery. The core-log shifts are 0.5 m for Cores #1 and #2, 2.5 m for core #3, and 3.5 m for core #4. MDT fluid samples were taken at 2958.06 m (water), 3735.5 m (water), and 3737.4 m (water)

The well was permanently abandoned on 19 February 2019 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]
2110.00	3916.00

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	2952.7	3006.6	[m]
2	3006.6	3061.5	[m]
3	3678.0	3705.8	[m]
4	3745.0	3763.8	[m]

Total core sample length [m]	155.4
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2120.0	[m]	DC	PETROSTR
2150.0	[m]	DC	PETROS
2180.0	[m]	DC	PETROS
2210.0	[m]	DC	PETROS
2240.0	[m]	DC	PETROS
2270.0	[m]	DC	PETROS
2300.0	[m]	DC	PETROS
2330.0	[m]	DC	PETROS
2360.0	[m]	DC	PETROS
2390.0	[m]	DC	PETROS
2420.0	[m]	DC	PETROS
2450.0	[m]	DC	PETROS
2480.0	[m]	DC	PETROS
2510.0	[m]	DC	PETROS
2540.0	[m]	DC	PETROS
2570.0	[m]	DC	PETROS
2600.0	[m]	DC	PETROS
2630.0	[m]	DC	PETROS
2660.0	[m]	DC	PETROS
2690.0	[m]	DC	PETROS

2720.0	[m]	DC	PETROS
2750.0	[m]	DC	PETROS
2780.0	[m]	DC	PETROS
2810.0	[m]	DC	PETROS
2840.0	[m]	DC	PETROS
2873.0	[m]	DC	PETROS
2882.0	[m]	DC	PETROS
2891.0	[m]	DC	PETROS
2900.0	[m]	DC	PETROS
2909.0	[m]	DC	PETROS
2918.0	[m]	DC	PETROS
2927.0	[m]	DC	PETROS
2942.0	[m]	DC	PETROS
2948.0	[m]	DC	PETROS
2956.5	[m]	C	PETROS
2960.9	[m]	C	PETROS
2966.3	[m]	C	PETROS
2978.6	[m]	C	PETROS
2980.2	[m]	C	PETROS
2983.3	[m]	C	PETROS
2989.1	[m]	C	PETROS
3005.8	[m]	C	PETROS
3020.6	[m]	C	PETROS
3029.1	[m]	C	PETROS
3039.7	[m]	C	PETROS
3052.1	[m]	C	PETROS
3080.0	[m]	DC	PETROS
3086.0	[m]	DC	PETROS
3113.0	[m]	DC	PETROS
3131.0	[m]	DC	PETROS
3143.0	[m]	DC	PETROS
3170.0	[m]	DC	PETROS
3179.0	[m]	DC	PETROS
3191.0	[m]	DC	PETROS
3203.0	[m]	DC	PETROS
3212.0	[m]	DC	PETROS
3221.0	[m]	DC	PETROS
3230.0	[m]	DC	PETROS
3239.0	[m]	DC	PETROS
3251.0	[m]	DC	PETROS

3263.0	[m]	DC	PETROS
3275.0	[m]	DC	PETROS
3287.0	[m]	DC	PETROS
3299.0	[m]	DC	PETROS
3311.0	[m]	DC	PETROS
3323.0	[m]	DC	PETROS
3335.0	[m]	DC	PETROS
3347.0	[m]	DC	PETROS
3356.0	[m]	DC	PETROS
3377.0	[m]	DC	PETROS
3392.0	[m]	DC	PETROS
3404.0	[m]	DC	PETROS
3416.0	[m]	DC	PETROS
3431.0	[m]	DC	PETROS
3443.0	[m]	DC	PETROS
3455.0	[m]	DC	PETROS
3467.0	[m]	DC	PETROS
3479.0	[m]	DC	PETROS
3491.0	[m]	DC	PETROS
3503.0	[m]	DC	PETROS
3515.0	[m]	DC	PETROS
3527.0	[m]	DC	PETROS
3539.0	[m]	DC	PETROS
3551.0	[m]	DC	PETROS
3563.0	[m]	DC	PETROS
3575.0	[m]	DC	PETROS
3587.0	[m]	DC	PETROS
3599.0	[m]	DC	PETROS
3611.0	[m]	DC	PETROS
3623.0	[m]	DC	PETROS
3635.0	[m]	DC	PETROS
3647.0	[m]	DC	PETROS
3655.0	[m]	SWC	PETROS
3656.0	[m]	DC	PETROS
3665.0	[m]	DC	PETROS
3674.0	[m]	C	PETROS
3677.0	[m]	DC	PETROS
3681.7	[m]	C	PETROS
3684.5	[m]	C	PETROS
3694.6	[m]	C	PETROS

3713.0	[m]	C	PETROS
3716.0	[m]	DC	PETROS
3722.0	[m]	C	PETROS
3731.0	[m]	DC	PETROS
3746.4	[m]	C	PETROS
3756.1	[m]	C	PETROS
3785.0	[m]	DC	PETROS
3812.0	[m]	C	PETROS
3815.0	[m]	DC	PETROS
3824.0	[m]	DC	PETROS
3830.0	[m]	C	PETROS
3842.0	[m]	DC	PETROS
3860.0	[m]	DC	PETROS
3860.0	[m]	C	PETROS
3869.0	[m]	C	PETROS
3878.0	[m]	DC	PETROS
3887.0	[m]	DC	PETROS
3896.0	[m]	DC	PETROS
3908.0	[m]	DC	PETROS
3914.0	[m]	DC	PETROS
3916.0	[m]	DC	PETROS

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
1254	NORDLAND GP
1254	NAUST FM
1324	KAI FM
1507	HORDALAND GP
1507	BRYGGE FM
2110	ROGALAND GP
2110	TANG FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ASLT USIT	0	0
ASLT USIT	3536	2862

CMR HNGS ADT NEXT APS	3536	3916
LWD - CORE	2952	3006
LWD - CORE	3006	3061
LWD - CORE	3678	3705
LWD - CORE	3745	3766
LWD - DIR	1254	1346
LWD - DIR GR RES ABG DEN NEU PWD	3061	3537
LWD - DIR GR RES ABG PWD	2869	2952
LWD - DIR GR RES DEN NEU PWD	3766	3916
LWD - DIR GR RES DEN NEU PWD GEO	3537	3678
LWD - DIR GR RES DEN NEU PWD GEO	3705	3745
LWD - DIR GR RES SON DEN NEU ABG	2103	2869
LWD DIR GR RES	1346	2103
MDT SAT	2933	3224
PQ-XLD PO-ST PQ-QS HY PO-HP IFA	3663	3870
PQ-XLD PO-ST SAT PQ-QS HY PO IFA	3663	3737
SS QGEO ZAIT	3536	3916
VSI-4 ZO	0	0
ZAIT HNGS ADT GPIT PPC MAST GR	1254	3537

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	1344.5	36	1346.0	0.00	
SURF.COND.	20	2099.2	26	2103.0	1.24	LOT
INTERM.	9 5/8	2862.0	12 1/4	2869.0	1.38	LOT
LINER	7	3536.0	8 1/2	3537.0	1.52	LOT
OPEN HOLE		3916.0	6	3916.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1346	1.30			Water	
1451	1.30			Water	
2045	1.14			Oil	
2078	1.30			Water	
2103	1.12			Oil	
2103	1.03			Water	
2106	1.12			Oil	
2434	1.14			Oil	
2869	1.25			Oil	
2869	1.14			Oil	
3061	1.25			Oil	
3405	1.34			Oil	
3497	1.25			Oil	
3547	1.35			Oil	
3550	1.37			Oil	
3678	1.34			Oil	
3678	1.37			Oil	
3704	1.34			Oil	
3916	1.34			Oil	