



General information

Wellbore name	33/9-4
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	STATFJORD
Discovery	33/12-1 Statfjord
Well name	33/9-4
Seismic location	LINE MNG 21 SP.325
Production licence	037
Drilling operator	Mobil Exploration Norway INC
Drill permit	135-L
Drilling facility	NORSKALD
Drilling days	50
Entered date	30.07.1975
Completed date	17.09.1975
Release date	17.09.1977
Publication date	12.04.2016
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
Kelly bushing elevation [m]	25.0
Water depth [m]	144.0
Total depth (MD) [m RKB]	3076.0
Bottom hole temperature [°C]	75
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	HEGRE GP
Geodetic datum	ED50
NS degrees	61° 19' 46.57" N
EW degrees	1° 54' 43.04" E
NS UTM [m]	6800148.02
EW UTM [m]	441761.91
UTM zone	31
NPDID wellbore	409



Wellbore history

General

Well 33/9-4 was drilled on the Statfjord structure on Tampen Spur in the northern North Sea. The primary objective was to test the northern extension of the Statfjord discovery in the Brent Group.

Operations and results

Appraisal well 33/9-4 was spudded with the semi-submersible installation Norskald on 30 July 1975 and drilled to TD at 3076 m in the Triassic Hegre Group. No significant problem was encountered in the operations. The well was drilled with seawater and spud mud down to 488 m and with Lignosulphonate mud from 488 m to TD.

The objective Brent Group was encountered at 2554.5 meters, 33.9 meters high to prognosis. Measured core porosities in the Brent Group averaged 26 percent. Horizontal liquid permeability ranged from 0.05 to 1100.5 milliDarcy and averaged 2155 milliDarcy. The Brent Group was oil filled down to the oil-water contact at 2611.5 m. This is 2 m deeper than on the southern part of Statfjord Field and constitute an in-well gross oil column of 57 m of which 37 m was calculated as net reservoir with 25.4% average porosity and 24.2% average water saturation. Apart from shows in the oil bearing section an oil show was described on a sidewall core at 2618 m.

Continuous coring was carried out from within the overlying Middle Jurassic shales through the base of the oil/water contact in the Brent sands, from 2547.2 to 2612.5 meters. Of the 56.7 meters cut by nine cores, 50.7 meters (89 percent) was recovered. No fluid sample was taken on wire line.

The well was permanently abandoned on 17 September as an oil appraisal well.

Testing

Two drill stem tests were conducted.

DST 1 tested the interval 2608 to 2610 m, just above the oil-water contact. This test produced 123 Sm³ oil with 1% bottom sediments and water /day through a 14/64" choke. The GOR was 115.6 Sm³/Sm³, the oil gravity was 38.0 °API, and the gas gravity was 0.682 (air = 1). The bottom hole temperature in this test was 98.9 °C.

DST 2 tested the interval 2555 to 2560 m. This test produced 187 Sm³ oil with no bottom sediments and water /day through a 16/32" choke. The GOR was 151 Sm³/Sm³, the oil gravity was 38.3 °API, and the gas gravity was 0.684 (air = 1). The bottom hole temperature in this test was 98.3 °C. On maximum choke (48/64"), DST 2 produced 1164 Sm³ oil /day.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
240.00	3074.00

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	2547.2	2555.4	[m]
2	2555.4	2564.9	[m]
3	2564.9	2568.6	[m]
4	2568.6	2577.7	[m]
5	2577.7	2581.1	[m]
6	2581.1	2585.0	[m]
7	2585.0	2594.2	[m]
8	2594.2	2603.3	[m]
9	2603.3	2612.4	[m]

Total core sample length [m]	65.2
Cores available for sampling?	YES

Core photos

8357-8366ft



8366-8376ft



8377-8389ft



8415-8424ft



8424-8433ft



8433-8442ft



8442-8451ft



8451-8460ft



8460-8469ft



8468-8484ft



8484-8493ft



8493-8502ft



8502-8511ft



8511-8520ft



8520-8549ft



8549-8558ft



8558-8567ft



8567-8570ft

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
169	NORDLAND GP
1667	ROGALAND GP
1850	SHETLAND GP
2526	CROMER KNOLL GP
2541	VIKING GP
2554	BRENT GP
2736	DUNLIN GP
2889	STATFJORD GP
2974	HEGRE GP

Geochemical information

Document name	Document format	Document size [MB]
409_1	pdf	0.50
409_2	pdf	0.41

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
409_01_WDSS_General_Information	pdf	0.27

Documents - reported by the production licence (period for duty of secrecy expired)





Document name	Document format	Document size [MB]
409 33 9 4 COMPLETION LOG	pdf	1.38
409 33 9 4 COMPLETION REPORT	PDF	11.18

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2608	2610	5.6
2.0	2555	2560	19.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	123		0.830		649
2.0	1164		0.840		886

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL	600	2526
CBL	1640	3089
CCL	184	2608
DLL MSFL	1694	3074
FDC CNL	1695	3074
HDT	1694	3074
ISF SON	229	3074

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	230.0	36	230.0	0.00	





SURF.COND.	20	477.0	26	488.0	0.00	
INTERM.	13 3/8	1694.0	17 1/2	1703.0	0.00	
INTERM.	9 5/8	3044.0	12 1/4	3076.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
233	1.34			Waterbased	
512	1.50			Waterbased	
634	1.14			Waterbased	
1753	1.76			Waterbased	