

General information

Wellbore name	30/4-2
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	MARTIN LINGE
Discovery	30/7-6 Martin Linge
Well name	30/4-2
Seismic location	802-55 SP 93.8
Production licence	043
Drilling operator	BP Norway Limited U.A.
Drill permit	230-L
Drilling facility	SEDCO 707
Drilling days	183
Entered date	16.11.1979
Completed date	16.05.1980
Release date	16.05.1982
Publication date	10.04.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS/CONDENSATE
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]	123.0
Total depth (MD) [m RKB]	4775.0
Final vertical depth (TVD) [m RKB]	4764.0
Maximum inclination [°]	8
Bottom hole temperature [°C]	163
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	HEGRE GP
Geodetic datum	ED50
NS degrees	60° 31' 1.1" N
EW degrees	2° 2' 46.22" E
NS UTM [m]	6709524.95
EW UTM [m]	447628.55

UTM zone	31
NPDID wellbore	378

Wellbore history

General

Well 30/4-2 was drilled test an easterly dipping fault block on the western margin of the Viking Graben. The primary target was the Brent Group, which had already been proven to contain gas condensate by well 30/7-6 located 3 km to the South on the same structure. Secondary objectives were to test Palaeocene and Lower Eocene sandstones, and the Statfjord Formation. Well 30/7-2 had earlier encountered a hydrocarbon column with dry gas overlying heavy oil in the uppermost part of the Eocene Frigg Formation.

Operations and results

Well 30/4-2 was spudded with the semi-submersible installation SEDCO 707 on 16 November 1979 and drilled to TD at 4775 m in the Triassic Hegre Group. Bad weather caused some delay, and on 12 March, the drill string was hung-off due to adverse weather conditions. Whilst retrieving the running assembly an influx from the well was observed. The influx was bull-headed and it took five days before the well was in stable conditions again. Otherwise, no significant incident happened in the operations. The well was drilled with seawater and gel down to 1096 m, with lignosulphonate/Drispac/Gypsum mud from 1096 m to 2530 m, and with lignosulphonate/Poly-rx from 2530 to TD.

The Frigg Formation was encountered water-wet without shows at 1820 m, 36.5 m below the OWC defined in the 30/7-2 Frigg discovery. The Brent Group was encountered at 3779 m. Brent contained gas/condensate and had excellent poroperm characteristics. The gas-water contact established between 3876.5 m and 3893.5 m in the Ness Formation. The Statfjord Formation was encountered water-wet at 4337 m with only some poor shows in the top. Pressure analysis showed that it was not communicating with the Brent Group.

Thirteen full-hole cores were cut in well 30/4-2: two in the Tertiary, ten in the Jurassic Brent Group and one in the Dunlin formation. A total of 143.7 m core was recovered. A segregated RFT sample was take at 3827.5 m

The well was permanently abandoned on 16 May 1980 as a gas/condensate appraisal well.

Testing

One drill stem test was performed from the interval 3832 to 3838.1 m. The test produced 811300 Sm3 gas and 174 Sm3 condensate /day through two downhole 1/2" chokes and a 38/64" surface choke. The GOR was 4663 Sm3/Sm3, the oil gravity was 45 °API, and the gas gravity was 0.64 (air = 1). The maximum gauge temperature in the test was 134.4 °C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
288.00	4774.00

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
2	2043.0	2047.4	[m]
3	3784.0	3784.9	[m]
4	3788.8	3805.4	[m]
5	3805.4	3822.3	[m]
6	3823.5	3829.9	[m]
7	3829.9	3834.7	[m]
8	3834.7	3852.8	[m]
9	3853.1	3871.3	[m]
10	3871.5	3873.0	[m]
11	3873.0	3891.4	[m]
12	3891.4	3909.7	[m]
13	4239.5	4257.8	[m]

Total core sample length [m]	142.7
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1070.0	[m]	DC	GEOCH
1100.0	[m]	DC	GEOCH
1110.0	[m]	DC	GEOCH
1160.0	[m]	DC	GEOCH
1190.0	[m]	DC	GEOCH
1220.0	[m]	DC	GEOCH
1250.0	[m]	DC	GEOCH
1280.0	[m]	DC	GEOCH
1310.0	[m]	DC	GEOCH
1340.0	[m]	DC	GEOCH
1370.0	[m]	DC	GEOCH
1400.0	[m]	DC	GEOCH
1430.0	[m]	DC	GEOCH
1460.0	[m]	DC	GEOCH

1490.0	[m]	DC	GEOCH
1520.0	[m]	DC	GEOCH
1550.0	[m]	DC	GEOCH
1580.0	[m]	DC	GEOCH
1610.0	[m]	DC	GEOCH
1640.0	[m]	DC	GEOCH
1670.0	[m]	DC	GEOCH
1710.0	[m]	DC	GEOCH
1740.0	[m]	DC	GEOCH
1769.0	[m]	DC	GEOCH
1796.0	[m]	DC	GEOCH
1823.0	[m]	DC	GEOCH
1850.0	[m]	DC	GEOCH
1877.0	[m]	DC	GEOCH
1904.0	[m]	DC	GEOCH
1931.0	[m]	DC	GEOCH
1958.0	[m]	DC	GEOCH
1994.0	[m]	DC	GEOCH
2021.0	[m]	DC	GEOCH
2045.0	[m]	DC	GEOCH
2075.0	[m]	DC	GEOCH
2102.0	[m]	DC	GEOCH
2130.0	[m]	DC	GEOCH
2160.0	[m]	DC	GEOCH
2190.0	[m]	DC	GEOCH
2220.0	[m]	DC	GEOCH
2250.0	[m]	DC	GEOCH
2280.0	[m]	DC	GEOCH
2310.0	[m]	DC	GEOCH
2340.0	[m]	DC	GEOCH

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
147	NORDLAND GP
975	HORDALAND GP
1820	FRIGG FM
1959	ROGALAND GP
1959	BALDER FM

1973	SELE FM
1996	HEIMDAL FM
2313	SHETLAND GP
3705	VIKING GP
3705	DRAUPNE FM
3726	HEATHER FM
3780	BRENT GP
3780	TARBERT FM
3862	NESS FM
4024	ETIVE FM
4036	RANNOCH FM
4061	DUNLIN GP
4061	DRAKE FM
4127	COOK FM
4208	BURTON FM
4243	AMUNDSEN FM
4337	STATFJORD GP
4670	HEGRE GP

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

Document name	Document format	Document size [MB]
378_01_WDSS_General_Information	pdf	0.14
378_02_WDSS_completion_log	pdf	0.29

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

Document name	Document format	Document size [MB]
378_30_4_2_Completion_report_and_log	pdf	78.46

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3807	3813	15.0

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

Test number	Oil [Sm ³ /day]	Gas [Sm ³ /day]	Oil density [g/cm ³]	Gas grav. rel.air	GOR [m ³ /m ³]
1.0	6818	812000	0.802	0.640	199

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL	2100	2716
CBL	3505	4153
CBL	3515	4174
CST	0	0
DLL	3717	3964
FDC CNL	1120	2115
FDC CNL	3925	4196
FDC CNL	4184	4772
HDT	3717	4196
HDT	4185	4501
HRT	2000	2897
ISF SON	284	1137
ISF SON	1100	2525
ISF SON	1745	2117
ISF SON	2490	3723
ISF SON	3695	3716
ISF SON	3925	4197
ISF SON	4190	3393
ISF SON	4405	4775
RDC CNL	3717	3966
RFT	3161	3701
RFT	3782	3782
RFT	3785	3947
RFT	4349	4476
VS	284	3725
VS	3725	4532

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	261.0	36	264.0	0.00	LOT
SURF.COND.	20	1105.0	26	1111.0	1.53	LOT
INTERM.	13 3/8	2499.0	17 1/2	2506.0	1.79	LOT
INTERM.	9 5/8	3694.0	12 1/4	3692.0	2.09	LOT
LINER	7	4170.0	8 1/2	4172.0	2.27	LOT
OPEN HOLE		4751.0	6	4751.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
946	1.06			waterbased	
1532	1.19			waterbased	
2091	1.28			waterbased	
2977	1.65			waterbased	
3455	1.70			waterbased	
3942	2.04			waterbased	
4751	2.09			waterbased	

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]
378_Formation_pressure_(Formasjonstrykk)	pdf	0.22

