

**General information**

Wellbore name	34/10-5
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	GULLFAKS
Discovery	34/10-1 Gullfaks
Well name	34/10-5
Seismic location	ST 24.5 SP 1275
Production licence	050
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	228-L
Drilling facility	ROSS RIG (1)
Drilling days	77
Entered date	18.10.1979
Completed date	02.01.1980
Release date	02.01.1982
Publication date	06.12.2012
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	TARBERT FM
Kelly bushing elevation [m]	25.0
Water depth [m]	136.0
Total depth (MD) [m RKB]	2780.0
Final vertical depth (TVD) [m RKB]	2778.0
Maximum inclination [°]	7.5
Bottom hole temperature [°C]	79
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	LUNDE FM
Geodetic datum	ED50
NS degrees	61° 11' 25.35" N
EW degrees	2° 10' 23.39" E
NS UTM [m]	6784434.79
EW UTM [m]	455546.36



UTM zone	31
NPDID wellbore	428

Wellbore history

General

Well 34/10-5 was drilled in the western part of the Delta Closure in Block 34/10 in the Northern North Sea. The primary objective of well 34/10-5 was sandstones of Middle Jurassic age. Secondary objectives were sandstones of Early Jurassic age.

Operations and results

Appraisal well 34/10-5 was spudded with the semi-submersible installation Ross Rig on 18 October 1979 and drilled to TD at 2780 m in the Late Triassic Lunde Formation. Apart from lost circulation problems in the 12 1/4" section the drilling itself went quite smoothly. However, almost 21 days were lost due to bad weather conditions. The well was drilled with spud mud down to 518 m, with gel/lignosulphonate from 518 to 1775 m, with gel/lignite/lignosulphonate from 1775 m to 2210 m, and with gel/lignosulphonate from 2210 m to TD.

The Brent Group was encountered at 1896 m and was oil bearing down to the OWC at ca 1972 m. Test results indicated the same fluid system as in the previous wells drilled on the structure.

Oil shows were recorded from 1250 m and downwards more or less continuously on claystone, limestone and siltstone to top Brent level. No shows were recorded below OWC.

Four cores were recovered in the interval from 1917 to 1974.7 m. One RFT fluid sample from the Brent Group recovered ca 0.5 l oil and 1 l of mud filtrate.

The well was permanently abandoned on 2 January 1980 as an oil appraisal well.

Testing

The Tarbert Formation was tested from perforations in the interval 1925 -1927 m. The zone produced ca 724 Sm³ oil and 59400 Sm³ gas /day. No water was produced. The GOR was 82 Sm³/Sm³ and the oil gravity was 29 deg API. The bottom hole maximum temperature was 74.5 deg C, measured at 1907 m.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
220.00	2780.00

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	1910.7	1928.7	[m]
2	1930.0	1934.2	[m]
3	1949.2	1959.8	[m]
4	1967.4	1974.0	[m]

Total core sample length [m]	39.4
Cores available for sampling?	YES

Core photos



1910-1913m



1913-1916m



1916-1918m



1918-1921m



1921-1924m



1924-1926m



1926-1928m



1930-1932m



1932-1934m



1949-1951m



1951-1954m



1954-1957m



1957-1959m



1967-1970m



1970-1972m



1972-1974m

**Palynological slides at the Norwegian Offshore Directorate**

Sample depth	Depth unit	Sample type	Laboratory
1859.0	[m]	DC	
1862.0	[m]	DC	
2156.0	[m]	DC	
2162.0	[m]	DC	
2189.0	[m]	DC	
2207.0	[m]	DC	
2213.0	[m]	DC	
2228.0	[m]	DC	
2276.0	[m]	DC	
2285.0	[m]	DC	
2294.0	[m]	DC	
2300.0	[m]	DC	
2357.0	[m]	DC	

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
161	NORDLAND GP
916	UTSIRA FM
925	NO FORMAL NAME
945	HORDALAND GP
1057	NO FORMAL NAME
1097	NO FORMAL NAME
1120	NO FORMAL NAME
1195	NO FORMAL NAME
1215	NO FORMAL NAME
1390	NO FORMAL NAME
1555	ROGALAND GP
1555	BALDER FM
1613	LISTA FM
1734	SHETLAND GP
1734	JORSALFARE FM
1857	VIKING GP
1857	DRAUPNE FM
1858	HEATHER FM
1896	BRENT GP



1896	TARBERT FM
1970	NESS FM
2035	ETIVE FM
2070	RANNOCH FM
2134	BROOM FM
2148	DUNLIN GP
2148	DRAKE FM
2240	COOK FM
2381	BURTON FM
2388	AMUNDSEN FM
2562	STATFJORD GP
2562	NANSEN FM
2649	EIRIKSSON FM
2732	RAUDE FM
2764	HEGRE GP
2764	LUNDE FM

Geochemical information

Document name	Document format	Document size [MB]
428_GCH_1	pdf	0.93
428_GCH_2	pdf	0.63

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

Document name	Document format	Document size [MB]
428_01_WDSS_General_Information	pdf	0.13
428_02_WDSS_completion_log	pdf	0.21

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

Document name	Document format	Document size [MB]
428_34_10_5_Core_Supplementary_Report	pdf	0.06
428_34_10_5_Geco_Core_Final_Report	pdf	1.06
428_34_10_5_Paleontological_Report_1500_2_780m	pdf	11.76





428 34 10 5 Paleontological Study	pdf	0.91
428 34 10 5 Petrophysical Evaluation	pdf	3.82
428 34 10 5 PVT study of Bottom Hole Sample	pdf	0.24
428 34 10 5 Reservoir Fluid Study	pdf	0.57
428 34 10 5 Source Rock Analyses	pdf	0.47
428 34 10 5 Special Core Analysis CoreLab	pdf	0.26
428 34 10 5 Special Core Analysis Corex	pdf	0.98
428 34 10 5 Special Core Analysis Waterflood Tests	pdf	1.04
428 34 10 5 Well Testing Report	pdf	0.81
428 34 10 5 Well Test Report	pdf	0.69

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	1900	1902	12.7

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				74

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	724	59400	0.882		82

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL GR	460	1766
CBL VDL GR	1611	2208
DLL MSFL GR	1867	2159
FDC CNL GR CAL	1765	2776
FDC GR CAL	502	1770
GEODIP	1889	2001
HDT	1776	2160
HDT	2208	2777
ISF SON GR SP	161	2775





VELOCITY	296	2770
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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	225.0	36	227.0	0.00	LOT
SURF.COND.	20	502.0	26	518.0	1.59	LOT
INTERM.	13 3/8	1598.0	17 1/2	1610.0	1.76	LOT
INTERM.	9 5/8	1766.0	12 1/4	1775.0	1.98	LOT
LINER	7	2209.0	8 1/2	2210.0	1.94	LOT
OPEN HOLE		2780.0	6	2780.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1475	1.25			waterbased	
1540	1.32			waterbased	
1705	1.55			waterbased	
1885	1.75			waterbased	
1943	1.78			waterbased	
2090	1.77			waterbased	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
1911.00	[m]
1912.00	[m]
1914.00	[m]
1918.00	[m]
1921.00	[m]
1924.00	[m]
1926.00	[m]
1931.00	[m]
1932.00	[m]
1934.00	[m]
1950.00	[m]
1952.00	[m]



1955.00	[m]
1959.00	[m]

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]
428 Formation pressure (Formasjonstrykk)	pdf	0.22

