

General information

TypeEXPLORATIONPurposeAPPRAISALPurposeAPPRAISALStatusP&AFactmaps in new windowlink to mapMain areaNORTH SEAFieldGULLFAKSDiscovery34/10-1 GullfaksWell name34/10-24Seismic locationST 8488 2111 SP. 500Production licence050_Drilling operatorDen norske stats oljeselskap a.sDrilling facilityDEEPSEA BERGENDrilling days37Entered date05.08.1985Completed date05.08.1985Completed date05.08.1985Release date05.08.1987Publication date21.12.2012Purpose - plannedAPPRAISALReentryNOContentGASDiscovery wellboreNORDLAND GPKelly bushing elevation [m]23.01st level with HC, agePLIOCENE1st level with HC, formationNORDLAND GPKelly bushing levation [m]600.0Final vertical depth (TVD) [m]600.0RKBMaximum inclination [°]4Bottom hole temperature [°C]9010dest penetrated age01dest penetrated age2° 11' 28.1" ENS degrees2° 11' 28.1" ENS UTM [m]6782792.13EW UTM [m]456492.55	Wellbore name	34/10-24
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1st level with HC, agePLIOCENE1st level with HC, formationNORDLAND GPKelly bushing elevation [m]23.0Water depth [m]134.0Total depth (MD) [m RKB]600.0Final vertical depth (TVD) [m RKB]600.0Maximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	Content	GAS
1st level with HC, formationNORDLAND GPKelly bushing elevation [m]23.0Water depth [m]134.0Total depth (MD) [m RKB]600.0Final vertical depth (TVD) [m RKB]600.0Maximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	Discovery wellbore	NO
Kelly bushing elevation [m]23.0Water depth [m]134.0Total depth (MD) [m RKB]600.0Final vertical depth (TVD) [m RKB]600.0Maximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees2° 11' 28.1" ENS UTM [m]6782792.13	1st level with HC, age	PLIOCENE
Water depth [m]134.0Total depth (MD) [m RKB]600.0Final vertical depth (TVD) [m RKB]600.0Maximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	1st level with HC, formation	NORDLAND GP
Total depth (MD) [m RKB]600.0Final vertical depth (TVD) [m RKB]600.0Maximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	Kelly bushing elevation [m]	23.0
Final vertical depth (TVD) [m RKB]600.0Maximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	Water depth [m]	134.0
RKB]AMaximum inclination [°]4Bottom hole temperature [°C]29Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	Total depth (MD) [m RKB]	600.0
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Oldest penetrated agePLIOCENEOldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65" NEW degrees2° 11' 28.1" ENS UTM [m]6782792.13	Maximum inclination [°]	4
Oldest penetrated formationNORDLAND GPGeodetic datumED50NS degrees61° 10' 32.65'' NEW degrees2° 11' 28.1'' ENS UTM [m]6782792.13	Bottom hole temperature [°C]	29
Geodetic datum ED50 NS degrees 61° 10' 32.65'' N EW degrees 2° 11' 28.1'' E NS UTM [m] 6782792.13	Oldest penetrated age	PLIOCENE
NS degrees 61° 10' 32.65" N EW degrees 2° 11' 28.1" E NS UTM [m] 6782792.13	Oldest penetrated formation	NORDLAND GP
EW degrees 2° 11' 28.1" E NS UTM [m] 6782792.13	Geodetic datum	ED50
NS UTM [m] 6782792.13	NS degrees	61° 10' 32.65'' N
	EW degrees	2° 11' 28.1" E
EW UTM [m] 456492.55	NS UTM [m]	6782792.13
	EW UTM [m]	456492.55



UTM zone	31
NPDID wellbore	483

Wellbore history

General

Well 34/10-24 was drilled to test possible shallow gas accumulation in sandstones at the location for the Gullfaks A platform. The targets were several sand layers of Pliocene age between 313 m and 600 m. Gas had been indicated on seismic anomalies and logs from other wells in the same field.

Operations and results

Well 34/10-22 was spudded with the semi-submersible installation Deepsea Bergen on 28 June 1985 and drilled to TD at 600 m in Pliocene sediments in the Nordland Group. No significant problem was encountered in the operations. The well was drilled with water based mud.

Top Pliocene was encountered at 285 m. The well encountered sand layers at 334.5 to 337.5 m, 346 to 347 m, and at 436 to 441 m. The sand at 334.5 to 337.5 m was gas bearing. According to previous log correlations, the well should have run into rocks of Miocene age. But biostratigraphical investigations proved only fauna of Pleistocene and Pliocene, age.

No cores were cut and no wire line fluid samples were taken. Cuttings samples were collected every 5 m from 230 m to TD. A full set of conventional logs where run. Maximum bottom hole temperature on wire line, measured 4 hours after circulation was 29.2 deg C.

The well was permanently abandoned on 5 August 1985.

Testing

One DST test was performed in the interval 334.5 to 336 m in order to bleed of the gas down to less than hydrostatic pressure. The sand was acid treated and gravel packed and over a ca one week period the well flowed 56 -71 Sm3 gas/day through two parallel chokes of diameters 128/64" and 82/64". Total accumulated production was ca 400000 Sm3 gas. The gas was 97.88% methane; the rest was mainly nitrogen (1.85%) and carbon-dioxide (0.18%). The gas gravity was 0.559 (air = 1). The initial reservoir pressure was estimated to be between 33.2 and 33.7 bar. A minor pressure reduction was registered in the reservoir, but it could not be concluded that the aim of the test was achieved. This indicated that the gas bearing interval was relatively widely distributed, and probably water driven.

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Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
230.00	600.00



Cuttings available for sampling? NO

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
157	NORDLAND GP

Geochemical information

Document name	Document format	Document size [MB]
<u>483 GCH 1</u>	pdf	0.06

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

Document name	Document format	Document size [MB]
483 01 WDSS General Information	pdf	0.25

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

Document name	Document format	Document size [MB]
483_34_10_24_Completion_log	pdf	0.36
483 34 10 24 Completion report	pdf	9.34

Drill stem tests (DST)

Test	From depth MD	To depth MD	Choke size
number	[m]	[m]	[mm]
1.0	335	336	

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





Factpages Wellbore / Exploration

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0		70000		0.559	

Logs

Log type	Log top depth [m]	Log bottom depth [m]
4ARM CAL GR	309	599
CBL VDL GR	152	349
CDL CNL CAL GR	309	599
DIFL ACL MSFL GR	309	599
DLL MSFL GR	309	596

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	221.0	36	221.5	0.00	LOT
SURF.COND.	20	310.0	26	315.0	1.30	LOT
INTERM.	9 5/8	587.0	12 1/4	600.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
220	1.05	51.0	12.0	WATER BASED	03.07.1985
310	1.10	85.0	13.0	WATER BASED	09.07.1985
315	1.07	52.0	13.0	WATER BASED	03.07.1985
379	1.10	63.0	12.0	WATER BASED	09.07.1985
600	1.11	62.0	11.0	WATER BASED	09.07.1985