



Generell informasjon

Brønnbane navn	33/9-4
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	STATFJORD
Funn	33/12-1 Statfjord
Brønn navn	33/9-4
Seismisk lokalisering	LINE MNG 21 SP.325
Utvinningstillatelse	037
Boreoperatør	Mobil Exploration Norway INC
Boretillatelse	135-L
Boreinnretning	NORSKALD
Boredager	50
Borestart	30.07.1975
Boreslutt	17.09.1975
Frigitt dato	17.09.1977
Publiseringsdato	12.04.2016
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	BRENT GP
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	144.0
Totalt målt dybde (MD) [m RKB]	3076.0
Temperatur ved bunn av brønnbanen [°C]	75
Eldste penetrerte alder	LATE TRIASSIC
Eldste penetrerte formasjon	HEGRE GP
Geodetisk datum	ED50
NS grader	61° 19' 46.57" N
ØV grader	1° 54' 43.04" E
NS UTM [m]	6800148.02
ØV UTM [m]	441761.91



UTM sone	31
NPDID for brønnbanen	409

Brønnhistorie

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.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
240.00	3074.00



Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
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 kjerneprøve lengde [m]	65.2
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



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

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
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

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
409_1	pdf	0.50
409_2	pdf	0.41

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
409_01_WDSS_General_Information	pdf	0.27





Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
409_33_9_4_COMPLETION_LOG	pdf	1.38
409_33_9_4_COMPLETION_REPORT	PDF	11.18

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2608	2610	5.6
2.0	2555	2560	19.0

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	123		0.830		649
2.0	1164		0.840		886

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [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





Foringsrør og formasjonsstyrketester

Type utforing	Utforing diam. [tommer]	Utforing dybde [m]	Brønnbane diam. [tommer]	Brønnbane dyp [m]	LOT/FIT slam eqv. [g/cm3]	Type formasjonstest
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	

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	flytegrense [Pa]	Type slam	Dato, måling
233	1.34			Waterbased	
512	1.50			Waterbased	
634	1.14			Waterbased	
1753	1.76			Waterbased	