



Generell informasjon

Brønnbane navn	34/10-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	GULLFAKS
Funn	34/10-1 Gullfaks
Brønn navn	34/10-1
Seismisk lokalisering	LINE ST 24.5 & SP 1373
Utvinningstillatelse	050
Boreoperatør	Den norske stats oljeselskap a.s
Boretillatelse	197-L
Boreinnretning	ROSS RIG (1)
Boredager	80
Borestart	20.06.1978
Boreslutt	08.09.1978
Frigitt dato	08.09.1980
Publiseringsdato	05.12.2012
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	YES
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]	138.0
Totalt målt dybde (MD) [m RKB]	2460.0
Temperatur ved bunn av brønnbanen [°C]	58
Eldste penetrerte alder	LATE TRIASSIC
Eldste penetrerte formasjon	LUNDE FM
Geodetisk datum	ED50
NS grader	61° 10' 46.84" N
ØV grader	2° 12' 43.67" E
NS UTM [m]	6783217.39
ØV UTM [m]	457626.92



UTM sone	31
NPDID for brønnbanen	424

Brønnhistorie

**General**

Well 34/10-1 was the first well to be drilled on the "Delta structure" (Gulfaks fault block) in the Northern North Sea. The primary objective of the well was to penetrate sandstones of Early to Middle Jurassic age and to evaluate their possible content of hydrocarbons.

Operations and results

Wildcat well 34/10-1 was spudded with the semi-submersible installation Ross Rig on 20 June 1978 and drilled to TD at 2460 m in the Late Triassic Lunde Formation. The 30" casing was set after considerable difficulty in getting through a section of boulders. A severe well kick was taken after a flow check at 1780 m, ca 3 m above top reservoir. Ca 440 barrels of mud were gained in the pit. Otherwise the operations proceeded without significant problems. No directional survey was run below 1737 m. The well was drilled with seawater and gel slugs down to 214 m, with fresh water and gel from 214 m to 504 m, with seawater/gel/lignosulphonate from 504 m to 1970 m and with Seawater/gel/spersene/XP20 from 1970 m to TD.

First oil show, pale yellow fluorescence in limestone and siltstone, was recorded at 1370 m in the Hordaland Group. Similar shows continued down to top Brent Group level interrupted only by a short interval of no shows from 1579 to 1600 m. At 1555 in the Balder Formation trace oil in the mud was observed. Top reservoir, Tarbert Formation, was encountered at 1783 m directly underlying the Late Cretaceous Shetland Group. Oil was proven in sandstones all through the Middle Jurassic Brent Group down to top Drake Formation in the Dunlin Group. The oil/water contact was not observed in the well. Below reservoir level shows decreased and died out completely below 2325 m.

A total of 12 cores were recovered in the interval from 1782.0 to 1951.1 m and one core from 2232.5 to 2250.5 m. Three runs were made with the RFT and samples were taken at 1871 m (oil) and 2244 m (water, mud and mud filtrate).

The well was permanently abandoned on 8 September as an oil discovery.

Testing

Three drill stem tests were conducted in the Brent Formation.

DST 1 perforated the interval 1930 to 1935 m in the Rannoch Formation and produced 191 Sm³ oil and 20560 Sm³ gas /day through a 32/64" choke. No water was produced. The GOR was 108 Sm³/Sm³, the oil gravity was 28.9 deg API, and the gas gravity was 0.632 (air = 1).

DST 2 perforated the interval 1839 to 1844 m in the Etive Formation and produced 1049 Sm³ oil and 86930 Sm³ gas /day through a 36/64" choke. No water was produced. The GOR was 83 Sm³/Sm³, the oil gravity was 28.4 deg API, and the gas gravity was 0.61 (air = 1). The maximum bottom hole temperature recorded in the test was 71.7 deg C.

DST 3 perforated the interval 1788 to 1792 m in the Tarbert Formation and produced 323 Sm³ oil and 29365 Sm³ gas /day through a 17/64" choke. No water was produced. The GOR was 91 Sm³/Sm³, the oil gravity was 29 deg API, and the gas gravity was 0.62 (air = 1). The maximum bottom hole temperature recorded in the test was 69 deg C.



Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
210.00	2460.00

Borekaks tilgjengelig for prøvetaking?	NO
--	----

Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1782.0	1785.9	[m]
2	1790.5	1792.8	[m]
3	1802.5	1815.6	[m]
4	1819.0	1835.6	[m]
5	1835.8	1853.3	[m]
6	1853.3	1862.3	[m]
7	1865.4	1873.8	[m]
8	1875.0	1889.5	[m]
9	1893.5	1911.3	[m]
10	1911.3	1922.1	[m]
11	1923.1	1938.8	[m]
12	1938.8	1951.1	[m]
13	2232.5	2244.5	[m]

Total kjerneprøve lengde [m]	153.8
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



1782-1784m



1784-1785m



1790-1792m



1802-1805m



1805-1806m



1807-1810m



1810-1813m



1813-1815m



1819-1821m



1821-1824m



1824-1827m



1827-1829m



1829-1832m



1832-1835m



1835-1835m



1835-1838m



1838-1841m



1841-1843mj



1843-1846m



1846-1849m



1849-1852m



1852-1853m



1853-1855m



1855-1858m



1858-1861m



1861-1862m



1865-1868m



1868-1870m



1870-1873m



1873-1874m



1875-1877m



1877-1880m



1880-1883m



1883-1885m



1885-1888m



1888-1889m



1893-1896m



1896-1898m



1898-1901m



1901-1904m



1904-1907m



1907-1909m



1909-1911m



1911-1914m



1914-1916m



1916-1919m



1919-1922m



1923-1925m



1925-1928m



1928-1931m



1931-1933m



1933-1936m



1936-1938m



1938-1941m



1941-1944m



1944-1946m



1946-1949m



1949-1951m



2232-2235m



2235-2237m



2237-2240m



2240-2243m



2243-2244m



Palynologiske preparater i Søkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
1782.3	[m]	C	LAP
1791.5	[m]	C	LAP
1807.0	[m]	C	LAP
1809.2	[m]	C	LAP
1811.2	[m]	C	LAP
1812.7	[m]	C	LAP
1819.0	[m]	C	LAP
1819.9	[m]	C	LAP
1824.6	[m]	C	LAP
1826.0	[m]	C	LAP
1829.3	[m]	C	LAP
1830.3	[m]	C	LAP
1832.3	[m]	C	LAP
1833.5	[m]	C	LAP
1835.6	[m]	C	LAP
1937.7	[m]	C	LAP
1940.0	[m]	C	LAP
1941.3	[m]	C	LAP
1943.7	[m]	C	LAP
1944.5	[m]	C	LAP
1945.2	[m]	C	LAP
1946.8	[m]	C	LAP
1947.1	[m]	C	LAP
1949.0	[m]	C	LAP
2238.4	[m]	C	LAP

Oljeprøver i Søkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	DST1	1930.00	1935.00		21.08.1978 - 00:00	YES
DST	DST3	1788.00	1792.00		29.08.1978 - 00:00	YES



Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
163	NORDLAND GP
936	UTSIRA FM
946	HORDALAND GP
1513	ROGALAND GP
1513	BALDER FM
1582	LISTA FM
1678	SHETLAND GP
1678	JORSALFARE FM
1718	KYRRE FM
1783	BRENT GP
1783	TARBERT FM
1797	NESS FM
1833	ETIVE FM
1871	RANNOCH FM
1935	BROOM FM
1946	DUNLIN GP
1946	DRAKE FM
2023	COOK FM
2081	BURTON FM
2120	AMUNDSEN FM
2268	STATFJORD GP
2268	NANSEN FM
2329	RAUDE FM
2367	HEGRE GP
2367	LUNDE FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
424_GCH_1	pdf	0.66
424_GCH_2	pdf	3.66
424_GCH_3	pdf	1.04

Dokumenter - eldre Sjøkeldirektoratets WDSS rapporter og andre relaterte dokumenter





Dokument navn	Dokument format	Dokument størrelse [KB]
424 01 WDSS General Information	pdf	0.22
424 03 WDSS lithlog	pdf	0.06

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
424 34 10 1 A palynostratigraphic study of 11 samples	pdf	0.84
424 34 10 1 ADT report	pdf	7.17
424 34 10 1 Analysis of oil	pdf	0.89
424 34 10 1 Biostratigraphy	pdf	3.53
424 34 10 1 Biostratigraphy of interval 21 0m-2462m	pdf	7.30
424 34 10 1 Brent formation relief program	pdf	1.88
424 34 10 1 Capillary pressure measurement	pdf	7.38
424 34 10 1 CompletionReport	pdf	23.14
424 34 10 1 Completion report	PDF	29.02
424 34 10 1 Core description	pdf	1.72
424 34 10 1 Core photoes core 1-13	pdf	201.96
424 34 10 1 Data summary	pdf	39.05
424 34 10 1 Dipmeter analysis	pdf	2.78
424 34 10 1 Final report core 1-13	pdf	3.29
424 34 10 1 Geological prognosis & drilling program consideration	pdf	4.27
424 34 10 1 Pressure prediction	pdf	37.61
424 34 10 1 Reservoir fluid analysis DST-3 flow-3	pdf	1.27
424 34 10 1 Reservoir fluid study bottom hole sample	pdf	1.18
424 34 10 1 Reservoir fluid study DST-2 flow-2	pdf	1.24
424 34 10 1 Source rock crude oil correlation	pdf	5.67
424 34 10 1 Source rock evaluation (2)	pdf	4.92
424 34 10 1 Source rock evaluation	pdf	0.44
424 34 10 1 Special core analysis	pdf	18.18
424 34 10 1 Special core analysis II	pdf	6.14
424 34 10 1 Special core analysis study	pdf	6.46





424 34 10 1 Supplementary report DST 2 flow 3	pdf	0.76
424 34 10 1 Testrapport	pdf	2.12
424 34 10 1 True boiling point distillation	pdf	2.35

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	1930	1935	12.7
2.0	1839	1844	14.3
2.1	1839	1844	6.7
3.0	1788	1792	6.7

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0			13.500	
2.0			29.000	72
2.1			30.000	69
3.0			30.000	69

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyingde rel. luft	GOR [m3/m3]
1.0	191	20560	0.881	0.632	108
2.0	1048	86930	0.885	0.610	83
2.1	323	29365	0.879	0.626	
3.0	322	28151	0.882	0.620	

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL GR	1400	1771
CBL VDL GR CCL	1725	1950
CBL VDL GR CCL	1760	1925
DLL MSFL GR	1725	1969
FDC CNL GR CAL	1439	2460
FDC GR CAL	487	1454





GEODIP	1776	1970
HDT	1763	1970
HDT	1969	2460
ISF SON GR SP	213	2460
LSS GR	487	1454
LSS GR	1751	1965
MECH PROP LOG	1764	1960
MECH PROP LOG	1765	1960
MLL MC CAL	1969	2460
NGS	1765	2457
TDT	80	1735
VELOCITY	0	0

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	213.0	36	214.0	0.00	LOT
SURF.COND.	20	488.0	26	504.0	0.00	LOT
INTERM.	13 3/8	1441.0	17 1/2	1456.0	0.00	LOT
INTERM.	9 5/8	1765.0	12 1/4	1780.0	0.00	LOT
LINER	7	1969.0	8 1/2	1970.0	0.00	LOT
OPEN HOLE		2462.0	6	2462.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
214	1.05			waterbased	
504	1.10			waterbased	
1288	1.19			waterbased	
1456	1.24			waterbased	
1554	1.49			waterbased	
1853	1.82	42.0		waterbased	
2158	1.76	43.0		waterbased	
2440	1.70	49.0		waterbased	
2462	1.83	52.0		waterbased	



Trykkplott

Porertrykksdataene kommer fra logging i brønnen hvis ingen annen kilde er oppgitt. I noen brønner der trykk ikke er logget, er det brukt informasjon fra formasjonstester eller brønnspark. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
424 Formation pressure (Formasjonstrykk)	pdf	0.21

