



Generell informasjon

Brønnbane navn	34/7-1
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	SNORRE
Funn	34/4-1 Snorre
Brønn navn	34/7-1
Seismisk lokalisering	SG-8231 - 125 SP. 200
Utvinningstillatelse	089
Boreoperatør	Saga Petroleum ASA
Boretillatelse	415-L
Boreinnretning	VILDKAT EXPLORER
Boredager	77
Borestart	09.05.1984
Boreslutt	24.07.1984
Plugget og forlatt dato	24.07.1984
Frigitt dato	24.07.1986
Publiseringsdato	26.10.2009
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	LATE TRIASSIC
1. nivå med hydrokarboner, formasjon.	LUNDE FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	328.0
Totalt målt dybde (MD) [m RKB]	2905.0
Totalt vertikalt dybde (TVD) [m RKB]	2905.0
Maks inklinasjon [°]	1.5
Temperatur ved bunn av brønnbanen [°C]	105
Eldste penetrerte alder	LATE TRIASSIC
Eldste penetrerte formasjon	LUNDE FM
Geodetisk datum	ED50



NS grader	61° 28' 21.8" N
ØV grader	2° 13' 25.55" E
NS UTM [m]	6815851.93
ØV UTM [m]	458640.58
UTM sone	31
NPDID for brønnbanen	111

Brønnhistorie

General

The wildcat 34/7-1 was drilled on the E-structure northeast in block 34/7, on a location ca 9 km south-south west of the 34/4-1 Snorre Discovery well in the northern North Sea. The continuation of this structure was explored by well 34/4-4. The main objective of 34/7-1 was Late Triassic sandstones, which proved hydrocarbon bearing in 34/4-1 and 34/4-4.

Operations and results

Well 34/7-1 was spudded with the semi-submersible installation Vildkat on 9 May 1984 and drilled to TD at 2905 m in the Late Triassic Lunde Formation. The 26" hole was drilled and logged first as a 17 1/2" pilot hole to 1106 m as a precaution against shallow gas then opened up to 26" by using underreamer. Tight spots occurred in the 26" hole section. In the 17 1/2" hole the string got stuck at 1274 m. The string had to be backed off and was fished out of the hole. Some tight spots occurred in this section too. When running the 9 5/8" casing, lost returns were experienced three times and the casing was pulled out of the hole. A velocity log was run, and the well was plugged back to 2640 m by setting two cement plugs and the 9 5/8" casing was landed at 2632 m. The well was drilled with seawater and bentonite down to 1106 m and with polymer/KCl mud from 1106 m to TD.

The Tertiary and Cretaceous sections were mainly composed of claystones, with sand development in lower the Pliocene and in the Late Miocene. The Triassic consisted of sandstones alternating with siltstones, claystones and minor marl.

A major unconformity is observed at 2392 m between the Late Triassic and the Lower Cretaceous. Apart from this, four other unconformities are observed in the well, one in Cretaceous, between Albian and Coniacian, one between the Latest Maastrichtian and Late Paleocene, one between Late Eocene and Early Oligocene and one between Late Oligocene and Late Miocene. Hydrocarbons were encountered in the Triassic sandstones (Lunde Formation) from 2392 down to an OWC at 2586 m. The reservoir comprised a number of sandstones with an average porosity of 23.2% and an average water saturation of 36%. The net pay thickness is 93 m.

The entire Triassic reservoir section from 2397 to 2623 m was cored in 10 cores with 97% recovery. Three RFT-chambers containing pressurized reservoir oil (2398 m, 2497 m and 2579 m) and one RFT-chamber containing water and mud filtrate (2593 m) were collected in the well.

The well was permanently abandoned on 24 July 1984 as an oil appraisal.

Testing

Three drill stem tests were performed in the oil bearing section of the Lunde Formation. All three tests produced oil.



Three drill stem tests were carried out in the oil zone of this reservoir, intervals (DST1), (DST2) and (DST3).

DST1 produced from the interval 2574.0 - 2581.5 m. During the main flow period this test produced 897 Sm³/day through an 11 mm choke with a wellhead pressure of 186 bar. The GOR was measured to 84 Sm³/Sm³ at separator conditions of 44 bar and 43 deg C. During this flow the bottom hole temperature reached 96.1 deg C and the reservoir pressure was measured to 388.4 bar. The well produced clean oil with no water or sand after the initial clean up.

DST2 produced from the interval 2455.0 - 2567.0 m. During the main flow period the well produced 509 Sm³/day through a 9.5 mm choke, with a wellhead pressure of 167 bar. The GOR was measured to 80 Sm³/Sm³ at separator conditions of 46 bar and 31 deg C. During this flow the bottom hole temperature reached 92.8 deg C. The well produced clean oil with no water or sand after it had cleaned up.

DST3 produced from the interval 2409.7 - 2416.5 m. During the main flow period the well produced 1606 Sm³/day through a 17.5 mm choke, with a wellhead pressure of 146 bar. The GOR was measured to 60 Sm³/Sm³ at separator conditions of 72 bar and 63 deg C. During this flow the bottom hole temperature reached 91.7 deg C. The well produced clean oil with no water or sand after it had cleaned up.

The bubble point pressures ranged from 174 to 182 bar, representing crude samples from the lower and the upper interval tested respectively (Ref. temp. 92-96 deg C). The dead oil density was 0.83 g/cm³, the gas gravity 0.93 (air = 1), the oil formation volume factor 1.47 Rm³/Sm³ and the solution gas-oil-ratio in the range of 144-157 Sm³/Sm³.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
480.00	2903.00

Borekaks tilgjengelig for prøvetaking?	YES
--	-----

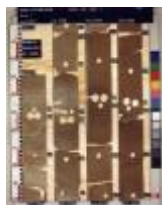
Borekjerter i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2394.0	2409.5	[m]
2	2412.0	2432.9	[m]
3	2435.0	2463.0	[m]
4	2463.0	2490.0	[m]
5	2490.0	2518.0	[m]
6	2518.0	2545.0	[m]
7	2545.0	2573.1	[m]
8	2573.0	2594.0	[m]
9	2595.0	2604.3	[m]
10	2605.0	2623.0	[m]



Total kjerneprøve lengde [m]	222.8
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2397-2401m



2401-2405m



2405-2409m



2409-2415m



2415-2419m



2419-2423m



2423-2427m



2427-2431m



2431-2437m



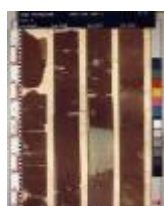
2437-2442m



2441-2444m



2445-2448m



2449-2453m



2453-2456m



2457-2461m



2461-2464m



2465-2468m



2469-2473m



2473-2477m



2477-2481m



2481-2485m



2485-2489m



2489-2493m



2493-2497m



2497-2501m



2501-2505m



2505-2509m



2509-2513m



2513-2516m



2517-2521m



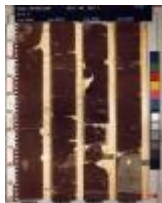
2521-2525m



2525-2528m



2529-2533m



2533-2537m



2537-2541m



2541-2545m



2545-2548m



2549-2553m



2553-2557m



2557-2561m



2561-2565m



2565-2569m



2569-2573m



2573-2577m



2577-2580m



2581-2585m



2585-2588m



2589-2593m



2593-2598m



2598-2601m



2602-2606m



2606-2610m



2610-2614m



2614-2618m



2618-2622m



2622-2623m

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
1166.0	[m]	SWC	RRI
1170.0	[m]	SWC	RRI
1190.0	[m]	C	RRI
1210.0	[m]	C	RRI
1220.0	[m]	DC	RRI
1240.0	[m]	DC	RRI
1250.0	[m]	DC	RRI
1270.0	[m]	DC	RRI
1280.0	[m]	DC	RRI
1300.0	[m]	DC	RRI
1320.0	[m]	DC	RRI
1330.0	[m]	DC	RRI
1350.0	[m]	DC	RRI
1359.0	[m]	C	RRI
1370.0	[m]	DC	RRI
1390.0	[m]	DC	RRI
1410.0	[m]	DC	RRI
1420.0	[m]	DC	RRI
1438.0	[m]	DC	RRI
1450.0	[m]	DC	RRI
1460.0	[m]	DC	RRI
1480.0	[m]	DC	RRI
1510.0	[m]	DC	RRI
1520.0	[m]	DC	RRI
1540.0	[m]	DC	RRI
1550.0	[m]	DC	RRI
1570.0	[m]	DC	RRI
1580.0	[m]	DC	RRI
1610.0	[m]	DC	RRI



1630.0	[m]	DC	RRI
1640.0	[m]	DC	RRI
1660.0	[m]	DC	RRI
1670.0	[m]	DC	RRI
1838.0	[m]	SWC	RRI
1872.0	[m]	SWC	RRI
1886.0	[m]	DC	RRI
1905.0	[m]	SWC	RRI
1916.0	[m]	DC	RRI
1931.0	[m]	DC	RRI
1961.0	[m]	DC	RRI
1976.0	[m]	DC	RRI
1982.0	[m]	SWC	RRI
2006.0	[m]	DC	RRI
2036.0	[m]	C	RRI
2066.0	[m]	C	RRI
2070.0	[m]	SWC	RRI
2081.0	[m]	DC	RRI
2150.0	[m]	SWC	RRI
2186.0	[m]	SWC	RRI

Oljeprøver i Sökkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	DST1	2574.00	2581.00	OIL	01.07.1984 - 11:20	YES
DST	DST2	2467.00	2455.00	OIL	09.07.1984 - 13:00	YES
DST	DST3	2416.00	2409.00		15.07.1984 - 19:50	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
353	NORDLAND GP
1150	UTSIRA FM
1170	HORDALAND GP
1673	ROGALAND GP



1673	BALDER FM
1696	LISTA FM
1823	SHETLAND GP
1823	JORSALFARE FM
1933	KYRRE FM
2387	CROMER KNOLL GP
2387	MIME FM
2392	HEGRE GP
2392	LUNDE FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
111 1	pdf	1.07
111 2	pdf	2.34

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
111 01 WDSS General Information	pdf	0.25
111 02 WDSS completion log	pdf	0.25

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
111 01 34 7 1 Completion Report and Log	pdf	17.20

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2581	2574	11.0
2.0	2455	2467	9.5
3.0	2410	2417	17.5





Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningsstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0		18.000	36.000	
2.0				
3.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	35	720000	0.826		2000
2.0	509	40000	0.825		80
3.0	1815	126000	0.830		70

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BGL CST	1072	1848
CST	1102	1838
DLL MSFL GR	2370	2618
GR	0	478
ISF BHC GR	2610	2904
ISF LSS GR	1072	1852
ISF LSS GR	1841	2621
ISF LSS GR CST	477	1106
LDL CNL GR	1841	2905
LDL CNL GR	2370	2622
LDL GR	1072	1854
RFT	2394	2619
RFT	2580	2736
SHDT	1839	2905
VSP	477	2904

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	476.0	36	478.0	0.00	LOT
SURF.COND.	20	1070.0	26	1106.0	1.57	LOT



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 20.5.2024 - 11:52

INTERM.	13 3/8	1844.0	17 1/2	1870.0	1.92	LOT
INTERM.	9 5/8	2632.0	12 1/4	2649.0	0.00	LOT
OPEN HOLE		2905.0	12 1/4	2905.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
420	1.03	100.0		WATER BASED	10.05.1984
478	1.05	47.0	28.0	WATER BASED	10.05.1984
478	1.05	47.0	28.0	WATER BASED	10.05.1984
478	1.05	100.0		WATER BASED	10.05.1984
700	1.07	50.0	42.0	WATER BASED	10.05.1984
1037	1.14	45.0	30.0	WATER BASED	13.05.1984
1106	1.18	50.0	53.0	WATER BASED	20.05.1984
1106	1.16	52.0	55.0	WATER BASED	20.05.1984
1106	1.10	50.0	12.0	WATER BASED	16.05.1984
1106	1.14	50.0	31.0	WATER BASED	15.05.1984
1106	1.16	52.0	55.0	WATER BASED	20.05.1984
1106	1.10	50.0	12.0	WATER BASED	16.05.1984
1106	1.06	52.0	29.0	WATER BASED	16.05.1984
1106	1.18	50.0	53.0	WATER BASED	20.05.1984
1106	1.06	52.0	29.0	WATER BASED	16.05.1984
1422	1.20	56.0	24.0	WATER BASED	23.05.1984
1422	1.21	50.0	22.0	WATER BASED	25.05.1984
1422	1.15	47.0	18.0	WATER BASED	22.05.1984
1422	1.20	56.0	24.0	WATER BASED	23.05.1984
1422	1.21	50.0	22.0	WATER BASED	25.05.1984
1450	1.23	50.0	26.0	WATER BASED	25.05.1984
1763	1.37	50.0	26.0	WATER BASED	29.05.1984
1870	1.46	53.0	25.0	WATER BASED	29.05.1984
2067	1.51	57.0	26.0	WATER BASED	01.06.1984
2194	1.56	54.0	23.0	WATER BASED	04.06.1984
2194	1.54	56.0	23.0	WATER BASED	01.06.1984
2194	1.56	54.0	23.0	WATER BASED	04.06.1984
2394	1.64	55.0	14.0	WATER BASED	25.06.1984
2394	1.65	52.0	17.0	WATER BASED	25.06.1984
2394	1.65	46.0	16.0	WATER BASED	25.06.1984
2394	1.65	52.0	17.0	WATER BASED	25.06.1984



2394	1.65	46.0	16.0	WATER BASED	25.06.1984
2397	1.58	54.0	24.0	WATER BASED	04.06.1984
2412	1.63	55.0	23.0	WATER BASED	04.06.1984
2436	1.63	55.0	23.0	WATER BASED	06.06.1984
2436	1.63	55.0	23.0	WATER BASED	06.06.1984
2436	1.63	55.0	23.0	WATER BASED	06.06.1984
2475	1.63	55.0	23.0	WATER BASED	07.06.1984
2491	1.63	22.0	23.0	WATER BASED	08.06.1984
2532	1.63	22.0	23.0	WATER BASED	12.06.1984
2562	1.64	30.0	27.0	WATER BASED	12.06.1984
2591	1.64	30.0	27.0	WATER BASED	12.06.1984
2606	1.74	22.0	12.0	WATER BASED	02.07.1984
2606	1.74	50.0	28.0	WATER BASED	28.06.1984
2606	1.74	50.0	12.0	WATER BASED	29.06.1984
2606	1.74	22.0	12.0	WATER BASED	02.07.1984
2606	1.66	46.0	16.0	WATER BASED	27.06.1984
2606	1.74	50.0	28.0	WATER BASED	28.06.1984
2606	1.74	50.0	12.0	WATER BASED	29.06.1984
2623	1.64	30.0	27.0	WATER BASED	18.06.1984
2623	1.64	30.0	27.0	WATER BASED	14.06.1984
2623	1.64	30.0	27.0	WATER BASED	18.06.1984
2629	1.70	30.0	27.0	WATER BASED	18.06.1984
2650	1.65	46.0	16.0	WATER BASED	27.06.1984
2760	1.73	55.0	23.0	WATER BASED	18.06.1984
2838	1.73	52.0	20.0	WATER BASED	18.06.1984
2905	1.64	55.0	14.0	WATER BASED	22.06.1984
2905	1.76	62.0	23.0	WATER BASED	18.06.1984
2905	1.64	55.0	14.0	WATER BASED	22.06.1984

Tynnslip i Søkeldirektoratet

Dybde	Enhet
2615.50	[m]
2612.20	[m]
2602.70	[m]
2676.50	[m]
2757.30	[m]



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]
111 Formation pressure (Formasjonstrykk)	pdf	0.22

