Generell informasjon

Brønnbane navn	2/7-14
Type	EXPLORATION
Formål	APPRAISAL
Status	SUSPENDED
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	EKOFISK
Funn	2/4-2 Ekofisk
Brønn navn	2/7-14
Seismisk lokalisering	PS 562915 SP.116
Utvinningstillatelse	018
Boreoperatør	Phillips Petroleum Company Norway
Boretillatelse	221-L
Boreinnretning	HAAKON MAGNUS
Boredager	165
Borestart	09.08.1979
Boreslutt	20.01.1980
Frigitt dato	20.01.1982
Publiseringsdato	02.04.2007
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	PALEOCENE
1. nivå med hydrokarboner, formasjon.	EKOFISK FM
2. nivå med hydrokarboner, alder	LATE CRETACEOUS
2. nivå med hydrokarboner, formasjon	TOR FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	71.0
Totalt målt dybde (MD) [m RKB]	3390.0
Temperatur ved bunn av brønnbanen [°C]	124
Eldste penetrerte alder	LATE CRETACEOUS
Eldste penetrerte formasjon	TOR FM
Geodetisk datum	ED50
NS grader	56° 29' 20.3'' N

ØV grader	3° 14' 2.65'' E
NS UTM [m]	6260666.80
ØV UTM [m]	514414.24
UTM sone	31
NPDID for brønnbanen	116

Brønnhistorie

General

Well 2/7-14 was drilled to delineate the southern limits of the Ekofisk Field in the southern Norwegian North Sea. The primary target was the Danian limestone. It was anticipated that the proposed location would have a similar structural position as development well 2/4-A-3 and a comparable amount of Danian net pay. The secondary target was the Late Cretaceous limestone, which was untested on the southern nose of the Ekofisk Field.

Operations and results

Appraisal well 2/7-14 was spudded with the semi-submersible installation Haakon Magnus on 9 August 1979 and drilled to TD at 3390 m in Late Cretaceous limestone. The well was drilled with Bentonite/Flosal spud mud to 20" casing point at 609 m, with Seawater/Native solids mud from 609 m to 13 3/8" casing point at 1526 m, with Drispac/ Lignosulphonate dispersed, inhibitive mud from 1526 m to 9 5/8" casing point at 3068 m, and with Bentonite/ Lignite/Drispac low fluid loss mud from 3068 m to TD.

Top Paleocene was encountered at 3045 m. Top of the Danian Limestone was penetrated at 3146 m, 15 m low to prognosis, with 52 m of Danian net pay, compared to 86 m Danian net pay in well 2/4-A-3. The Danian reservoir pressures were found to be less than virgin Ekofisk pressures, evidence that the interval had been drained by the nearby well 2/4-A-3. The Late Cretaceous was encountered at 3257 m, 13 m low to prognosis. The section flowed oil with a large volume of associated water in DST 2.

A total of 119 m core was recovered in 13 cores from the Paleocene and Late Cretaceous in the interval 3123 - 3306 m. No fluid sample was taken on wire line.

The well was suspended on 20 January 1980 as an oil appraisal.

Testing

Five drill stem tests were made through perforations in the 7" liner.

DST 1 at 3346.7 - 3349.8 m in the Late Cretaceous Limestone recovered 12 m3 water cushion plus 21 m3 formation fluid (85% water, 15% oil and water emulsion).

DST 2 at 3261.4 - 3279.7 m in the Late Cretaceous Limestone produced in the final flow 227 Sm3 oil and 31430 Sm3 gas and 1445 m3 water /day on a 25.4 mm choke. The GOR was 139 Sm3/Sm3, the oil gravity was 30.4 deg API, and the gas gravity was 0.82.

DST 3 at 3225.7 - 3235.2 m in the lower Danian Limestone produced in the final flow 586516 Sm3 gas and 401 Sm3 water /day on a 20.6 mm choke.

DST 4 at 3189.5 - 3211.4 m in the middle Danian Limestone produced in the final flow 553 Sm3 oil and 86366 Sm3 gas with less than 1% water /day on a 15.1 mm choke. The GOR was reported to be 239 Sm3/Sm3, the oil gravity was 34.6 deg API, and the gas gravity was 0.682.

DST 5 at 3150.5 - 3168.7 m in the upper Danian Limestone produced in the final flow 76 Sm3 oil and 14368 Sm3 gas with 5% sediment and water /day on a 7.9 mm choke. The GOR was 190 Sm3/Sm3, the oil gravity was 32.9 deg API, and the gas gravity was 0.697.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
375.00	3386.00

Borekaks tilgjengelig for prøvetaking?	YES

Borekjerner i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	10240.0	10290.0	[ft]
2	10299.0	10342.0	[ft]
3	10358.0	10367.9	[ft]
4	10377.0	10400.0	[ft]
5	10400.0	10445.6	[ft]
6	10451.0	10455.0	[ft]
7	10476.0	10514.6	[ft]
8	10533.0	10557.0	[ft]
9	10600.0	10627.0	[ft]
10	10630.0	10654.8	[ft]
11	10745.9	10783.0	[ft]
12	10798.0	10817.0	[ft]
13	10819.0	10845.7	[ft]

Total kjerneprøve lengde [m]	113.6
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
10601.7	[ft]	C	OD
10604.6	[ft]	C	OD
10607.3	[ft]	C	OD
10607.7	[ft]	C	OD
10610.4	[ft]	C	OD
10612.3	[ft]	C	OD
10613.4	[ft]	C	OD
10614.4	[ft]	C	OD
10615.3	[ft]	C	OD
10617.6	[ft]	C	OD
10619.1	[ft]	C	OD
10622.2	[ft]	C	OD

10625.3	[ft]	C	OD
10631.1	[ft]	C	OD
10633.6	[ft]	C	OD
10636.2	[ft]	C	OD
10638.7	[ft]	C	OD
10644.3	[ft]	C	OD
10646.6	[ft]	C	OD
10649.7	[ft]	C	OD
10652.5	[ft]	C	OD
10652.6	[ft]	C	OD
10656.2	[ft]	C	OD
10658.7	[ft]	C	OD

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
96	NORDLAND GP
1783	HORDALAND GP
3002	ROGALAND GP
3002	BALDER FM
3018	SELE FM
3033	LISTA FM
3134	VÅLE FM
3146	SHETLAND GP
3146	EKOFISK FM
3257	TOR FM

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
116_01_WDSS_General_Information	pdf	0.13
116_02_WDSS_completion_log	pdf	0.21

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
116_01_2_7_14_Completion_log	pdf	2.28

116_01_2_7_14_Completion_Report	pdf	11.81
116_04_2_7_14_Core_analysis	pdf	15.17

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsventil størrelse [mm]
1.0	3321	3324	25.4
2.0	3236	3254	0.0
3.0	3200	3210	0.0
4.0	3164	3186	0.0
5.0	3125	3143	0.0

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0		14.000		
3.0				
4.0				
5.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0					
2.0	227	31000	0.874	0.820	139
3.0		59000			
4.0	553	86000	0.852	0.682	239
5.0	76	14000	0.861	0.697	190

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	92	3356
CBL GR	2896	3356
CBL VDL	3067	3354
CDM	3074	3383
CDM FIL	3074	3383

CNL	2894	3354
DLL MSFL	3074	3383
FDC CNL	3074	3383
ISF SONIC GR	61	3383
TEMP	2304	3341
VELOCITY	365	3383

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	123.0	36	126.0	0.00	LOT
SURF.COND.	20	340.0	26	354.0	1.42	LOT
INTERM.	13 3/8	1501.0	17 1/2	1516.0	2.08	LOT
INTERM.	9 5/8	3043.0	12 1/4	3053.0	1.66	LOT
LINER	7	3345.0	8 1/2	3365.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
123	1.68	24.0	5.7	WATER BASED	04.09.1989
123	1.68	23.0	5.7	WATER BASED	04.09.1989
123	1.60			WATER BASED	04.09.1989
145	1.60	23.0		WATER BASED	04.09.1989
291	1.60	22.0		WATER BASED	04.09.1989
1462	1.60	24.0		WATER BASED	04.09.1989
1462	1.60			WATER BASED	04.09.1989
1462	1.60	22.0		WATER BASED	04.09.1989
1462	1.60	22.0		WATER BASED	04.09.1989
1462	1.60	19.0		WATER BASED	04.09.1989
1462	1.60	18.0		WATER BASED	04.09.1989
1462	1.60			WATER BASED	04.09.1989

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
14001.00	[ft]
14002.00	[ft]

14003.00	[ft]
14004.00	[ft]
14005.00	[ft]
14006.00	[ft]
14007.00	[ft]
14008.00	[ft]
14009.00	[ft]
14010.00	[ft]
14011.00	[ft]
14012.00	[ft]
14013.00	[ft]
14014.00	[ft]
14015.00	[ft]
14016.00	[ft]
14017.00	[ft]
14018.00	[ft]
14019.00	[ft]
14020.00	[ft]
14021.00	[ft]
14022.00	[ft]
14023.00	[ft]

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]
116_Formation_pressure_(Formasjonstrykk)	PDF	0.22