



Generell informasjon





Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 14.5.2024 - 11:38

Brønnbane navn	2/4-10
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Funn	2/4-10
Brønn navn	2/4-10
Seismisk lokalisering	PS 031310 SP.65
Utvinningstillatelse	018
Boreoperatør	Phillips Petroleum Company Norway
Boretillatelse	94-L
Boreinnretning	ZAPATA EXPLORER
Boredager	69
Borestart	13.10.1973
Boreslutt	20.12.1973
Frigitt dato	20.12.1975
Publiseringsdato	02.04.2007
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	LATE CRETACEOUS
1. nivå med hydrokarboner, formasjon.	TOR FM
Avstand, boredekk - midlere havflate [m]	35.0
Vanndybde ved midlere havflate [m]	67.0
Totalt målt dybde (MD) [m RKB]	3418.0
Temperatur ved bunn av brønnbanen [°C]	114
Eldste penetrerte alder	LATE CRETACEOUS
Eldste penetrerte formasjon	TOR FM
Geodetisk datum	ED50
NS grader	56° 40' 41.6" N
ØV grader	3° 13' 21.7" E
NS UTM [m]	6281730.28
ØV UTM [m]	513645.42
UTM sone	31
NPDID for brønnbanen	254



Brønnhistorie

General

Wildcat well 2/4-10 was drilled on an anticlinal structure, 4.8 km long and 2.4 km wide, lying approximately 8 km northwest of the centre of the Tor Field. The Danian limestone was the expected pay zone, and if porosity was present, the Late Cretaceous Limestone could also be hydrocarbon bearing. Prognosed top Danian was at 3139 m (10300 ft) with planned TD at 3414 m (11200 ft).

Operations and results

Well 2/4-10 was spudded with the jack-up rig Zapata Explorer on 13 October 1973 and drilled to TD at 3418 m in the Late Cretaceous Tor Formation. The well was drilled and tested in 69 days, without significant technical problems. Deviation surveys were carried out down to 2451 m and the maximum deviation to this depth was 2 deg. The well was drilled with salt-water gel and Flosal down to 497 m, with Shale Trol from 497 to 2015 m, with Unical (chromium-lignosulphonate) from 2015 m to 2819 m, and with Unical and Ligcon (causticized lignite) from 2819 m to TD.

Top Danian limestone was encountered at 3162 m and top Late Cretaceous limestone at 3293 m. The Danian Limestone tested only small amounts of water and no oil, after acidization, on two drill stem tests. The Late Cretaceous Chalk produced oil, but with a very low GOR, and with a high amount of water, which made its commerciality questionable. These fluid characteristics were furthermore very different from the 2/4-7 fluids (Tor discovery) and indicated 2/4-10 to be on a separate structure from the Tor Field.

No cores were cut and no wire line fluid samples taken.

The well was permanently abandoned on 20 December 1973 as an oil discovery

Testing

Six DST's were conducted: DST 1 and DST 2 in the Late Cretaceous and DST 3 to DST 6 in the Danian limestone. The results given here are after acidization: DST 1 from 3304 - 3322 m flowed 583 Sm³ oil, 275 m³ water, and only 1150 Sm³ gas /day through a 24/64" choke. The oil gravity was 38.6 deg API and the GOR was as low as 2 Sm³/Sm³. DST 2 from 3304 - 3309 m flowed 122 sm³ oil, 285 m³ water, and 864 Sm³ gas /day. The oil gravity was 35.6 deg API and the GOR was reported to be 7 Sm³/Sm³. DST 3 from the interval 3255 - 3281 was aborted for technical reasons. DST 4 and 5 from the same interval failed to produce formation fluid to surface. DST 6 from 3182 - 3203 m flowed only water at a small and decreasing rate.

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
102	NORDLAND GP
1798	HORDALAND GP
3020	ROGALAND GP
3020	BALDER FM



3033	SELE FM
3079	LISTA FM
3111	VIDAR FM
3150	LISTA FM
3155	VÅLE FM
3162	SHETLAND GP
3162	EKOFISK FM
3293	TOR FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
254_1	pdf	0.60
254_2	pdf	2.40

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
254_01_WDSS_General_Information	pdf	0.26

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
254_01_2_4_10_Completion_Report_and_Completion_log	pdf	13.76
254_02_2_4_10_Drilling_Fluid_Summary	pdf	1.48
254_02_2_4_10_Mud_Program_and_Record	pdf	12.27
254_04_2_4_10_Cores_Geochemical_Characterization	pdf	7.34
254_05_2_4_10_Individual_well_report	pdf	13.76
254_05_2_4_10_Reservoir_Fluid_Study_DST_1_Flow_Period_4	pdf	1.19
254_05_2_4_10_Well_Testing	pdf	6.01

Borestrengtester (DST)





Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	3304	3322	9.5
2.0	3304	3309	25.4

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0	11.000		43.000	
2.0			31.000	

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	586	1180	0.834		2
2.0	122	864	0.846	0.856	7

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BHC	489	1230
BHC-C	1230	3411
CDM AP	2865	3414
CNL CCL	3038	3343
FDC	3002	3415
GR	102	489
IES	489	3411
PML	3002	3415
SNP	3002	3415
VELOCITY	489	3411

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	137.0	36	183.0	0.00	LOT
SURF.COND.	20	489.0	26	497.0	0.00	LOT
INTERM.	13 3/8	1223.0	17 1/2	1228.0	0.00	LOT



INTERM.	9 5/8	2443.0	12 1/4	2452.0	0.00	LOT
LINER	7	3418.0	8 1/2	3418.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
133	1.12			water based	
1193	1.36			water based	
1820	1.62			water based	
2452	1.70			water based	
3046	1.71			water based	
3418	1.71			water based	