Generell informasjon

Brønnbane navn	35/8-5 S
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	35/8-5
Seismisk lokalisering	BPN 9301M00 -inline 1984
Utvinningstillatelse	195
Boreoperatør	Norsk Hydro Produksjon AS
Boretillatelse	1063-L
Boreinnretning	DEEPSEA DELTA
Boredager	50
Borestart	01.06.2003
Boreslutt	20.07.2003
Frigitt dato	20.07.2005
Publiseringsdato	01.04.2010
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	SHOWS
Funnbrønnbane	NO
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	369.0
Totalt målt dybde (MD) [m RKB]	4000.0
Totalt vertikalt dybde (TVD) [m RKB]	3831.8
Maks inklinasjon [°]	37.1
Temperatur ved bunn av brønnbanen [°C]	138
Eldste penetrerte alder	MIDDLE JURASSIC
Eldste penetrerte formasjon	RANNOCH FM
Geodetisk datum	ED50
NS grader	61° 22' 40.5'' N
ØV grader	3° 39' 13.22'' E
NS UTM [m]	6805219.70
ØV UTM [m]	534934.95
UTM sone	31
NPDID for brønnbanen	4761

Brønnhistorie

General

Well 35/8-5 S was drilled on a location ca 15 km west of the Gjøa Field on the western margin of the Måløy Slope in the northern North Sea. The main objective was to test the presence and type of hydrocarbons in Oxfordian turbidites in the J10 Prospect. A secondary objective of the well was to test the hydrocarbon potential of the Brent Group Sandstones. The well was targeted in the W-segment of the prospect, close to the eastern boundary fault, in order to enable a possible sidetrack towards east and into the C-segment. To meet these criteria, the well was designed as a deviation well to follow the dip of the eastern boundary fault plane of the W-segment in a proper distance from the fault. Sidetracking was only to be performed in case of discovery in either the primary or the secondary target.

Operations and results

Wildcat well 35/8-5 S was spudded with the semi-submersible installation Deepsea Delta on June 1 2003 and drilled to TD at 4000 m (3831.8 m TVD) in the Middle Jurassic Rannoch Formation. It was discovered after spud that the spud position of the well was placed 105 m east of the planned spud location. The deviation was adjusted during drilling and the reservoir was penetrated within the planned target tolerance. The resulting well path was vertical down to 2315 m, and then deviated with variable inclination down to ca 3300 m, then keeping a fairly constant inclination of 36 deg throughout the last 700 m to TD. A drilling hazard was given due to possible water flow from over-pressured sand interval in the Skade Formation at 673.5 - 794 m. This sand was considerably thicker than prognosed. There was no overpressure in the interval, but two thinner sands above, at 570 m and 590 m, where water flow occurred, were over-pressured. As a result, the 20" casing was set at 550 m instead of at 1100 m as planned for, and this in turn led to a revision of the casing programme in general. As no commercial discovery was made, no sidetrack of the well into the C-segment was performed and the wire line logging programme was reduced by not including the CMR, MSCT, OBMI-DSI and VSP logs in the 8 1/2" section. There is a large difference (6.5 - 9 m) between drillers (LWD) depth and logger's depth in this well. The LWD depth is used as reference for lithostratigraphic tops. The well was drilled with spud mud down to 412 m, with NaCl Polymer mud from 412 m to 682 m, with KCl mud from 682 m to 1331 m, and with Versavert oil based mud from 1331 m to TD.

Several sand units were penetrated above the Jurassic target reservoirs. Within the Hordaland Group the Skade Formation (673.5 - 845 m), the Grid Formation (845 - 1091 m), and the Frigg Formation (1091 - 1338 m) were encountered. Within the Rogaland Group the Ty sand (1658 -1716.5 m) was encountered. The prognosed Oxfordian reservoir (Intra Heather Formation Sandstone) was encountered at 3326 m, but the reservoir quality was much poorer than expected. An about 20 m thick Callovian intra-Heather Formation turbidite sequence was encountered at 3570 m. This was not prognosed. The Brent Group reservoir was found as prognosed with the better reservoir sands found in the Tarbert (3830 - 3882 m) and Etive (3916 - 3964 m) Formations. The well did not prove any commercial hydrocarbons. The Oxfordian sandstone seemed to be oil filled, but due to tight reservoir it was not considered a discovery. The Brent Group reservoir zones were proven water filled with a clear water gradient from pressure data. Good oil shows were obtained in both the Oxfordian sandstone and in the Tarbert Formation.

There were taken 6 conventional cores, 4 in the Oxfordian sandstone and 2 in the Brent Group sandstone. Cores of the Oxfordian reservoir showed very poor reservoir quality, according to both grain size and cementation. No wire line fluid samples were taken.

The well was permanently abandoned on 20 July 2003 as a dry well.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
700.00	3999.00

Borekaks tilgjengelig for prøvetaking?	YES

Borekjerner i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3381.0	3382.5	[m]
2	3383.5	3401.6	[m]
3	3401.6	3415.0	[m]
4	3415.5	3443.3	[m]
5	3845.0	3856.3	[m]
6	3856.3	3883.5	[m]

Total kjerneprøve lengde [m]	99.2
Kjerner tilgjengelig for prøvetaking?	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
388	NORDLAND GP
682	HORDALAND GP
682	SKADE FM
854	GRID FM
1100	FRIGG FM
1347	ROGALAND GP
1347	BALDER FM
1394	SELE FM
1409	LISTA FM
1665	TY FM
1725	SHETLAND GP
1725	JORSALFARE FM
1886	KYRRE FM

2847	TRYGGVASON FM
3083	BLODØKS FM
3087	SVARTE FM
3104	CROMER KNOLL GP
3104	RØDBY FM
3158	ÅSGARD FM
3239	VIKING GP
3239	DRAUPNE FM
3334	HEATHER FM
3335	INTRA HEATHER FM SS
3840	BRENT GP
3840	TARBERT FM
3893	NESS FM
3926	ETIVE FM
3975	RANNOCH FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
4761	pdf	0.52

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
4761_1	pdf	2.71

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
4761_35_8_5_S_COMPLETION_DRILLING_REPORT	.PDF	2.15
4761_35_8_5_S_COMPLETION_GEOLOGICAL_REPORT	.PDF	3.65
4761_35_8_5_S_COMPLETION_LOG	.pdf	2.42

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
IPLT MDT	3258	4000
IPLT MDT	3258	3986
LWD - GR RES DIR SON DEN NEU	3265	4000
MWD - DIR	398	458
MWD - GR RES DIR PRES	458	1326
MWD - GR RES DIR PRES SON	1326	3265

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	458.0	36	458.0	0.00	LOT
SURF.COND.	20	550.0	26	555.0	1.25	LOT
INTERM.	13 3/8	1320.0	17	1326.0	1.58	LOT
INTERM.	9 5/8	3258.0	12 1/4	3265.0	2.05	LOT
OPEN HOLE		4000.0	8 1/2	4000.0	1.80	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
412	1.25			water based	
458	1.25			water based	
629	1.10	11.0		water based	
682	1.30			water based	
946	1.11	14.0		water based	
1285	1.11	17.0		water based	
1331	1.25	26.0		water based	
2773	1.20	23.0		oil based	
2962	1.25	24.0		oil based	
3265	1.27	26.0		oil based	
3443	1.50	38.0		oil based	
3856	1.64	49.0		oil based	
3883	1.65	51.0		oil based	
4000	1.64	47.0		oil based	

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
3420.75	[m]
3419.42	[m]
3410.78	[m]
3410.46	[m]
3409.76	[m]
3395.72	[m]
3394.66	[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]
4761_Formation_pressure_(Formasjonstrykk)	pdf	0.22