Generell informasjon

Brønnbane navn	3/5-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	3/5-1
Seismisk lokalisering	SP 1290 line 75-15
Utvinningstillatelse	022
Boreoperatør	Norwegian Gulf Exploration Company AS
Boretillatelse	195-L
Boreinnretning	ODIN DRILL
Boredager	57
Borestart	03.05.1978
Boreslutt	28.06.1978
Frigitt dato	28.06.1980
Publiseringsdato	24.09.2004
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	DRY
Funnbrønnbane	NO
Avstand, boredekk - midlere havflate [m]	25.3
Vanndybde ved midlere havflate [m]	63.7
Totalt målt dybde (MD) [m RKB]	3426.0
Totalt vertikalt dybde (TVD) [m RKB]	3423.0
Temperatur ved bunn av brønnbanen [°C]	96
Eldste penetrerte alder	EARLY PERMIAN
Eldste penetrerte formasjon	ROTLIEGEND GP
Geodetisk datum	ED50
NS grader	56° 37' 25.78'' N
ØV grader	4° 25' 11.97'' E
NS UTM [m]	6276554.99
ØV UTM [m]	587130.72
UTM sone	31
NPDID for brønnbanen	290

Brønnhistorie

General

Exploration well 3/5-1 is located near the Coffee Soil Fault Complex on the northeast border of the Søgne Basin. The main objective of the well was to test the hydrocarbon potential of Rotliegendes sands on the crest of a tilted fault block, which was thought to mark the local eastern edge of the Central Graben of the North Sea. A secondary target was the basal Zechstein, where it was hoped that any dolomites present might have developed the secondary porosity exhibited in the Auk and Argyll Fields lying on the Western side of the Central Graben. There was no mappable closure at any post Zechstein horizon.

Operations and results

Wildcat well 3/5-1 was spudded with the semi-submersible installation Odin Drill on 3 May 1978 and drilled to TD at 3426m in basal conglomerates of the Permian Rotliegendes Group. While drilling at 2561 m the string twisted of at the jars, costing some six days lost time. A salt-water flow occurred while drilling at 2918 m, but was controlled by increasing the mud weight from 11.3 to 12.4 lb/gal. During abandonment 2.3 days were spent cutting and retrieveing of the well head. The well was drilled with seawater and hi-vis slurry down to 466.3 m and with lime/Drispac mud from 466.3 m to ca 2228 m from where it was gradually displaced to a Spersene/Resinex mud system. This mud was in turn displaced to a salt saturated mud from ca 3058 m after it became clear that massive salt was being drilled. The salt saturated mud was used to drill the rest of the well to TD.

Schlumberger's CPI log showed almost 23 m of reservoir quality sands in the Late Jurassic (average log porosity 24 %), and almost 259 m in the Rotliegendes (average log porosity 23 %). A thick salt section covered the Zechstein carbonates. It is probable that the salt-water flow at 2918 m came not from this salt but from the overlying Jurassic sandstones. Shows were recorded while drilling the Late Jurassic Kimmeridgian "Hot" Shale (Mandal Fm) from 2734 m to 2752 m. Here small quantities of methane, ethane, propane, and butane were recorded together with a slight, streaming, crush cut oil fluorescence. The Zechstein carbonates also contained trace amounts of oil but post-well geochemical analyses indicated that these hydrocarbons could have originated from the Spersene/Resinex mud system. Log analysis confirmed that all potential reservoir sections were water-saturated. No conventional cores were taken, but 21 sidewall cores were recovered from the Rotliegendes and Jurassic. No fluid samples were taken. The well was permanently abandoned on 28 June 1978 as a dry hole.

Testing

No drill stem test was performed

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
192.00	3724.00

Borekaks tilgjengelig for prøvetaking?	NO

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2788.8	[m]	SWC	APT
2791.2	[m]	SWC	APT
2794.9	[m]	SWC	APT
2795.5	[m]	SWC	APT
2808.9	[m]	SWC	APT
2813.2	[m]	SWC	APT
2827.8	[m]	SWC	APT
2834.5	[m]	SWC	APT
2880.0	[m]	SWC	APT
2892.4	[m]	SWC	APT
2894.8	[m]	SWC	APT
2897.3	[m]	SWC	APT

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
89	NORDLAND GP
993	HORDALAND GP
2114	ROGALAND GP
2114	BALDER FM
2131	SELE FM
2142	LISTA FM
2150	VÅLE FM
2202	SHETLAND GP
2202	EKOFISK FM
2223	TOR FM
2435	HOD FM
2617	BLODØKS FM
2647	HIDRA FM
2683	CROMER KNOLL GP
2683	TUXEN FM
2691	ÅSGARD FM
2734	TYNE GP
2734	MANDAL FM
2795	ELDFISK FM
2817	HAUGESUND FM

2902	ZECHSTEIN GP
2902	UNDIFFERENTIATED
3100	KUPFERSCHIEFER FM
3103	ROTLIEGEND GP

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
290	pdf	0.38

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
290_1_Migrated_crude_oil_detection_in_the_3_5_1_well	pdf	4.27
290_2_north_sea_source_and_migration_study_3_5_1_and_3_5_2	pdf	7.06
290_3	pdf	0.50
290_4_Geochemical_service_report_migrated_crude_oil_detect	pdf	4.27

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
290_01_WDSS_General_Information	pdf	0.21
290_03_WDSS_lithlog	pdf	0.08

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
290_1_Completion_report	pdf	16.86
290_3_Stratigraphic_tops	pdf	0.84
290_4_The_petrology_palynofacies_and_gran_density_of_SWC	pdf	28.80
290_2_Biostratigraphy_of_the_interval_630_-_11233	pdf	12.98

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	1402	1706
CBL	1432	2746
CDM	2765	3426
CDM AP	2769	3426
CDM PP	2769	3402
FDC CNL	2765	3426
ISF SONIC	166	481
ISF SONIC	467	1602
ISF SONIC	1591	2780
ISF SONIC	2765	3426
SRS	166	3426

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	165.0	36	166.0	0.00	LOT
SURF.COND.	20	466.0	26	480.0	0.00	LOT
INTERM.	13 3/8	1589.0	17 1/2	1603.0	0.00	LOT
INTERM.	9 5/8	2763.0	12 1/4	2779.0	0.00	LOT
OPEN HOLE		3425.0	8 1/2	3425.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
166	1.02	95.0		seawater	
480	1.16	55.0		seawater	
2201	1.25	48.0		seawater	
2560	1.26	49.0		seawater	
2955	1.48	63.0		seawater	
3425	1.48	45.0		seawater	