



General information

Wellbore name	16/8-2
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	16/8-2
Seismic location	CN 16-14 SP.84
Production licence	020
Drilling operator	BP Norway Limited U.A.
Drill permit	246-L
Drilling facility	SEDCO H
Drilling days	133
Entered date	03.04.1980
Completed date	13.08.1980
Release date	13.08.1982
Publication date	24.09.2004
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	30.0
Water depth [m]	72.5
Total depth (MD) [m RKB]	3585.0
Final vertical depth (TVD) [m RKB]	3583.0
Maximum inclination [°]	4.5
Bottom hole temperature [°C]	110
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	58° 20' 59.81" N
EW degrees	2° 24' 59.58" E
NS UTM [m]	6467967.71
EW UTM [m]	465848.41
UTM zone	31
NPDID wellbore	234



Wellbore history

**General**

Exploration well 16/8-2 is located in the Ling Depression south of the Utsira High and North of the Danish Norwegian Basin. The primary target was Late Jurassic sandstones; secondary target was the Danian/Late Cretaceous limestones and Rotliegendes/Devonian sandstones.

Operations and results

Well 16/8-2 was spudded from the semi-submersible installation Sedco H on 3 April 1980 and drilled to TD at 3585 m in Late Permian Zechstein evaporites. The well was drilled with bentonite and seawater down to 542 m, with a Spersene lignosulphonate/gypsum/CMC mud from 542 m to 2275 m, and with a salt saturated Drispac polymer/XC polymer/Polysal starch mud from 2275 m to TD.

Down to the setting of the 13 3/8" casing, the well progressed as programmed. However, the absence of the Triassic and the appearance of the Zechstein evaporites much shallower than expected caused the 9 5/8" casing to be set 474 metres higher than programmed. The drilling of the 8 1/2" hole commenced with a 1.45 SG salt saturated mud as programmed. Two runs with a turbine/Stratapac bit were made. However, on pulling out of the hole from 3519 m, tight hole was encountered and while attempting to work through this section, the drill string parted leaving 32.81 m of BHA at a depth of 3462 m. On running in with an overshot, the well was observed to be flowing. It was shut in but pressure continued to increase even after the appropriate mud weight increases had been effected. The mud weight was eventually raised to 2.03 SG creating a fine balance between sufficient fluid density and exceeding fracture pressure. The influx (thought to be from a Carnallite zone at approximately 3513 m) had an adverse effect on the mud properties causing the barite to settle out and reducing the pH to an acidic level. The magnesium and calcium sensitive Drispac polymer was replaced with the more tolerant 'XC Polymor1 to maintain the barite in suspension, and an inhibitor was added to prevent corrosion occurring. After many attempts at setting cement plugs and controlling well flow, the hole was plugged back into the 9 5/8" shoe, leaving 823 metres of drill pipe in the hole. Sidetracking was performed from 2325 m, drilling with a 1.82 SG mud until reaching 3481 m when again an influx was observed. The mud weight increased to 1.90 SG although full control of the influx was not gained until drilling beneath the zone.

Due to the uncertainty attached to the pore pressures in the Rotliegendes, it was decided not to drill into it with this high mud weight. The programme was therefore amended and the 7" liner was set at the base of the Zechstein with the intention of reducing the mud weight before drilling ahead. However due to further problems with cleaning out the 7" liner a decision was made to plug and abandon the well.

The well penetrated a relatively complete Tertiary and Cretaceous section including the secondary target Ekofisk, Tor, and Hod formations. No shows were observed in the chalk formations. The primary target Late Jurassic was also encountered but proved to consist of 51 m Draupne and 13.5 m Heather Formation shales intercalated by only stringers of sand. One of these, a thin Oxfordian sand was penetrated from 2247.5 to 2250 m, average porosity in this bed was approximately 30%. The Heather Formation was found unconformably on the Late Permian Zechstein salt. The further target of the Rotliegendes/Devonian sandstone was not accomplished due to the technical problems described above. Geochemical analyses showed that the only significant source rock was the Draupne Formation which had excellent potential for oil, but immature in the well location (%Ro in the range 0.45 - 0.50). No cores were cut and no fluid samples were taken. The well was permanently abandoned as dry on 13 August 1980.

Testing

No drill stem test was performed

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
210.00	3405.00

Cuttings available for sampling?	YES
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Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
103	NORDLAND GP
815	UTSIRA FM
975	HORDALAND GP
1525	ROGALAND GP
1525	BALDER FM
1571	SELE FM
1625	LISTA FM
1752	VÅLE FM
1763	SHETLAND GP
1763	EKOFISK FM
1795	TOR FM
1850	HOD FM
1900	CROMER KNOLL GP
1900	RØDBY FM
1945	SOLA FM
1972	ÅSGARD FM
2187	VIKING GP
2187	DRAUPNE FM
2238	HEATHER FM
2248	INTRA HEATHER FM SS
2250	HEATHER FM
2254	ZECHSTEIN GP

Composite logs

Document name	Document format	Document size [MB]
234	pdf	0.31



**Geochemical information**

Document name	Document format	Document size [MB]
234_1	pdf	1.60
234_2 the petroleum geochemistry of rock cuttings and sidewall core material from the north sea norwegian sectors well 16 8 2	pdf	1.14

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
234_01 WDSS General Information	pdf	0.11
234_02 WDSS completion log	pdf	0.23

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
234_16_8_2 COMPLETION REPORT AND LOG	PDF	1.28

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHCAL GR CAL	3150	3482
CST	100	1100
IEL BHCAL GP SP	50	539
IEL BHCAL GR SP	534	1622
IEL BHCAL GR SP CAL	1500	2287
LLD LLS MLL GR CAL	2035	3225
TEMP	0	0
TEMP	2220	3478

Casing and leak-off tests





Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	145.0	36	152.0	0.00	LOT
SURF.COND.	18 5/8	504.0	24	511.0	1.96	LOT
INTERM.	13 3/8	1666.0	17 1/2	1675.0	1.85	LOT
INTERM.	9 5/8	2245.0	12 1/4	2258.0	2.00	LOT
LINER	7	3585.0	8 1/2	3585.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
990	1.14	33.0		water	
1200	1.17	38.0		water	
1385	1.28	45.0		water	
1470	1.30	43.0		water	
1675	1.37	47.0		water	
1755	1.40	56.0		water	
2270	1.45	42.0		water	
2385	1.82	50.0		water	
3495	1.89	47.0		water	