

**General information**

Wellbore name	33/9-16
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	33/9-16
Seismic location	E86R91-line715 & xline1025
Production licence	172
Drilling operator	Mobil Exploration Norway INC
Drill permit	750-L
Drilling facility	ROSS ISLE
Drilling days	53
Entered date	28.11.1992
Completed date	20.01.1993
Release date	20.01.1995
Publication date	24.09.2003
Purpose - planned	APPRAISAL
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	22.0
Water depth [m]	227.0
Total depth (MD) [m RKB]	2870.0
Final vertical depth (TVD) [m RKB]	2870.0
Maximum inclination [°]	1.66
Bottom hole temperature [°C]	101
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	NESS FM
Geodetic datum	ED50
NS degrees	61° 23' 28.81" N
EW degrees	1° 57' 1.93" E
NS UTM [m]	6806990.41
EW UTM [m]	443937.38
UTM zone	31
NPDID wellbore	1801



Wellbore history

General

Exploration well 33/9-16 well is located 1.8 km south of the recently drilled 33/9-15 well. It is located just north of Statfjord East and south of Statfjord North in the southern part of License PL 172 updip from the 33/9-15 well and within the same seismically defined Intra Draupne deposits of Volgian age. The primary objective was to evaluate the hydrocarbon potential of the Late Jurassic (Volgian) Intra-Draupne Formation sandstone ("Munin sandstone unit") above the oil/water contact (2719 m subsea), found in the 33/9-15 well. The secondary objective was to evaluate the Middle Jurassic sands of the Brent Group.

Operations and results

Well 33/9-16 was spudded with the semi-submersible installation "Ross Isle" on 28 November 1992 and drilled to TD at 2870 m in the Middle Jurassic Ness Formation. The well was drilled water based with sea water and hi-vis pills down to 407 m, sea water and PHB/PAC from 407 m to 1106 m, and with KCl/PHPA/PHB/PAC mud from 1106 m to TD.

In the Upper Jurassic, the Intra Draupne Formation Sandstone was found as sandstones interbedded with thin siltstones. A 4.3 m zone with oil shows was encountered in the uppermost part of this unit based on shows while drilling and MWD. Three cores were cut in the Draupne Formation. Except for the top meter, the entire Intra Draupne sandstone unit was cored. The top 4 m of the core consisted of a sandstone with good porosity and oil shows.

In the Middle Jurassic Brent Group, no oil shows were observed in sandstones of the Tarbert and Ness Formations and as a result no cores were cut. An RFT and an MDT sample were taken at 2685 and 2684.5 m respectively and contained water and some gas but only traces of oil. A second MDT sample from 2713 m in the Intra Draupne Formation Sandstone contained water, slight traces of oil, and negligible gas. No wire line samples were taken in the Brent Group.

The well was permanently abandoned as a dry hole with oil shows on 20 January 1993.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
410.00	2870.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate



Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2681.0	2707.0	[m]
2	2707.0	2734.2	[m]
3	2734.2	2748.0	[m]

Total core sample length [m]	67.0
Cores available for sampling?	YES

Core photos

2681-2686m



2686-2691m



2691-2696m



2696-2701m



2701-2706m



2706-2707m



2707-2712m



2712-2717m



2717-2722m



2722-2727m



2727-2732m



2732-2734m



2734-2739m



2739-2744m



2744-2748m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
410.0	[m]	DC	MOBIL
430.0	[m]	DC	MOBIL
450.0	[m]	DC	MOBIL
470.0	[m]	DC	MOBIL
490.0	[m]	DC	MOBIL



510.0	[m]	DC	MOBIL
530.0	[m]	DC	MOBIL
550.0	[m]	DC	MOBIL
570.0	[m]	DC	MOBIL
590.0	[m]	DC	MOBIL
610.0	[m]	DC	MOBIL
630.0	[m]	DC	MOBIL
650.0	[m]	DC	MOBIL
670.0	[m]	DC	MOBIL
690.0	[m]	DC	MOBIL
710.0	[m]	DC	MOBIL
730.0	[m]	DC	MOBIL
750.0	[m]	DC	MOBIL
770.0	[m]	DC	MOBIL
790.0	[m]	DC	MOBIL
810.0	[m]	DC	MOBIL
830.0	[m]	DC	MOBIL
850.0	[m]	DC	MOBIL
870.0	[m]	DC	MOBIL
890.0	[m]	DC	MOBIL
910.0	[m]	DC	MOBIL
930.0	[m]	DC	MOBIL
950.0	[m]	DC	MOBIL
970.0	[m]	DC	MOBIL
990.0	[m]	DC	MOBIL
1010.0	[m]	DC	MOBIL
1025.0	[m]	DC	MOBIL
1040.0	[m]	DC	MOBIL
1050.0	[m]	DC	MOBIL
1060.0	[m]	DC	MOBIL
1070.0	[m]	DC	MOBIL
1080.0	[m]	DC	MOBIL
1090.0	[m]	DC	MOBIL
1100.0	[m]	DC	MOBIL
1120.0	[m]	DC	MOBIL
1140.0	[m]	DC	MOBIL
1160.0	[m]	DC	MOBIL
1180.0	[m]	DC	MOBIL
1200.0	[m]	DC	MOBIL
1220.0	[m]	DC	MOBIL



1240.0	[m]	DC	MOBIL
1260.0	[m]	DC	MOBIL
1280.0	[m]	DC	MOBIL
1300.0	[m]	DC	MOBIL
1320.0	[m]	DC	MOBIL
1330.0	[m]	DC	MOBIL
1340.0	[m]	DC	MOBIL
1350.0	[m]	DC	MOBIL
1360.0	[m]	DC	MOBIL
1380.0	[m]	DC	MOBIL
1400.0	[m]	DC	MOBIL
1420.0	[m]	DC	MOBIL
1440.0	[m]	DC	MOBIL
1460.0	[m]	DC	MOBIL
1480.0	[m]	DC	MOBIL
1500.0	[m]	DC	MOBIL
1520.0	[m]	DC	MOBIL
1540.0	[m]	DC	MOBIL
1560.0	[m]	DC	MOBIL
1580.0	[m]	DC	MOBIL
1600.0	[m]	DC	MOBIL
1620.0	[m]	DC	MOBIL
1640.0	[m]	DC	MOBIL
1660.0	[m]	DC	MOBIL
1670.0	[m]	DC	MOBIL
1680.0	[m]	DC	MOBIL
1700.0	[m]	DC	MOBIL
1720.0	[m]	DC	MOBIL
1730.0	[m]	DC	MOBIL
1740.0	[m]	DC	MOBIL
1760.0	[m]	DC	MOBIL
1770.0	[m]	DC	MOBIL
1790.0	[m]	DC	MOBIL
1810.0	[m]	DC	MOBIL
1830.0	[m]	DC	MOBIL
1850.0	[m]	DC	MOBIL
1870.0	[m]	DC	MOBIL
1890.0	[m]	DC	MOBIL
1900.0	[m]	DC	MOBIL
1920.0	[m]	DC	MOBIL



1940.0	[m]	DC	MOBIL
1960.0	[m]	DC	MOBIL
1980.0	[m]	DC	MOBIL
2000.0	[m]	DC	MOBIL
2020.0	[m]	DC	MOBIL
2040.0	[m]	DC	MOBIL
2060.0	[m]	DC	MOBIL
2080.0	[m]	DC	MOBIL
2100.0	[m]	DC	MOBIL
2120.0	[m]	DC	MOBIL
2140.0	[m]	DC	MOBIL
2160.0	[m]	DC	MOBIL
2180.0	[m]	DC	MOBIL
2200.0	[m]	DC	MOBIL
2220.0	[m]	DC	MOBIL
2240.0	[m]	SWC	MOBIL
2270.0	[m]	DC	MOBIL
2280.0	[m]	DC	MOBIL
2300.0	[m]	DC	MOBIL
2320.0	[m]	DC	MOBIL
2340.0	[m]	DC	MOBIL
2350.0	[m]	DC	MOBIL
2380.0	[m]	SWC	MOBIL
2400.0	[m]	DC	MOBIL
2409.0	[m]	DC	MOBIL
2418.0	[m]	DC	MOBIL
2425.0	[m]	DC	MOBIL
2433.0	[m]	DC	MOBIL
2442.0	[m]	DC	MOBIL
2451.0	[m]	DC	MOBIL
2460.0	[m]	DC	MOBIL
2469.0	[m]	DC	MOBIL
2469.0	[m]	DC	MOBIL
2478.0	[m]	DC	MOBIL
2487.0	[m]	DC	MOBIL
2496.0	[m]	DC	MOBIL
2505.0	[m]	DC	MOBIL
2514.0	[m]	DC	MOBIL
2520.0	[m]	SWC	MOBIL
2529.0	[m]	DC	MOBIL



2538.0	[m]	DC	MOBIL
2544.0	[m]	DC	MOBIL
2550.0	[m]	DC	MOBIL
2559.0	[m]	DC	MOBIL
2568.0	[m]	DC	MOBIL
2577.0	[m]	DC	MOBIL
2583.0	[m]	DC	MOBIL
2590.0	[m]	DC	MOBIL
2598.0	[m]	DC	MOBIL
2605.0	[m]	SWC	MOBIL
2613.0	[m]	DC	MOBIL
2622.0	[m]	DC	MOBIL
2628.0	[m]	DC	MOBIL
2635.0	[m]	SWC	MOBIL
2643.0	[m]	DC	MOBIL
2649.0	[m]	DC	MOBIL
2655.0	[m]	DC	MOBIL
2664.0	[m]	SWC	MOBIL
2668.0	[m]	SWC	MOBIL
2676.0	[m]	DC	MOBIL
2681.0	[m]	C	MOBIL
2682.0	[m]	C	MOBIL
2683.0	[m]	SWC	MOBIL
2684.0	[m]	C	MOBIL
2685.0	[m]	DC	MOBIL
2686.0	[m]	C	MOBIL
2687.0	[m]	C	MOBIL
2690.0	[m]	C	MOBIL
2693.0	[m]	C	MOBIL
2695.0	[m]	C	MOBIL
2698.0	[m]	C	MOBIL
2700.0	[m]	C	MOBIL
2703.0	[m]	C	MOBIL
2705.0	[m]	C	MOBIL
2707.2	[m]	C	MOBIL
2709.0	[m]	C	MOBIL
2711.0	[m]	C	MOBIL
2714.0	[m]	C	MOBIL
2717.0	[m]	C	MOBIL
2720.0	[m]	C	MOBIL



2723.0	[m]	C	MOBIL
2725.0	[m]	C	MOBIL
2727.0	[m]	C	MOBIL
2727.0	[m]	DC	MOBIL
2729.0	[m]	C	MOBIL
2732.0	[m]	C	MOBIL
2734.0	[m]	C	MOBIL
2735.0	[m]	C	MOBIL
2737.0	[m]	C	MOBIL
2739.0	[m]	C	MOBIL
2741.0	[m]	C	MOBIL
2742.0	[m]	C	MOBIL
2745.0	[m]	C	MOBIL
2747.0	[m]	C	MOBIL
2748.5	[m]	C	MOBIL
2757.5	[m]	SWC	MOBIL
2765.0	[m]	SWC	MOBIL
2775.0	[m]	DC	MOBIL
2784.0	[m]	DC	MOBIL
2793.0	[m]	DC	MOBIL
2802.0	[m]	DC	MOBIL
2811.0	[m]	DC	MOBIL
2817.0	[m]	DC	MOBIL
2826.0	[m]	DC	MOBIL
2829.0	[m]	DC	MOBIL
2832.0	[m]	DC	MOBIL
2835.0	[m]	SWC	MOBIL
2838.0	[m]	DC	MOBIL
2841.0	[m]	DC	MOBIL
2844.0	[m]	DC	MOBIL
2847.0	[m]	DC	MOBIL
2850.0	[m]	SWC	MOBIL
2859.0	[m]	DC	MOBIL
2865.0	[m]	SWC	MOBIL
2865.0	[m]	DC	MOBIL
2870.0	[m]	DC	MOBIL

Lithostratigraphy



Top depth [mMD RKB]	Lithostrat. unit
249	NORDLAND GP
1040	UTSIRA FM
1073	HORDALAND GP
1213	NO FORMAL NAME
1251	NO FORMAL NAME
1304	NO FORMAL NAME
1322	NO FORMAL NAME
1663	ROGALAND GP
1663	BALDER FM
1737	LISTA FM
1849	HEIMDAL FM
1878	LISTA FM
1901	VÅLE FM
1912	SHETLAND GP
1912	JORSALFARE FM
2187	KYRRE FM
2625	TRYGGVASON FM
2649	SVARTE FM
2654	CROMER KNOLL GP
2654	RØDBY FM
2662	SVARTE FM
2665	ÅSGARD FM
2680	MIME FM
2683	VIKING GP
2683	DRAUPNE FM
2684	INTRA DRAUPNE FM SS
2748	DRAUPNE FM
2753	HEATHER FM
2815	BRENT GP
2815	TARBERT FM
2826	NESS FM

Composite logs

Document name	Document format	Document size [MB]
1801	pdf	0.34





Geochemical information

Document name	Document format	Document size [MB]
1801_1	pdf	1.86
1801_2	pdf	1.97
1801_3	pdf	1.77
1801_4	pdf	1.05

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

Document name	Document format	Document size [MB]
1801_33_9_16_COMPLETION_REPORT_AND_LOG	pdf	71.56

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CST GR	2180	2865
CST GR	2210	2860
DIT BHC GR AMS LSS	1100	2020
DIT BHC LDT CNT NGT GR BHT	2174	2873
DIT BHC LDT GR AMS	1100	2186
DLL MSFL GR	2174	2870
MDT GR	2684	2713
MWD - GR RES DIR	249	2870
RFT GR	2684	2863
SHDT GR	2174	2874
VSP	400	2860

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	296.0	36	296.0	0.00	LOT
INTERM.	20	402.0	26	407.0	0.00	LOT





INTERM.	13 3/8	1100.0	17 1/2	1106.0	0.00	LOT
INTERM.	9 5/8	2172.0	12 1/4	2185.0	0.00	LOT
OPEN HOLE		2870.0	8 1/2	2870.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
302	1.07			WATER BASED	
382	1.07			WATER BASED	
407	1.10			WATER BASED	
681	1.12	4.0		WATER BASED	
1106	1.12	8.0		WATER BASED	
1214	1.37	8.0		WATER BASED	
1549	1.37	8.0		WATER BASED	
1891	1.49	49.0		WATER BASED	
2185	1.50	39.0		WATER BASED	
2234	1.50	24.0		WATER BASED	
2345	1.50	34.0		WATER BASED	
2546	1.50	34.0		WATER BASED	
2681	1.52	34.0		WATER BASED	
2707	1.52	34.0		WATER BASED	
2775	1.52	27.0		WATER BASED	
2870	1.52	31.0		WATER BASED	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2681.50	[m]
2687.77	[m]
2701.52	[m]
2713.60	[m]
2719.50	[m]
2721.78	[m]
2733.20	[m]
2741.45	[m]
2743.58	[m]

**Pressure plots**

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
1801 Formation pressure (Formasjonstrykk)	pdf	0.22

