General information

Wellbore name	25/1-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	FRIGG
Discovery	25/1-1 Frigg
Well name	25/1-1
Seismic location	line 69205-SP 162
Production licence	024
Drilling operator	Elf Petroleum Norge AS
Drill permit	53-L
Drilling facility	PENTAGONE 81
Drilling days	115
Entered date	30.03.1971
Completed date	22.07.1971
Release date	22.07.1973
Publication date	26.05.2009
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	EOCENE
1st level with HC, formation	FRIGG FM
Kelly bushing elevation [m]	24.0
Water depth [m]	101.0
Total depth (MD) [m RKB]	4570.0
Maximum inclination [°]	4.2
Bottom hole temperature [°C]	98
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	HUGIN FM
Geodetic datum	ED50
NS degrees	59° 53' 17.4'' N
EW degrees	2° 4' 42.7'' E
NS UTM [m]	6639470.41
EW UTM [m]	448427.57
UTM zone	31
NPDID wellbore	190

Wellbore history

General

Well 25/1-1 was drilled in the middle of block 25/1 in the Viking Graben, close to the UK border. Seismic surveys had defined structural closure at several levels in Mesozoic and into lower Tertiary horizons. At Paleocene level an "amoeboid" feature extending as much as 350 km2 with a vertical closure of 180 m was mapped. The primary objective of the well was to test the hydrocarbon potential of the Early Tertiary, interpreted to be a deltaic sand build-up. Secondary objective was Jurassic sandstones.

The well is Type Well for the Frigg, Svarte, Blodøks, Tryggvason, Kyrre, and Jorsalfare Formations.

Operations and results

Wildcat well 25/1-1 was spudded with the semi-submersible installation Pentagone 81 on 30 March 1971 and drilled to TD at 4570 m in Middle Jurassic Hugin Formation. The well was drilled with a seawater/LFC mud system down to TD.

Apart from sandy sections in the Nordland Group, the lithology down to top Frigg Formation at 1836 m was mainly claystones. The Frigg Formation sandstones had porosities in the range 30 to 40% with permeabilities of several Darcy. It was hydrocarbon bearing with a gas/oil contact at 1972 m, and an oil/water contact at 1992 m. Further shows were seen in a thin sand at 2470 m in the Lista Formation. An FIT sample recovered a small amount of oil from this sand. Oil shows were also recorded on limestone on core K5 in the Jorsalfare Formation. The Jurassic sequence penetrated by the well was mainly shales of the Viking Group and only 10 m of Hugin Formation sand at TD. No shows were reported from the Hugin Formation.

Six conventional cores were cut. Cores K1 to K3 were cut from 1868 to 1910 m in the Frigg Formation. K4 was cut from 2687 to 2696 m in the lower Lista Formation, while K5 and K6 were cut from 2826 to 2843 m and from 2993 m to 2997.5 m in the Jorsalfare Formation. Wire line fluid sampling was attempted at nine different depths. Hydrocarbon fluids were recovered from four levels: 1893 m (gas and filtrate), 1927.5 m (gas and filtrate), 1973.5 m (gas, filtrate and a small amount of oil), and 2471 m (filtrate and a small amount of oil).

The well was permanently abandoned on 22 July 1971 as an oil and gas discovery.

Testing

A production test was carried through perforations between 1920 and 1928 m on gas bearing Frigg Formation sands. The test produced 674000 Sm3 gas /day.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1120.00	4558.00

Cuttings available for sampling?	NO

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1871.0	1877.0	[m]
2	1891.5	1895.0	[m]
3	1900.0	1910.0	[m]
4	2687.0	2696.0	[m]
5	2826.0	2843.1	[m]
6	2993.0	2997.5	[m]

Total core sample length [m]	50.1
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1360.0	[m]	DC	
1370.0	[m]	DC	
1430.0	[m]	DC	
1450.0	[m]	DC	
1490.0	[m]	DC	
1500.0	[m]	DC	
1780.0	[m]	DC	
1790.0	[m]	DC	
1830.0	[m]	DC	
1840.0	[m]	DC	
1876.0	[m]	C	IGS
2126.0	[m]	DC	
2140.0	[m]	DC	
2225.0	[m]	DC	
2245.0	[m]	DC	
2426.0	[m]	DC	
2445.0	[m]	DC	
2465.0	[m]	DC	
2526.0	[m]	DC	
2541.0	[m]	DC	
2601.0	[m]	DC	OD
2622.0	[m]	DC	OD
2640.0	[m]	DC	OD
2640.0	[m]	DC	

2657.0	[m]	DC	OD
2665.0	[m]	DC	
2679.0	[m]	DC	OD
2682.0	[m]	DC	
2690.0	[m]	C	IGS
2691.1	[m]	C	OD
2694.7	[m]	C	OD
2695.0	[m]	C	IGS
2720.0	[m]	DC	OD
2723.0	[m]	DC	
2740.0	[m]	DC	OD
2760.0	[m]	DC	OD
2778.0	[m]	DC	OD
2800.0	[m]	DC	OD
2829.3	[m]	C	OD
2830.1	[m]	C	OD
2831.9	[m]	C	OD
2833.7	[m]	C	OD
2835.5	[m]	C	OD
2837.3	[m]	C	OD
2839.1	[m]	C	OD
2840.9	[m]	C	OD
2842.7	[m]	C	OD
2860.0	[m]	DC	OD
2874.0	[m]	DC	OD
2882.0	[m]	DC	OD
2993.5	[m]	C	OD
2996.2	[m]	C	OD
3012.0	[m]	DC	OD
3039.0	[m]	DC	OD
3071.0	[m]	DC	OD
3103.0	[m]	DC	OD
3146.0	[m]	DC	OD
3174.0	[m]	DC	OD
3205.0	[m]	DC	OD
3226.0	[m]	DC	OD
3250.0	[m]	DC	OD
3276.0	[m]	DC	OD
3300.0	[m]	DC	OD
3327.0	[m]	DC	OD

3351.0	[m]	DC	OD
3378.0	[m]	DC	OD
3398.0	[m]	DC	OD
3426.0	[m]	DC	OD
3449.0	[m]	DC	OD
3473.0	[m]	DC	OD
3497.0	[m]	DC	OD
3501.0	[m]	DC	OD
3525.0	[m]	DC	OD
3553.0	[m]	DC	OD
3577.0	[m]	DC	OD
3601.0	[m]	DC	OD
3625.0	[m]	DC	OD
3649.0	[m]	DC	OD
3676.0	[m]	DC	OD
3696.0	[m]	DC	OD
3731.0	[m]	DC	OD
3751.0	[m]	DC	OD
3772.0	[m]	DC	OD
3800.0	[m]	DC	OD
3828.0	[m]	DC	OD
3858.0	[m]	DC	OD
3878.0	[m]	DC	OD
3900.0	[m]	DC	OD
3924.0	[m]	DC	OD
3952.0	[m]	DC	OD
3976.0	[m]	DC	OD
3996.0	[m]	DC	OD
4024.0	[m]	DC	OD
4052.0	[m]	DC	OD
4076.0	[m]	DC	OD
4100.0	[m]	DC	OD
4124.0	[m]	DC	OD
4152.0	[m]	DC	OD
4176.0	[m]	DC	OD
4196.0	[m]	DC	OD
4228.0	[m]	DC	OD
4248.0	[m]	DC	OD
4300.0	[m]	DC	OD
4356.0	[m]	DC	OD

4404.0	[m]	DC	OD
4452.0	[m]	DC	OD
4504.0	[m]	DC	OD
4524.0	[m]	DC	OD
4558.0	[m]	DC	OD

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST		0.00	0.00	WATER	06.07.1971 - 00:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
125	NORDLAND GP
731	HORDALAND GP
1836	FRIGG FM
2115	ROGALAND GP
2115	BALDER FM
2145	INTRA BALDER FM SS
2195	HERMOD FM
2218	SELE FM
2228	HERMOD FM
2245	HEIMDAL FM
2389	LISTA FM
2711	SHETLAND GP
2711	JORSALFARE FM
2997	KYRRE FM
3582	TRYGGVASON FM
3790	BLODØKS FM
3807	SVARTE FM
3995	CROMER KNOLL GP
3995	RØDBY FM
4065	SOLA FM
4135	ÅSGARD FM
4203	VIKING GP

4203	DRAUPNE FM
4280	HEATHER FM
4560	VESTLAND GP
4560	HUGIN FM

Geochemical information

Document name	Document format	Document size [MB]
190_1	pdf	12.04
190_2	pdf	0.61
190_3	pdf	0.60
190_4	pdf	0.29

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

Document name	Document format	Document size [MB]
190_01_WDSS_General_Information	pdf	0.16

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

Document name	Document format	Document size [MB]
190_00_25_1_1_Completion_Log	pdf	2.44
190_00_25_1_1_Completion_Report	pdf	0.52
190_00_25_1_1_Core_description_report	PDF	0.33
190_00_25_1_1_Core_Photos	PDF	60.60
190_00_25_1_1_FIT_1_Test_report	PDF	0.66
190_00_25_1_1_Geochemical_report	PDF	20.81
190_00_25_1_1_Lithology	PDF	0.34
190_00_25_1_1_Micro_paleontology_report	PDF	4.79
190_00_25_1_1_Paleontology_report	PDF	3.51
190_00_25_1_1_Rock_evaluation	PDF	1.11
190_00_25_1_1_Sampling_Test report	PDF	0.70
190_00_25_1_1_Sedimentology_report	PDF	3.62
190_00_25_1_1_Synthetic_Seismograms	PDF	1.34
190_00_25_1_1_Well_log_Study	PDF	2.83

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	1920	1928	0.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0		674000			

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC GR	459	4453
CBL	350	4063
CBL GR	1200	2947
DLL	1835	4140
FDC GR	1835	2850
HDT	1835	4059
HRT	1000	2920
IES	460	2100
ML MLL	1835	2855
SNP	1835	2850
SRS	459	4453

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	165.0	36	165.0	0.00	LOT
SURF.COND.	20	459.0	26	490.0	0.00	LOT
INTERM.	13 3/8	1835.0	17 1/2	1846.0	0.00	LOT
INTERM.	9 5/8	2950.0	12 1/4	2960.0	0.00	LOT
PROD.	7	4062.0	8 1/2	4063.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
0	1.68	65.0		waterbased	
490	1.25	65.0		waterbased	
1846	1.30	60.0		waterbased	
2371	1.25	44.0		waterbased	
3195	1.65	56.0		waterbased	
4029	1.68	65.0		waterbased	
4455	1.90	60.0		waterbased	

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]
190_Formation_pressure_(Formasjonstrykk)	pdf	0.21