

**General information**

Wellbore name	34/10-17
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	GULLFAKS SØR
Discovery	34/10-17 Rimfaks
Well name	34/10-17
Seismic location	8213 - 177 SP 158
Production licence	050
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	364-L
Drilling facility	DEEPSEA BERGEN
Drilling days	137
Entered date	22.02.1983
Completed date	08.07.1983
Release date	08.07.1985
Publication date	30.09.2011
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
Kelly bushing elevation [m]	25.0
Water depth [m]	135.0
Total depth (MD) [m RKB]	3466.0
Final vertical depth (TVD) [m RKB]	3460.0
Maximum inclination [°]	10
Bottom hole temperature [°C]	120
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	61° 3' 58.93" N
EW degrees	2° 0' 50.78" E
NS UTM [m]	6770741.25
EW UTM [m]	446787.09



UTM zone	31
NPDID wellbore	5

Wellbore history

General

Well 34/10-17 was the first well drilled on the Beta structure in the SE segment of block 34/10, south-west of the Alpha-structure, which contained the Gullfaks Sør Field. The primary objective of the well was to evaluate possible hydrocarbon accumulations in the Middle Jurassic Brent sandstones. The secondary objectives were the Early Jurassic Dunlin and Statfjord sandstones.

Operations and results

Wildcat well 34/10-17 was spudded with the semi-submersible installation Deepsea Bergen on 22 February 1983 and drilled to TD at 3466 m in the Early Jurassic Statfjord Formation. The well was drilled down to 2687 m without special drilling problems. At 2687 m a heavy flow was observed after a drilling break. The well was shut in, and due to a plugged cement hose and kill line failsafe valve, about 200 hours were used to circulate out the influx, stabilize, clean up and condition the hole. Further technical failure and tight hole caused extensive time logging the 6" section, and the logging programme was reduced. The well was drilled with Seawater/gel spud mud down to 668 m and with seawater/gel/Lignosulphonate mud from 668 m to TD.

The Brent Group was encountered at 2685 m with hydrocarbon bearing sandstones in the Tarbert and Ness Formations. FMT pressures indicated a gas/oil contact at ca 2862 m, and an oil/water contact at ca 2914 m in the lower part of the Ness Formation. The logs indicated a total oil and gas net pay of 122.5 m with average porosity 22.5% and average water saturation 27%. Also the underlying water bearing Etive and Rannoch Formations of the Brent Group had good reservoir quality sandstones. The Dunlin and Statfjord sandstones were water bearing. Shows were recorded on cores down to 2947.5 m in the Rannoch Formation, and a geochemical core extract from 2923 m showed a chromatographic fingerprint no different from core extracts taken in the oil-zone. Otherwise no significant oil shows were seen in the well outside of the oil-bearing reservoir.

A total of 16 cores were cut continuously through the Brent reservoir section down to ca middle of the Rannoch Formation. The core-log depth match was generally good, but with minor deviations due to expansion of the cores after they were landed. The FMT tool was run for pressure samples in the Brent and Dunlin Group and in the Statfjord Formation. Segregated fluid samples were taken in the Brent Group at 2697 m (gas and condensate) and at 2889 m (oil).

The well was permanently abandoned on 8 July 1983 as an oil and gas discovery.

Testing

The well was tested from four zones in the Brent sand. One DST produced water, the other produced hydrocarbons.

DST 1 tested the interval 2934 to 2944 m and produced only water at a rate of 1024 Sm³/day through a 40/64" choke in the main flow. Maximum down hole temperature recorded in the test was 108.1 deg C.

DST 2 tested the interval 2880 to 2890 m and produced 545 Sm³ oil and 134000 Sm³ gas/day through a 28/64" choke in the main flow. The GOR was 246 Sm³/Sm³, the oil



density was 0.85 g/cm³, and the gas gravity was 0.74 (air = 1) with ca 1% CO₂ and 1 ppm H₂S. Maximum temperature recorded in the test was 106.0 deg C.

DST 3 tested the interval 2835 to 2845 m and produced 452 Sm³ condensate and 364000 Sm³ gas/day through a 32/64" choke in the third flow period. The GCR was 805 Sm³/Sm³, the condensate density was 0.78 g/cm³, and the gas gravity was 0.72 (air = 1) with trace CO₂ and no detectable H₂S. A somewhat higher oil rate and lower GOR was recorded on a 48/64" choke in the second flow period. Maximum temperature recorded in the test was 104.3 deg C.

DST 4 tested multiple intervals from 2754 to 2790.5 m and produced 320 Sm³ condensate and 428000 Sm³ gas/day through a 32/64" choke in the third flow. The GCR was 1338 Sm³/Sm³, the condensate density was 0.76 g/cm³, and the gas gravity was 0.71 (air = 1) with ca 1% CO₂ and 0.6 ppm H₂S. Maximum temperature recorded in the test was 101.2 deg C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
230.00	3465.00

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	2681.3	2699.3	[m]
2	2700.1	2718.1	[m]
3	2718.0	2736.4	[m]
4	2736.0	2754.0	[m]
5	2754.0	2771.3	[m]
6	2772.0	2790.0	[m]
7	2790.0	2808.5	[m]
8	2808.0	2826.2	[m]
9	2826.0	2840.3	[m]
10	2840.0	2858.0	[m]
11	2858.0	2875.7	[m]
12	2876.0	2894.3	[m]
13	2894.0	2909.7	[m]
14	2912.0	2930.0	[m]
15	2930.0	2948.3	[m]
16	2948.0	2965.8	[m]

Total core sample length [m]	282.5
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Cores available for sampling?	YES
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Core photos



2681-2688m



2688-2694m



2695-2699m



2700-2707m



2707-2714m



2714-2718m



2718-2725m



2725-2732m



2732-2736m



2736-2743m



2743-2750m



2750-2754m



2754-2761m



2761-2767m



2768-2771m



2772-2779m



2779-2786m



2786-2790m



2790-2797m



2797-2804m



2804-2808m



2808-2815m



2815-2822m



2822-2826m



2826-2833m



2833-2840m



2840-2840m



2840-2847m



2847-2854m



2854-2858m



2858-2865m



2858-2885m



2865-2872m



2872-2875m



2876-2883m



2883-2890m



2890-2894m



2894-2900m



2901-2907m



2908-2909m



2912-2919m



2919-2926m



2926-2930m



2930-2937m



2937-2944m



2944-2948m



2948-2955m



2955-2962m



2962-2965m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2681.0	[m]	C	RRI
2682.0	[m]	C	RRI
2683.0	[m]	C	RRI



2689.0	[m]	C	RRI
2690.0	[m]	C	RRI
2691.0	[m]	C	RRI
2692.0	[m]	C	RRI
2693.0	[m]	C	RRI
2700.0	[m]	C	RRI
2704.0	[m]	C	RRI
2712.0	[m]	C	RRI
2717.0	[m]	C	RRI
2718.0	[m]	C	RRI
2723.0	[m]	C	RRI
2724.0	[m]	C	RRI
2728.0	[m]	C	RRI
2733.0	[m]	C	RRI
2736.0	[m]	C	RRI
2737.0	[m]	C	RRI
2741.0	[m]	C	RRI
2744.0	[m]	C	RRI
2747.0	[m]	C	RRI
2750.0	[m]	C	RRI
2753.0	[m]	C	RRI
2756.0	[m]	C	RRI
2758.0	[m]	C	RRI
2761.0	[m]	C	RRI
2764.0	[m]	C	RRI
2766.0	[m]	C	RRI
2771.0	[m]	C	RRI
2772.0	[m]	C	RRI
2776.0	[m]	C	RRI
2779.0	[m]	C	RRI
2784.0	[m]	C	RRI
2791.0	[m]	C	RRI
2794.0	[m]	C	RRI
2796.0	[m]	C	RRI
2800.0	[m]	C	RRI
2803.0	[m]	C	RRI
2806.0	[m]	C	RRI
2808.0	[m]	C	RRI
2810.0	[m]	C	RRI
2812.0	[m]	C	RRI



2815.0	[m]	C	RRI
2823.0	[m]	C	RRI
2825.0	[m]	C	RRI
2827.0	[m]	C	RRI
2829.0	[m]	C	RRI
2831.0	[m]	C	RRI
2833.0	[m]	C	RRI
2842.0	[m]	C	RRI
2848.0	[m]	C	RRI
2853.0	[m]	C	RRI
2855.0	[m]	C	RRI
2859.0	[m]	C	RRI
2860.0	[m]	C	RRI
2863.0	[m]	C	RRI
2865.0	[m]	C	RRI
2869.0	[m]	C	RRI
2872.0	[m]	C	RRI
2874.0	[m]	C	RRI
2877.0	[m]	C	RRI
2878.0	[m]	C	RRI
2890.0	[m]	C	RRI
2891.0	[m]	C	RRI
2894.0	[m]	C	RRI
2897.0	[m]	C	RRI
2899.0	[m]	C	RRI
2902.0	[m]	C	RRI
2904.0	[m]	C	RRI
2907.0	[m]	C	RRI
2909.0	[m]	C	RRI
2913.0	[m]	C	RRI
2915.0	[m]	C	RRI
2918.0	[m]	C	RRI
2921.0	[m]	C	RRI
2924.0	[m]	C	RRI
2927.0	[m]	C	RRI
2934.0	[m]	C	RRI

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	TEST2	2880.00	2895.00		07.08.1983 - 00:00	YES
DST	TEST3	2835.00	2845.00		22.06.1983 - 00:00	YES
DST	TEST4	2754.00	2790.00	CONDE NSATE	28.06.1983 - 06:20	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
160	NORDLAND GP
895	UTSIRA FM
952	HORDALAND GP
1060	NO FORMAL NAME
1167	NO FORMAL NAME
1194	NO FORMAL NAME
1357	NO FORMAL NAME
1376	NO FORMAL NAME
1565	NO FORMAL NAME
1679	NO FORMAL NAME
1714	NO FORMAL NAME
1762	ROGALAND GP
1762	BALDER FM
1837	LISTA FM
1983	SHETLAND GP
1983	JORSALFARE FM
2295	KYRRE FM
2587	CROMER KNOLL GP
2587	ÅSGARD FM
2590	VIKING GP
2590	HEATHER FM
2685	BRENT GP
2685	TARBERT FM
2717	NESS FM
2934	ETIVE FM
2937	RANNOCH FM
3000	DUNLIN GP



3000	DRAKE FM
3108	COOK FM
3220	BURTON FM
3267	AMUNDSEN FM
3422	STATFJORD GP

Geochemical information

Document name	Document format	Document size [MB]
5_1	pdf	1.66
5_2	pdf	5.03
5_3	pdf	1.27

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

Document name	Document format	Document size [MB]
5_01_WDSS_General_Information	pdf	0.21
5_02_WDSS_completion_log	pdf	0.34

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

Document name	Document format	Document size [MB]
5_34_10_17_Analysis_of_core_samples	pdf	0.57
5_34_10_17_Analysis_of_oil_cores_and_coal_samples	pdf	0.65
5_34_10_17_Completion_log	pdf	2.55
5_34_10_17_Completion_Report	pdf	38.68
5_34_10_17_FMT_Report	pdf	0.43
5_34_10_17_Funnevalueringsrapport	pdf	1.49
5_34_10_17_Petrophysical_Evaluation	pdf	5.74
5_34_10_17_PVT_analysis_of_bottom_hole_sample	pdf	0.20
5_34_10_17_Routine_Core_Analysis	pdf	1.18
5_34_10_17_Source_Rock_Analysis	pdf	2.59
5_34_10_17_Stratigraphical_Paleontological_Final_Report	pdf	6.22
5_34_10_17_TBP_distillation_of_oil_DST2	PDF	0.27





5 34 10 17 Water Analysis DST1	pdf	0.36
5 34 10 17 Well Testing Report	pdf	3.02

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2934	2944	15.8
2.0	2881	2891	19.0
3.0	2835	2845	19.0
4.0	2754	2790	19.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				
3.0				
4.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0					
2.0	782	192000	0.820	0.740	245
3.0	734	530000	0.800	0.720	722
4.0	501	635000	0.760	0.710	1303

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CDL CNL GR CAL	221	3243
CORGUN	1901	2601
DIFL BHC GR SP	135	3453
DLL MLL GR CAL	2578	3014
FMT	2688	2980
FMT	2697	2697
FMT	2889	2889
HR DIP	305	2582
SP	2650	3012



**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	221.0	36	222.0	0.00	LOT
SURF.COND.	20	652.0	26	668.0	1.55	LOT
INTERM.	13 3/8	1902.0	17 1/2	1915.0	1.60	LOT
INTERM.	9 5/8	2580.0	12 1/4	2687.0	1.80	LOT
LINER	7	3015.0	8 1/2	3015.0	2.53	LOT
OPEN HOLE		3400.0	6	3466.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
255	1.06	41.0		waterbased	
668	1.19	32.0		waterbased	
1669	1.15	40.0		waterbased	
2206	1.26	50.0		waterbased	
2687	1.57	62.0		waterbased	
2912	1.60	61.0		waterbased	
3205	1.45	58.0		waterbased	
3464	1.50	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]
5 Formation pressure (Formasjonstrykk)	pdf	0.22

