General information

Wellbore name	35/11-11
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	FRAM
Discovery	35/11-8 S
Well name	35/11-11
Seismic location	MN 920196- INLINE 3530 & X-LINE 114
Production licence	090
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	927-L
Drilling facility	TRANSOCEAN LEADER
Drilling days	37
Entered date	16.04.1998
Completed date	22.05.1998
Release date	22.05.2000
Publication date	15.06.2005
Purpose - planned	APPRAISAL
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	23.5
Water depth [m]	359.0
Total depth (MD) [m RKB]	3225.0
Final vertical depth (TVD) [m RKB]	3224.0
Maximum inclination [°]	3.5
Bottom hole temperature [°C]	115
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	DRAKE FM
Geodetic datum	ED50
NS degrees	61° 6' 31.42'' N
EW degrees	3° 33' 49.08'' E
NS UTM [m]	6775189.73
EW UTM [m]	530381.59
UTM zone	31
NPDID wellbore	3356

Wellbore history

General

Well 35/11-11 is located east of the Fram Field and ca 17 km North of the Troll Field. The main objective for well 35/11-11 was to appraise the eastward extension of the Oxfordian Turbidites (Intra Heather Sandstone unit), in the H-East compartment of the Fram Field. Oil and gas were encountered in the discovery well 35/11-8 S and the extension toward the south was confirmed by the drilling of well 35/11-9, which encountered good reservoir quality and pressure communication between the two wells. Possible hydrocarbons in the Brent Group was a secondary objective, although the well was expected to penetrate the Brent Group in a down flank position below the OWC. A third objective was Paleocene sands to assess the reservoir- and production properties as a source for make-up water. This interval was supposed to be penetrated close to a high amplitude reflector and the presence of hydrocarbons could not be excluded.

Operations and results

Wildcat well 35/11-11 was spudded with the semi-submersible installation Transocean Leader on 16 April 1998 and drilled to TD at 3225 m in the Early Jurassic Drake Formation. Operations went without significant problems. The well was drilled with spud mud down to 1253 m and with AQUACOL/KCl/polymer mud and freshwater from 1253 m to TD. AQUACOL is a glycol mud system.

Two sands equivalent to the Heimdal and Ty Formations were encountered in the Paleocene. Both were water wet. A total of 119 m gross Late Jurassic reservoir sequence was penetrated in well 35/11-11 on the H East Structure. All massive sands have been interpreted as three individual turbidite deposits of Kimmeridgian/Volgian (Intra Draupne Sand), Oxfordian (Intra Heather Sand) and Callovian (Intra Heather Sand) age respectively. Oil shows were recorded on sandstones and siltstones throughout Late Jurassic, but all main target reservoirs were found water bearing and not in pressure communication with the H Structure. In the Brent Group the Ness and Etive Formations were found poorly developed with no shows of hydrocarbons. A total of nine conventional cores were cut in the Late - Middle Jurassic, recovering 181 m in all. No core was obtained from the Paleocene.

The well was permanently abandoned on 22 May as a well with shows.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1260.00	3225.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2550.5	2551.0	[m]
2	2552.0	2569.2	[m]
3	2570.0	2597.0	[m]
4	2597.5	2620.0	[m]
5	2621.0	2638.2	[m]
6	2638.3	2647.0	[m]
7	2695.5	2722.0	[m]
8	2723.0	2767.4	[m]
9	3085.0	3102.3	[m]

Total core sample length [m]	181.4
Cores available for sampling?	YES

Core photos


2550-2551m


2552-2557m


2557-2562m


2562-2567m


2567-2569m


2570-2575m


2575-2580m


2580-2585m


2585-2590m


2590-2595m


2595-2597m


2597-2602m


2602-2607m


2607-2612m


2612-2617m


2617-2620m


2621-2626m


2626-2631m


2631-2636m


2636-2638m


2638-2643m


2643-2646m


2695-2700m


2700-2705m


2705-2710m


2710-2715m


2715-2720m


2720-2721m


2723-2728m


2728-2733m


2733-2738m


2738-2743m


2743-2748m


2748-2753m


2753-2758m


2758-2763m


2763-2767m


3085-3090m


3090-3095m


3095-3100m


3100-3102m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2457.0	[m]	DC	PETROSTR
2467.0	[m]	DC	PETROS
2472.0	[m]	DC	PETROS
2482.0	[m]	DC	PETROS
2490.0	[m]	DC	PETROS
2505.0	[m]	DC	PETROS
2510.0	[m]	DC	PETROS
2520.0	[m]	DC	PETROS
2525.0	[m]	DC	PETROS
2535.0	[m]	DC	PETROS
2540.0	[m]	DC	PETROS
2545.0	[m]	DC	PETROS
2547.0	[m]	DC	PETROS
2550.0	[m]	DC	PETROS
2555.3	[m]	C	PETROS
2556.3	[m]	C	PETROS
2560.4	[m]	C	PETROS
2568.2	[m]	C	PETROS
2571.1	[m]	C	PETROS
2571.5	[m]	C	HYDRO
2571.8	[m]	C	HYDRO
2573.1	[m]	C	PETROSTR
2576.2	[m]	C	PETROSTR
2580.4	[m]	C	PETROS
2584.9	[m]	C	PETROS
2585.4	[m]	C	PETROS

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
383	NORDLAND GP
711	UTSIRA FM
763	HORDALAND GP
1466	ROGALAND GP
1466	BALDER FM

1523	SELE FM
1582	LISTA FM
1624	NO FORMAL NAME
1679	LISTA FM
1825	NO FORMAL NAME
1914	SHETLAND GP
1914	JORSALFARE FM
2056	KYRRE FM
2343	SVARTE FM
2420	CROMER KNOLL GP
2420	RØDBY FM
2469	VIKING GP
2469	DRAUPNE FM
2540	INTRA DRAUPNE FM SS
2569	HEATHER FM
2580	INTRA HEATHER FM SS
2616	HEATHER FM
2683	INTRA HEATHER FM SS
2727	HEATHER FM
3005	BRENT GP
3005	TARBERT FM
3008	NESS FM
3077	ETIVE FM
3085	RANNOCH FM
3119	OSEBERG FM
3177	DUNLIN GP
3177	DRAKE FM

Composite logs

Document name	Document format	Document size [MB]
3356	pdf	0.53

Geochemical information

Document name	Document format	Document size [MB]
3356_1	pdf	3.81

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

Document name	Document format	Document size [MB]
3356_35_11_11_COMPLETION_REPORT	pdf	17.28
3356_35_11_11_COMPOSITE_PLOT	pdf	2.30

Logs

Log type	Log top depth [m]	Log bottom depth [m]
FMS NGT AMS	2450	3175
HALS TLD HGNS DSI AMS	1245	3225
MDT GR AMS	1626	3167
MWD - GR RES DIR	1250	3225
VSP GR	1250	3150

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	444.0	36	444.0	0.00	LOT
SURF.COND.	13 3/8	1245.0	17 1/2	1245.0	1.63	LOT
OPEN HOLE		2550.0	12 1/4	2550.0	0.00	LOT
OPEN HOLE		3225.0	8 1/2	3225.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
345	1.20	15.0		WATER BASED	
450	1.33	32.0		WATER BASED	
1145	1.33	32.0		WATER BASED	
1253	1.03	11.0		WATER BASED	
1520	1.32	32.0		WATER BASED	
1891	1.25	22.0		WATER BASED	
2177	1.25	25.0		WATER BASED	
2505	1.26	30.0		WATER BASED	

2605	1.26	29.0		WATER BASED	
2648	1.28	28.0		WATER BASED	
2723	1.27	31.0		WATER BASED	
3225	1.27	30.0		WATER BASED	

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]
3356_Formation_pressure_(Formasjonstrykk)	pdf	0.23