



General information

Wellbore name	34/7-31
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Discovery	34/7-31
Well name	34/7-31
Seismic location	SG 9701& inline 1800/6456
Production licence	089
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	994-L
Drilling facility	SCARABEO 6
Drilling days	35
Entered date	10.03.2001
Completed date	13.04.2001
Release date	13.04.2003
Publication date	19.10.2006
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA DRAUPNE FM SS
Kelly bushing elevation [m]	26.0
Water depth [m]	207.0
Total depth (MD) [m RKB]	2650.0
Final vertical depth (TVD) [m RKB]	2650.0
Maximum inclination [°]	2.4
Bottom hole temperature [°C]	97
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	TARBERT FM
Geodetic datum	ED50
NS degrees	61° 18' 37.68" N
EW degrees	2° 3' 59.81" E
NS UTM [m]	6797888.38
EW UTM [m]	450009.18



UTM zone	31
NPDID wellbore	4214

Wellbore history

General

Well 34/7-31 was drilled in the Borg structure, which is situated on the western side of the Vigdis and Tordis Fields. The primary objective was to appraise the 34/7-23 Discovery in Intra-Draupne Formation Sandstone in this structure. Proven reserves, if sufficient, would most probably be produced through the Vigdis Field installations. Secondary objectives were Paleocene sand (Sele/Lista Formations) in a down-flank position from well 34/7-18 where these sands were oil-filled, and Early Cretaceous sands, found oil filled in well 34/7-21. The well was to be drilled 50 m into the Brent Group, which was expected to be water bearing at well location. In case of encountering an oil-filled Intra-Draupne sand thicker than 10 m TVD in the well, a sidetrack should be drilled, kicked off below the 13 3/8" casing to further appraise the Borg structure.

Operations and results

Well 34/7-31 was spudded with the semi-submersible installation Scarabeo 6 on 10 March 2001 and drilled to TD at 2650 m in the Middle Jurassic Tarbert Formation. A 9 7/8" pilot hole was drilled from seabed 233 m to 1150 m. Logs (MWD) presented from seabed 233 m to 1150 m were recorded in the 9-7/8" pilot hole. The 9 7/8" pilot hole was then opened to 36" and 30" casing run to 306 m. The 26" hole (using 26" hole opener) deviated from the original 9 7/8" pilot hole below 306 m and the two holes were ca 27 m apart at 1150 m. Well 34/7-31 was drilled with returns to Seabed down to 1150 m. Sampling started at 1170 m. The well was drilled with seawater and hi-vis pills down to 1150 m, and with Glydril KCl/polymer mud from 1150 m to TD. No gas related problems were experienced in the well. However, the MWD logs show possible gas levels at 280 m - 282 m, 372 m - 374,5 m and 558 m - 561 m.

The Intra-Draupne Formation Sandstone was encountered at 2470 with ca 35 meters net oil-bearing reservoir. Then, fourteen m of Draupne Formation shale was penetrated before entering the Heather formation. For the secondary objectives, both were water-filled and only Brent had significant sand (Tarbert Formation). Pressure points were taken with the MDT-tool in order to obtain formation pressures and fluid gradients from all reservoirs encountered in well 34/7-31. Especially the degree of depletion in the Intra-Draupne Sandstone was regarded as crucial information. The measured Intra-Draupne reservoir pressure was the same as the shut-in pressure in the Main Borg field. The gradient and reservoir fluid density was well defined, 0.69 g/cc or 0.067 bars/meter, and the reservoir pressure was measured to 307.04 bar at 2494.7 m. There was an ODT situation; hence the OWC is still not defined. Six high quality MDT oil samples were recovered from the Draupne Formation at 2496 m. Four of these were 250 cc single-phase samples. Two conventional cores were cut from 2472 m to 2506m in the Intra-Draupne Formation Sandstone.

The well bore was plugged back to the 13 3/8" casing and permanently abandoned on 13 April 2001 as an oil Appraisal well.

Testing

No drill stem test was performed

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1170.00	2650.00

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	2472.0	2499.3	[m]
2	2499.3	2505.7	[m]

Total core sample length [m]	33.7
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
233	NORDLAND GP
1057	UTSIRA FM
1062	HORDALAND GP
1268	NO FORMAL NAME
1301	NO FORMAL NAME
1470	NO FORMAL NAME
1482	NO FORMAL NAME
1700	ROGALAND GP
1700	BALDER FM
1738	LISTA FM
1891	SHETLAND GP
1891	JORSALFARE FM
2160	KYRRE FM
2458	CROMER KNOLL GP
2458	RØDBY FM
2460	MIME FM
2470	VIKING GP
2470	INTRA DRAUPNE FM SS
2506	DRAUPNE FM



2520	HEATHER FM
2602	BRENT GP
2602	TARBERT FM

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

Document name	Document format	Document size [MB]
4214 34 7 31 COMPLETION LOG	.PDF	7.64
4214 34 7 31 COMPLETION REPORT	.PDF	24.56

Logs

Log type	Log top depth [m]	Log bottom depth [m]
MDT	1842	2618
MSCT	1840	2641
MWD - GR RES DIR	233	2650
PEX DSI VSP	1700	2627
VSP	1690	2620

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	306.0	36	306.0	0.00	LOT
SURF.COND.	20	1144.0	26	1144.0	1.83	LOT
INTERM.	13 3/8	1779.0	17 1/2	1785.0	1.82	LOT
OPEN HOLE		2650.0	8 1/2	2650.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
233	1.05			WATER BASED	
306	1.05			WATER BASED	
688	1.05			WATER BASED	
905	1.05			WATER BASED	
1150	0.00			WATER BASED	





1785	1.48	18.0		WATER BASED	
2092	1.60	26.0		WATER BASED	
2505	1.62	27.0		WATER BASED	
2650	1.62	26.0		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]
4214 Formation pressure (Formasjonstrykk)	pdf	0.22

