

**General information**

Wellbore name	34/3-1 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Field	KNARR
Discovery	34/3-1 S Knarr
Well name	34/3-1
Seismic location	inline 5174 & crossline 3090
Production licence	373 S
Drilling operator	BG Norge AS
Drill permit	1180-L
Drilling facility	BREDFORD DOLPHIN
Drilling days	136
Entered date	28.04.2008
Completed date	10.09.2008
Release date	10.09.2010
Publication date	23.12.2010
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	EARLY JURASSIC
1st level with HC, formation	COOK FM
Kelly bushing elevation [m]	25.0
Water depth [m]	410.0
Total depth (MD) [m RKB]	4221.0
Final vertical depth (TVD) [m RKB]	4081.0
Maximum inclination [°]	24.3
Bottom hole temperature [°C]	142
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	61° 48' 46.49" N
EW degrees	2° 46' 47.16" E
NS UTM [m]	6853522.80



EW UTM [m]	488393.54
UTM zone	31
NPDID wellbore	5811

Wellbore history

General

The Jordbær well 34/3-1 S was drilled on the north eastern fringes of Tampen Spur on the Norwegian Continental Shelf. It was planned as a deviated exploration well with a dry hole TD case at 4228 m /4089 m TVD in the Jordbær Central target formation. Due to possible high pressure and temperature within the reservoir, the 8 1/2" section was planned to be drilled according to HPHT procedures.

Operations and results

Wildcat well 34/3-1 S was spudded with the semi-submersible installation Bredford Dolphin on 28 April 2008 and drilled to TD at 4221 m (4081.6 m TVD) in Late Triassic sediments of the Statfjord Formation. The well was drilled without significant technical problems down to TD in the 17 1/2" section at 2196 m. Due to wellbore instability and consequential stuck pipe at this point, the well was technically sidetracked (34/3-1 ST2) below the 20" casing shoe. The well was drilled with seawater and sweeps down to 968 m, with Performadril water based mud with GEM GP from 968 m to 2210 m, and with XP-07 oil based mud from 2210 m to TD.

The well drilled from the Early Jurassic Cromer Knoll Group directly into the Early Jurassic Dunlin Group at 3774 m. The Middle to Late Jurassic successions were missing in well position. The well found hydrocarbons in the Early Jurassic Cook Formation. No OWC was seen. After reaching TD a 7" liner was installed and a DST operation performed in the Cook formation, prior to plugging and sidetracking the well to start drilling of well 34/3-1A.

Two cores were cut in the Cook Formation. Core 1 was cut from 3868m to 3895m, with 23 m of core being recovered. A second core assembly was run and coring continued from 3895m to 3932m. No wire line fluid samples were taken.

The well was permanently abandoned on 10 September 2008 as an oil discovery.

Testing

One DST was performed in the upper Cook Formation at 3866.0 - 3950.5 m (3750.2 - 3832.5 m TVD). The test produced 42789 Sm³ gas and 1239 Sm³ oil /day through a 24/64" choke. The GOR was 35 Sm³/Sm³, the oil density was 0.798 g/cm³, and the gas gravity was 0.795 (air=1) with 2 ppm H₂S and 2% CO₂. The maximum temperature recorded in the final flow was 134 deg C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
980.00	4221.00

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	3868.0	3891.3	[m]
2	3895.0	3932.3	[m]

Total core sample length [m]	60.6
Cores available for sampling?	YES

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	OIL		YES
MDT		3950.48	3866.00	OIL		YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
436	NORDLAND GP
1421	UTSIRA FM
1464	NO FORMAL NAME
1494	HORDALAND GP
2002	ROGALAND GP
2002	BALDER FM
2030	SELE FM
2050	LISTA FM
2141	SHETLAND GP
2141	JORSALFARE FM
2314	KYRRE FM
3429	TRYGGVASON FM
3769	CROMER KNOLL GP
3769	MIME FM
3777	DUNLIN GP
3777	DRAKE FM



3866	COOK FM
3958	BURTON FM
4016	AMUNDSEN FM
4125	STATFJORD GP

Composite logs

Document name	Document format	Document size [MB]
5811	pdf	0.60

Geochemical information

Document name	Document format	Document size [MB]
5811_01_34_3_1S_gch_transfer_1	txt	0.00
5811_01_34_3_1S_gch_transfer_2	txt	0.00
5811_02_34_3_1S_gch_results_1	txt	0.11
5811_02_34_3_1S_gch_results_2	txt	0.04

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3866	3950	9.5

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				134

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	1239	42789	0.798	0.795	35

Logs





Log type	Log top depth [m]	Log bottom depth [m]
EWR P4 PWD DGR DDS BAT GP	2210	3780
LWD - DI	435	505
LWD - DI	505	968
LWD - DI GR RES PWD	435	966
PWD AGR EWR BAT DI	968	972
PWD AGR EWR DI	961	2210

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	501.0	36	501.0	0.00	LOT
SURF.COND.	20	961.0	26	968.0	1.70	LOT
INTERM.	13 3/8	2203.0	17 1/2	2210.0	1.80	LOT
INTERM.	9 5/8	3769.0	12 1/4	3777.0	2.04	LOT
LINER	7	4216.0	8 1/2	4221.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
505	1.03			Bentonite Spud Mud	
548	1.03			Bentonite Spud Mud	
874	1.04			Bentonite Spud Mud	
911	1.50	33.0		PERFORMADRIL	
920	1.28	23.0		PERFORMADRIL	
940	1.35	28.0		PERFORMADRIL	
961	1.35	25.0		PERFORMADRIL	
966	1.03			Bentonite Spud Mud	
1153	1.35	25.0		PERFORMADRIL	
1412	1.37	35.0		PERFORMADRIL	
1555	1.37	36.0		PERFORMADRIL	
1913	1.50	38.0		PERFORMADRIL	
1984	1.37	32.0		PERFORMADRIL	
2063	1.50	45.0		PERFORMADRIL	



2128	1.39	39.0		PERFORMADRIL	
2150	1.70	25.0		XP-07	
2187	1.70	30.0		XP-07	
2196	1.50	48.0		PERFORMADRIL	
2210	1.41	42.0		PERFORMADRIL	
2213	1.41	16.0		XP-07	
3090	1.45	20.0		XP-07	
3777	1.70	31.0		XP-07	
3800	1.87	38.0		XP-07	
3895	1.87	36.0		XP-07	
3932	1.87	35.0		XP-07	
3968	1.87	34.0		XP-07	
4221	1.87	35.0		XP-07	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
3920.08	[m]
3919.18	[m]
3912.68	[m]
3901.70	[m]
3901.40	[m]
3889.35	[m]
3881.70	[m]
3875.68	[m]
3869.67	[m]
3930.11	[m]