

**General information**

Wellbore name	17/12-4 A
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	17/12-1 Vette
Well name	17/12-4
Seismic location	Bream 3D-inline 1504 & crossline 3822
Production licence	407
Drilling operator	BG Norge AS
Drill permit	1264-L
Drilling facility	WEST ALPHA
Drilling days	37
Entered date	10.07.2009
Completed date	15.08.2009
Release date	15.08.2011
Publication date	15.08.2011
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRYNE FM
Kelly bushing elevation [m]	18.0
Water depth [m]	110.0
Total depth (MD) [m RKB]	3338.0
Final vertical depth (TVD) [m RKB]	2319.0
Maximum inclination [°]	92
Bottom hole temperature [°C]	84
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	BRYNE FM
Geodetic datum	ED50
NS degrees	58° 10' 37.58" N
EW degrees	3° 55' 11.05" E
NS UTM [m]	6448944.03
EW UTM [m]	554097.84



UTM zone	31
NPDID wellbore	6178

Wellbore history

General

Well 17/12-4 A was drilled as a geologic sidetrack to 17/12-4 on the Bream structure in the north-western part of the Egersund Basin of the North Sea. The principle objective of the well was to identify if the Bream prospect contained hydrocarbons in the Sandnes / Bryne formation, and ascertain commercial flow rates from a horizontal well in order to make decisions regarding a future development of the Bream Discovery.

Operations and results

Well 17/12-4 A was sidetracked on 10 July 2009 from below the 13 3/8" shoe at ca 1202 m in well 17/12-4. The well was drilled as a horizontal appraisal well with the semi-submersible installation West Alpha to TD at 3338 m (2319 m TVD) in the Middle Jurassic Bryne Formation. Deviation was at maximum 92 deg at TD. The well was drilled without significant technical problems, but it was not possible to get the liner to the toe of the well, only reaching 2795 m. This may have been partly due to not having the correct reamer shoe on board when picking up the liner. The sidetrack was drilled with Versatec DW oil based mud all through.

The Sandnes Formation came in at 2606 m (2286.7 m TVD) and confirmed a water-wet good reservoir sand within this Formation, as in the primary well. The Bryne Formation came in at 2666.6 m (2305.3 m TVD) and was drilled near-horizontally all through to TD, without penetrating below the main OWC found in the primary well. The Bryne Formation consists of several sand bodies and thin sands with interbedded mudstones and with coal layers in the upper part. Average porosities for the different reservoir units ranged from 17% to 22%. All sands were oil-bearing.

No cores were cut in the well. The well was logged while drilling. No wire line logs were run.

The well bore was plugged back for a second sidetrack and was permanently abandoned on 15 August 2009 as an oil appraisal well.

Testing

One drill stem test was performed. The Bryne reservoir was perforated underbalanced at 2694 - 2760 m (2313.4 ? 2324 m TVD). The well was opened on a 20/64" fixed choke for a sample flow period, well parameters allowed to stabilise and three sets of surface PVT samples and four bottom hole samples taken. On completion of sampling the well was beaned up to a 32/64" fixed choke size for 30 hrs with flow rates stabilising at 290 Sm³ oil and 11500 Sm³ gas/day. The stabilised GOR was 40 Sm³/Sm³. The CO₂ and H₂S levels were nil. The maximum temperature recorded in the main flow was 84 deg C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1230.00	3336.00



Cuttings available for sampling?	YES
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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

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
128	NORDLAND GP
486	HORDALAND GP
744	ROGALAND GP
744	BALDER FM
773	VÅLE FM
780	SHETLAND GP
780	EKOFISK FM
799	TOR FM
984	HOD FM
1208	BLODØKS FM
1216	CROMER KNOLL GP
1216	RØDBY FM
1337	ÅSGARD FM
2142	BOKNEFJORD GP
2142	FLEKKEFJORD FM
2175	SAUDA FM
2358	TAU FM
2438	EGERSUND FM
2606	VESTLAND GP
2667	BRYNE FM

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2694	2760	12.5



Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	24.000		16.000	84

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	400	11500			

Logs

Log type	Log top depth [m]	Log bottom depth [m]
LWD - ECOSCOPE	2579	3338
LWD - GR RES	1225	2579

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
INTERM.	9 5/8	2571.0	12 1/4	2579.0	0.00	LOT
LINER	7	2795.0	8 1/2	3338.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2795	1.20			wvjobreportmudch k.mudtyp	
3338	1.31	28.0		Versamud	
3338	1.20			wvjobreportmudch k.mudtyp	
3338	1.31	26.0		Versamud	