General information

Wellbore name	33/9-21 S
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	33/9-6 DELTA
Well name	33/9-21
Seismic location	inline 2216
Production licence	037 D
Drilling operator	Revus Energy ASA
Drill permit	1171-L
Drilling facility	MURCHISON A
Drilling days	87
Entered date	23.12.2008
Completed date	19.03.2009
Release date	19.03.2011
Publication date	19.03.2011
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
Kelly bushing elevation [m]	56.4
Water depth [m]	156.1
Total depth (MD) [m RKB]	6051.0
Final vertical depth (TVD) [m RKB]	3105.0
Maximum inclination [°]	70
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	ETIVE FM
Geodetic datum	ED50
NS degrees	61° 23' 48.26'' N
EW degrees	1° 44' 27.25'' E
NS UTM [m]	6807790.25
EW UTM [m]	432751.22
UTM zone	31
NPDID wellbore	5791

Wellbore history

General

The Delta discovery, made by well 33/9-6 in 1976, is situated approximately 4.5 km east of the Murchison platform. Well 33/9-6 had good oil shows, but was not tested due to mechanical problems. An oil down-to at 2998 m TVDSS corresponding to the top Mid Ness shale was seen in the well. The well had moderate reservoir quality within the Tarbert/Ness Formations, and excellent reservoir quality within the water-bearing Etive Formation.

Well 33/9-21 S was drilled to appraise the Brent Group reservoir quality and the oil-water contact as seen in well 33/9-6. If the reservoir quality was within expectations a horizontal sidetrack would be drilled to further evaluate the oil-bearing sands and eventually to undertake a test production.

The well was drilled deviated from the Murchison Platform on the UK side of the border, where the well name is UK211/19a-M75z.

Operations and results

Appraisal well 33/9-21 S was spudded from the Murchison Platform on 22 December 2008 and drilled to TD at 6051 m (3048 m TVD SS) in the Middle Jurassic Etive Formation. The well was drilled with Bentonite PAC mud down to 805 m, with KCl/glycol mud form 805 m to 1577 m, and with Versaclean oil based mud from 1577 m to TD.

Top target reservoir came in at 5867 m (2972 m TVD SS), 10 m low to prognosis. Hydrocarbons were encountered in the Tarbert, Ness and Etive formations with an OWC within the Etive sands at 3004 m TVD SS. Log interpretation confirmed the expected Brent Group reservoir quality as seen in well 33/9-6. A horizontal sidetrack was thus decided to further appraise the oil-bearing sands. Shows were reported as "no shows above OBM" throughout the well bore.

No cores were cut and no wire line fluid samples were taken. The well was logged on LWD only. The formation pressure was measured with the StethoScope tool.

The well was permanently abandoned on 19 March 2009 as an oil appraisal.

Testing

No drill stem test was performed.

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
213	NORDLAND GP
971	UTSIRA FM
1093	HORDALAND GP
2618	ROGALAND GP
2618	BALDER FM
2728	SELE FM

2846	LISTA FM
3056	VÅLE FM
3112	SHETLAND GP
5571	CROMER KNOLL GP
5571	RØDBY FM
5587	SOLA FM
5672	ÅSGARD FM
5702	MIME FM
5728	VIKING GP
5728	DRAUPNE FM
5813	HEATHER FM
5867	BRENT GP
5867	TARBERT FM
5903	NESS FM
5927	ETIVE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
MWD - DI GR RES APWD	483	5155
MWD - DI GR RES APWD NEU DEN SON	5155	6050

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	243.0	36	243.0	0.00	LOT
SURF.COND.	20	481.0	26	486.0	0.00	LOT
INTERM.	13 3/8	1570.0	17 1/2	1580.0	1.61	LOT
INTERM.	9 5/8	5144.0	12 1/4	5155.0	1.78	LOT
OPEN HOLE		6051.0	8 1/2	6051.0	1.78	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
506	0.00			seawater	
1577	1.17			KCL/Glycol	

5155	1.53			Versaclean	
6066	1.55			Versaclean	