General information

Wellbore name	6407/8-2
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Discovery	6407/8-2 (Tau)
Well name	6407/8-2
Seismic location	BPN 89-113(2D) & CROSSLINE SP 510
Production licence	158
Drilling operator	BP Norway Limited U.A.
Drill permit	796-L
Drilling facility	DYVI STENA
Drilling days	38
Entered date	19.10.1994
Completed date	25.11.1994
Release date	25.11.1996
Publication date	24.09.2003
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	EARLY JURASSIC
1st level with HC, formation	ÅRE FM
Kelly bushing elevation [m]	25.0
Water depth [m]	318.0
Total depth (MD) [m RKB]	1950.0
Final vertical depth (TVD) [m RKB]	1950.0
Maximum inclination [°]	1.1
Bottom hole temperature [°C]	76
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	GREY BEDS (INFORMAL)
Geodetic datum	ED50
NS degrees	64° 17' 0.63'' N
EW degrees	7° 31' 25.28'' E
NS UTM [m]	7129613.20
EW UTM [m]	428524.24
UTM zone	32
NPDID wellbore	2434

Wellbore history

General

The main objective of drilling well 6407/8-2 was to establish the presence, quality and fluid content of the Jurassic Åre Formation sandstones in the Tau prospect, about 9 km west of the Draugen Field. The underlying Triassic grey/red beds provided a secondary target.

Operations and results

Exploration well 6407/8-2 was spudded with the semi-submersible installation "Dyvi Stena" on 19 October 1994 and drilled to TD at 1950 m in the Triassic Grey Beds. The well was drilled with seawater and hi-vis pills down to 1140 m, with KCl polymer mud from 1140 m to 1733 m, and with a sized salt solids-free system from 1733 m to TD in the final 6" open hole.

The top of the Tau prospect reservoir section came in at 1733 m and the well confirmed oil and gas charge in the prospect. The reservoir quality in the Åre Formation was better than expected at this location. The hydrocarbon column encountered was close to the predicted minimum success case model. The drilling location was well chosen in revealing the extent of the different hydrocarbon phases in the structure. Further down-dip the gas cap could have been missed. The proportion of gas to oil, however, currently renders the discovery sub-commercial.

Discrepancies between actual and prognosed depths are interpreted as reflecting uncertainty in the velocity field. The failure of the larger success outcomes is attributed to trap failure, either through fault-seal failure or breaching by thief Ile sands in the hanging wall. It is clear that for this small- scale accumulation, distinguishing hydrocarbon phases is below seismic resolution. However, with wireline logs to calibrate seismic signature through gas, oil and water bearing reservoir sections the database for exploring adjacent prospects is excellent.

Three cores were cut in the 6" section from 1736 m to 1773 m in the Åre Formation. Core # 1 was cut from 1736 m -1744.8 m before jamming off on a coal stringer. At surface the core was found to contain a good reservoir sand with high oil content. Core # 2 was then cut from 1744.8 m to 1764 m and the assembly pulled at reduced tripping speeds to minimise the rate of gas expansion in the core. However the bottom 14m of core was not recovered and, as the sand was so un-consolidated as not to be able to support its own weight, the next coring assembly was limited to a 30ft barrel Core # 3 was cut from 1764 m -1774 m but only 1,95 m was recovered and, as this appeared water wet, it was decided to return to drilling. A wire line fluid sample was taken at 1738 m.

The well was permanently abandoned as an oil and gas discovery 25 November 1994.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1150.00	1950.00

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	1736.0	1744.8	[m]
2	1744.8	1750.8	[m]
3	1764.0	1766.0	[m]

Total core sample length [m]	16.8
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
343	NORDLAND GP
343	NAUST FM
746	KAI FM
809	HORDALAND GP
809	BRYGGE FM
1374	ROGALAND GP
1374	TARE FM
1438	TANG FM
1587	SHETLAND GP
1587	SPRINGAR FM
1710	VIKING GP
1710	SPEKK FM
1728	BÅT GP
1728	ÅRE FM
1847	GREY BEDS (INFORMAL)
1847	HEGRE GP

Composite logs

Document name	Document format	Document size [MB]
2434	pdf	0.21

Geochemical information

Document name	Document format	Document size [MB]
2434_1	pdf	1.81
2434_2	pdf	1.60

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

Document name	Document format	Document size [MB]
2434_6407_8_2_COMPLETION_LOG	pdf	1.38
2434_6407_8_2_COMPLETION_REPORT	pdf	17.84

Logs

Log type	Log top depth [m]	Log bottom depth [m]
EZSV CCL	585	585
FMT GR	1741	1741
FMT VPC GR	0	0
FMT VPC GR	1733	1904
FMT VPC GR	1734	1734
FMT VPC GR	1738	1738
FMT VPC GR	1741	1741
FMT VPC GR	1772	1772
HDIP GR	1730	1940
MAC ZDL CN SL	1730	1938
MAC ZDL SL	1184	1595
MAC ZDL SL	1595	1714
MLL DLL	1730	1943
MWD DPR - GR	350	1731
SWC GR	0	0
SWC GR	1753	1834
SWC GR	1753	1834
VSP	500	1930
ZDL CN GR	1730	1846

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	443.0	36	446.0	0.00	LOT
SURF.COND.	9 5/8	1135.0	12 1/4	1140.0	0.00	LOT
LINER	7	1731.0	8 1/2	1733.0	1.75	LOT
OPEN HOLE		1950.0	6	1950.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1733	1.25	50.0		WATER BASED	
1950	1.25	48.0		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]
2434_Formation_pressure_(Formasjonstrykk)	pdf	0.19