

General information

Wellbore name	7128/4-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link
Main area	BARENTS SEA
Discovery	7128/4-1 (Omd Vest)
Well name	7128/4-1
Seismic location	ST 9103-417 & SP. 288
Drilled in production licence	180
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	779-L
Drilling facility	ROSS RIG (2)
Drilling days	72
Entered date	17.12.1993
Completed date	26.02.1994
Release date	26.02.1996
Publication date	11.04.2003
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	LATE PERMIAN
1st level with HC, formation	RØYE FM
Kelly bushing elevation [m]	24.0
Water depth [m]	370.0
Total depth (MD) [m RKB]	2530.0
Final vertical depth (TVD) [m RKB]	2528.1
Maximum inclination [°]	4.8
Bottom hole temperature [°C]	82
Oldest penetrated age	PRE-DEVONIAN
Oldest penetrated formation	BASEMENT
Geodetic datum	ED50
NS degrees	71° 32' 27.33" N
EW degrees	28° 4' 54.08" E
NS UTM [m]	7938285.08
EW UTM [m]	538226.27
UTM zone	35
NPDID wellbore	2049

Wellbore history

General

Well 7128/4-1 is located in the Finmark Øst area. The main objective for the well was to test the potential for hydrocarbons in Visean sandstone on the "Omd Vest" structure. The secondary objective was to test the hydrocarbon potential, reservoir and trap possibilities of the Asselian - Sakmarian carbonates and the upper Permian succession.

Operations

Exploration well 7128/4-1 was spudded with the semi-submersible installation "Ross Rig" on 17 December 1993 and drilled to TD at 2530 m in pre-Devonian basement rocks, 27 m below base of the Early Carboniferous Soldogg Formation. The well was drilled with seawater and bentonite / CMC EHV spud mud down to 770 m and with GYP/PAC mud from 770 m to TD.

The well penetrated Quaternary, Tertiary, Triassic, Permian, and Carboniferous sediments. The Cretaceous and Jurassic sequences were not present. Gas chromatography readings during drilling and log evaluation indicated gas saturation in the primary target. The sandstone was very tight and therefore not production tested. However, the Late Permian spiculite was partly very porous and permeable with a gas cap over moveable oil. A GOC was indicated at 1575 m.

A total of five conventional cores were cut in the well 1574 m to 1577 m (Late Permian Røye Formation), 1814 m to 1837 m (Isbjørn and Ørn Formations of Early Permian age), 1837 m to 1865 m (Early Permian Ørn Formation), 2362 m to 2389.47 m (Early Carboniferous Soldogg Formation), and 2526 m to 2530 m (Pre-Devonian basement).

FMT wire line samples were obtained from three levels: 1572.7 m, 1576 m, and 1588.8 m. In the FMT samples taken at 1572.7 m, the 10-litre chamber contained 0.106 m³ of gas with an initial pressure of 8274 kPa. The 4-litre chamber contained 183 litre of gas, 0.5 ml of oil and 1380 ml of water/mud filtrate. Geco measured the density of the gas to 0.637 (air = 1). For the samples taken at 1576 m the 10 litre chamber contained 2.5 litre of oil with a density of 0.81 g/cm³, 0.190 m³ of gas and the total liquid (mud filtrate + oil) volume was 9.3 litre. The 4 litre chamber contained 63.5 litre of gas, 225 ml of oil and the water volume was not possible to measure due to water leakage past the piston when the Geco transferred from FMT bottle to a PVT bottle. The gas gravity was measured to 0.790 (air = 1). The oil density of stabilized oil was measured to 0.817 g/cm³ at 15 °C. One 10-litre sample taken at 1588.8 m contained 2.5 litre of mud filtrate. The sampling aborted after 4 hrs and 17 min. The well was permanently abandoned on 26 February 1994 as an oil and gas discovery.

Testing

Two zones were perforated and tested: Test no. 1 from 1592 -1610 m, and test no. 2 from 1577 -1586 m. For test no. 1 both diesel and Nitrogen was used to increase the under-balance, but the well did not flow. Finally, after stimulation with HCl test no. 1 produced 320 000 Sm³/d gas, 17 m³/d oil, and 70 m³/d water on a 72 mm choke. The HCl stimulation may have affected the cement, and the producing interval was probably the porous spiculite at 1569 m to 1590 m. Test no. 2 produced 215 000 Sm³/d gas, 15 m³/d oil, and 85 m³/d water on a 25.4 mm choke.

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Cuttings at the NPD

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
780.00	2529.00

Cuttings available for sampling?	YES
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Cores at the NPD

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1574.0	1576.3	[m]
2	1814.0	1836.0	[m]
3	1837.0	1865.7	[m]
4	2362.0	2389.5	[m]
5	2526.0	2528.5	[m]

Total core sample length [m]	82.9
Cores available for sampling?	YES

Core photos



1574-1576m



1814-1818m



1818-1822m



1822-1826m



1826-1830m



1830-1834m



1834-1836m



1837-1841m



1841-1845m



1845-1849m



1849-1853m



1853-1857m



1857-1861m



1861-1865m



1865-1866m



2362-2366m



2362-2466m



2366-2370m



2366-2470m



2370-2374m



2370-2474m



2374-2378m



2374-2478m



2378-2382m



2378-2482m



2382-2386m



2382-2486m



2386-2390m



2386-2489m



2526-2529m

Palynological slides at the NPD

Sample depth	Depth unit	Sample type	Laboratory
892.0	[m]	SWC	STATO
925.0	[m]	SWC	STATO
981.0	[m]	SWC	STATO
1055.0	[m]	SWC	STATO
1281.0	[m]	SWC	STATO
1323.5	[m]	SWC	STATO
1339.0	[m]	SWC	STATO
1399.0	[m]	SWC	STATO
1514.5	[m]	SWC	STATO
1538.0	[m]	SWC	STATO
1543.0	[m]	SWC	STATO
1555.0	[m]	SWC	STATO
1561.0	[m]	SWC	STATO
1566.0	[m]	SWC	STATO
1568.5	[m]	SWC	STATO

1668.0 [m]	SWC	STATO
1682.5 [m]	SWC	STATO
1693.0 [m]	SWC	STATO
1701.5 [m]	SWC	STATO
1814.7 [m]	C	STATO
1819.6 [m]	C	STATO
1824.9 [m]	C	STATO
1828.2 [m]	C	STATO
1851.5 [m]	C	STATO
2009.0 [m]	SWC	STATO
2015.3 [m]	SWC	STATO
2057.0 [m]	SWC	STATO
2091.0 [m]	SWC	STATO
2103.0 [m]	SWC	STATO
2130.8 [m]	SWC	STATO
2170.0 [m]	SWC	STATO
2182.0 [m]	SWC	STATO
2211.0 [m]	SWC	STATO
2243.5 [m]	SWC	STATO
2257.0 [m]	SWC	STATO
2282.0 [m]	SWC	STATO
2286.0 [m]	SWC	STATO
2311.0 [m]	SWC	STATO
2331.5 [m]	SWC	STATO
2342.0 [m]	SWC	STATO
2363.7 [m]	C	STATO
2368.9 [m]	C	STATO
2375.3 [m]	C	STATO
2381.6 [m]	C	STATO
2389.5 [m]	C	STATO
2396.0 [m]	SWC	STATO
2450.0 [m]	SWC	STATO

Oil samples at the NPD

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	DST1-1A	1610.00	1595.00		09.02.1994 - 00:00	YES

DST	DST1A-1B	1610.00	1577.00		10.02.1994 - 21:00	YES
DST	DST2	1577.00	0.00		17.02.1994 - 14:15	YES

Lithostratigraphy

Top depth [m]	Lithostrat. unit
394	NORDLAND GP
494	KAPP TOSCANA GP
494	SNADD FM
504	SASSEDALEN GP
504	KOBBE FM
748	KLAPPMYSS FM
1008	HAVERT FM
1569	TEMPELFJORDEN GP
1569	RØYE FM
1704	BJARMELAND GP
1704	ISBJØRN FM
1820	GIPSDALEN GP
1820	ØRN FM
1952	FALK FM
2058	BILLEFJORDEN GP
2058	TETTEGRAS FM
2351	SOLDOGG FM
2503	BASEMENT

Composite logs

Document name	Document format	Document size [KB]
2049	pdf	0.39

Geochemical information

Document name	Document format	Document size [KB]
2049_1	pdf	1.84
2049_2	pdf	1.03
2049_3	pdf	1.91
2049_4	pdf	5.05

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

Document name	Document format	Document size [KB]
2049 7128 4 1 COMPLETION REPORT AND LOG	pdf	51.84

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	1592	1610	72.0
2.0	1577	1586	25.4

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0		30.000		

Test number	Oil [Sm ³ /day]	Gas [Sm ³ /day]	Oil density [g/cm ³]	Gas grav. rel.air	GOR [m ³ /m ³]
1.0	17	320000			18823
2.0	15	215000	0.797	0.638	14333

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBIL GR	1502	2469
CBL VDL GR	1100	1502
DIFL ACL ZDL CNL GR	1502	2023
DIFL ACL ZDL GR	750	1517
DIFL ACL ZDL GR	2432	2530
DIFL MAC SL GR	1502	2471
DLL MLL GR	1540	1718
FMT	1570	1594
FMT GR	1573	1574
FMT GR	1576	1576
FMT GR	1585	1589

FMT GR	1594	2447
FMT GR	1594	2420
FMT GR	1658	1685
MWD	460	2526
SHDT GR	1503	2463
SWC GR	756	1515
SWC GR	1533	1691
SWC GR	1693	2072
SWC GR	2076	2467
VSP GR	493	2460
ZDL CNL GR	1988	2469

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT mud eqv. [g/cm ³]	Formation test type
CONDUCTOR	30	455.0	36	455.0	0.00	LOT
INTERM.	20	750.0	26	750.0	1.40	LOT
INTERM.	13 3/8	1502.0	17 1/2	1504.0	1.74	LOT
INTERM.	9 5/8	2432.0	12 1/4	2432.0	1.50	LOT
OPEN HOLE		2530.0	8 1/2	2530.0	0.00	LOT
OPEN HOLE		2530.0	8 1/2	0.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm ³]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
715	1.20	15.0		WATER BASED	
770	1.12	17.0		WATER BASED	
815	1.03	17.0		WATER BASED	
1307	1.20	18.0		WATER BASED	
1495	1.20	15.0		WATER BASED	
1525	1.20	18.0		WATER BASED	
1589	1.12			WATER BASED	
1701	1.20	19.0		WATER BASED	
1814	1.20	19.0		WATER BASED	
1951	1.20	21.0		WATER BASED	
2092	1.20	23.0		WATER BASED	

2141	1.20	26.0		WATER BASED	
2356	1.20	26.0		WATER BASED	
2468	1.10	9.0		WATER BASED	
2523	1.10	17.0		WATER BASED	
2530	1.12			WATER BASED	