

**General information**

Wellbore name	34/7-8
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	VIGDIS
Discovery	34/7-8 Vigdis
Well name	34/7-8
Seismic location	G/E - 281 SP. 410
Production licence	089
Drilling operator	Saga Petroleum ASA
Drill permit	503-L
Drilling facility	TREASURE SAGA
Drilling days	66
Entered date	05.02.1986
Completed date	11.04.1986
Release date	11.04.1988
Publication date	28.02.2008
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA DRAUPNE FM SS
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	STATFJORD GP
Kelly bushing elevation [m]	26.0
Water depth [m]	286.0
Total depth (MD) [m RKB]	2766.0
Final vertical depth (TVD) [m RKB]	2766.0
Maximum inclination [°]	2
Bottom hole temperature [°C]	96
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	LUNDE FM
Geodetic datum	ED50
NS degrees	61° 22' 25.93" N
EW degrees	2° 8' 33.37" E



NS UTM [m]	6804894.92
EW UTM [m]	454171.61
UTM zone	31
NPDID wellbore	878

Wellbore history

General

Wildcat well 34/7-8 was drilled on the "C" structure south of the Snorre field area on Tampen Spur in the Northern North Sea. The Late Triassic - Early Jurassic reservoirs of the structure are tilted fault blocks dipping in a generally north westerly direction. The "C" structure is defined by a major west bounding fault with throws up to 350 m in the northwest, diminishing to 20 m at the southern end. The main objectives of the well were to test the quality and thickness of the Statfjord Formation and the Upper Lunde Formation. Further objectives were to test the fluid content of the structure and sealing effect of the "C" horst fault.

Operations and results

Well 34/7-8 was spudded with the semi-submersible installation Treasure Saga on 5 February 1986 and drilled to TD at 2766 m in the Late Triassic Lunde Formation. Problems with tight hole were experienced through several zones in the 17 1/2" section. At 1642 m the pipe stuck and had to be worked free. During plug and abandon operation of the combined cut and pull tool caused problems. After several attempts of cutting, the string parted in the section of drill collars. Fifty-seven m of drill collar, cut and pull tool, wellhead with casing strings, TGB and PGB were left on the seabed. Seabed clean-up operations were carried out in June 1986, after abandonment. The well was drilled with spud mud down to 439 m, with gel mud from 439 m to 870 m, with gypsum/polymer mud from 870 m to 2280 m, and with gel mud from 2280 m to TD.

Apart from the sandy Utsira Formation of Late Oligocene - Pliocene age, an Early Oligocene (1265 - 1350 m) and a Middle - Late Eocene (1445 - 1465 m) sandstone unit within the Hordaland Group, the Tertiary and Cretaceous proved mainly claystones. The Jurassic consists of reworked sandstone, a claystone rich Dunlin Group and alternating sandstones and claystones in the Statfjord Formation. The Triassic proved sandstones occasionally alternating and interbedded with claystones down to TD

Oil was encountered from 2275 m in the Late Jurassic "Reworked Sand" (Formally named Intra Draupne Formation Sandstone). No oil water contact was defined. From log evaluation oil was estimated down to 2405 m (Statfjord Formation) and water up to 2525 m (Lunde Formation). The Intra Draupne sand (2275.0 - 2284.5 m) had an average log porosity of 25.1%, average water saturation of 15% and N/G of 0.94. In the Statfjord Formation (2299 - 2373 m) the average porosity was 21.7%, the water saturation was 35% and the N/G was 0.33. In the Upper Lunde Formation down to 2405 m, the average porosity was 20.3%, the water saturation 67%, and the N/G 0.18.

Trace shows were first encountered in sandy lamina from top of the Rogaland Group at 1690 m. First occurrence of C2+ in mud gas was detected at 2055 m. The shows were poor to moderate down to top reservoir. Strong oil shows, stain and odour was recorded on sandstones in the reservoir with the deepest show recorded on cored sandstone at 2401 to 2403 m in the lower part of the Statfjord Formation.

Four cores were cut in this well. The first was cut from 2280 - 2294.4 m in the Reworked Jurassic Sandstone and into the Dunlin Group. Cores No. 2 and 3 were cut in the Statfjord Formation in the intervals 2325 - 2365 m and 2401 - 2406.4 m. The lowest core was cut at 2397 - 2407 m in the Upper Lunde Formation. Two FMT fluid samples were



recovered from 2398.2 m (0.2 l oil and 2.2 l filtrate) and at 2302 m (1.2 l oil and 2.8 l filtrate).

The well was permanently abandoned on 11 April 1986 as an oil discovery.

Testing

A total of 3 production tests were carried out in the Upper Lunde, the Statfjord Formation and the Intra Draupne Formation sand.

Test 1A produced from the Statfjord Formation (2359 - 2374 m). The oil production rate through a 6.4 mm choke was 46 Sm³/day at 18 bar wellhead pressure. The GOR was 55 Sm³/Sm³ and the stock tank oil density was 0.855 g/cm³. The reservoir temperature was measured to 86.5 deg C.

During test 1B, both the Statfjord Formation (2359 - 2374 m) and the Upper Lunde Unit A (2397 - 2405 m) perforation intervals were open to flow. The oil production rate was 120 Sm³/day through a 19.1 mm choke at 6.5 bar wellhead pressure. It could not be established if the deeper Lunde Formation interval contributed to the flow. The GOR was 46 Sm³/Sm³ and the stock tank oil density was 0.8513 g/cm³. The reservoir temperature was measured to 87.1 deg C.

Test 2 produced from the Statfjord Formation (2329 - 2334 m). The production rate was 270 Sm³/day through a 6.4 mm choke with a wellhead pressure of 99 bar. The GOR was 84 Sm³/Sm³ and the stock tank oil density was 0.8425 g/cm³. The reservoir temperature was measured to 86.2 deg C.

Test 3 produced from the Intra Draupne Formation sand (2276 - 2284 m). The production rate was 1300 Sm³/day through a 17.5 mm choke. The GOR was 69 Sm³/Sm³ and the stock tank oil density was 0.853 g/cm³. The reservoir temperature was measured to 85.3 deg C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
450.00	2766.00

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	2280.0	2294.4	[m]
2	2325.0	2344.7	[m]
3	2346.0	2365.0	[m]
4	2401.0	2406.4	[m]

Total core sample length [m]	58.5
Cores available for sampling?	YES



Core photos



2280-2284m



2284-2288m



2288-2292m



2292-2296m



2296-2327m



2327-2331m



2331-2334m



2335-2339m



2339-2343m



2343-2348m



2348-2352m



2352-2356m



2356-2360m



2360-2364m



2364-2403m



2403-2406m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1105.0	[m]	SWC	R.R.I
1110.0	[m]	SWC	R.R.I
1135.0	[m]	SWC	R.R.I
1225.0	[m]	SWC	R.R.I
1880.1	[m]	SWC	R.R.I
1940.1	[m]	SWC	R.R.I



1976.1	[m]	SWC	R.R.I
2084.1	[m]	SWC	R.R.I
2122.1	[m]	SWC	R.R.I
2182.0	[m]	SWC	R.R.I
2218.0	[m]	SWC	R.R.I
2260.0	[m]	SWC	R.R.I
2282.6	[m]	C	RRI
2283.9	[m]	C	RRI
2284.4	[m]	C	RRI
2285.7	[m]	C	RRI
2287.8	[m]	C	RRI
2291.8	[m]	C	RRI
2296.4	[m]	C	RRI
2296.7	[m]	C	RRI

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	TEST1	2359.00	2374.00	OIL	22.03.1986 - 00:00	YES
DST	TEST1,1	2333.00	2348.00	OIL	22.03.1986 - 00:00	YES
DST	TEST1,2	2333.00	2348.00	OIL	26.03.1986 - 00:00	YES
DST	TEST2,0	2303.00	2308.00		31.03.1986 - 00:00	YES
DST	TEST3	2250.00	2258.00	OIL	04.04.1986 - 21:30	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
312	NORDLAND GP
1090	UTSIRA FM
1105	HORDALAND GP
1262	NO FORMAL NAME
1348	NO FORMAL NAME
1445	NO FORMAL NAME



1462	NO FORMAL NAME
1658	ROGALAND GP
1658	BALDER FM
1695	LISTA FM
1833	SHETLAND GP
1833	JORSALFARE FM
1928	KYRRE FM
2274	CROMER KNOLL GP
2274	RØDBY FM
2276	MIME FM
2278	VIKING GP
2278	INTRA DRAUPNE FM SS
2284	DUNLIN GP
2284	AMUNDSEN FM
2299	STATEFJORD GP
2373	HEGRE GP
2373	LUNDE FM

Geochemical information

Document name	Document format	Document size [MB]
878_1	pdf	0.64
878_2	pdf	3.80

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
878_01_WDSS_General_Information	pdf	0.26
878_02_WDSS_completion_log	pdf	0.23

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

Document name	Document format	Document size [MB]
878_01_34_7_8_Completion_report	pdf	8.57
878_02_34_7_8_Completion_log	pdf	1.67





Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.1	2359	2374	6.4
1.2	2359	2374	19.1
3.0	2334	2329	6.4
4.0	2284	2276	17.5

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.1	2.600		19.000	
1.2	1.000		43.000	
3.0	14.000	9.000	41.000	86
4.0	14.000		48.000	85

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.1	64	3520	0.855		55
1.2	120	5520	0.851		46
3.0	272	14144	0.840		52
4.0	1337	70861	0.830		53

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CDL CN SL CAL	1856	2765
CDL GR	310	850
CDL GR	847	1854
DIFL LS BHC GR CAL	310	870
DIFL LS BHC GR CAL	847	1873
DIFL LS BHC GR CAL	1856	2766
DIPLOG	1856	2765
DLL MLL GR CAL	2197	2765
FMT	0	0
MWD - GR RES	434	2761
VELOCITY	1580	2760

**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	434.0	36	439.0	0.00	LOT
SURF.COND.	20	848.0	26	870.0	1.62	LOT
INTERM.	13 3/8	1859.0	17 1/2	1875.0	1.87	LOT
INTERM.	9 5/8	2525.0	12 1/4	2766.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
439	1.03			WATER BASED	11.02.1986
439	1.04	11.0	7.2	WATER BASED	11.02.1986
747	1.12	10.0	18.2	WATER BASED	11.02.1986
870	1.11	9.0	21.1	WATER BASED	11.02.1986
870	1.10	15.0	9.1	WATER BASED	12.02.1986
870	1.13	9.0	31.2	WATER BASED	11.02.1986
870	1.03			WATER BASED	12.02.1986
1229	1.12	16.0	9.1	WATER BASED	12.02.1986
1562	1.30	18.0	11.1	WATER BASED	17.02.1986
1860	1.50	20.0	9.6	WATER BASED	17.02.1986
1875	1.50	13.0	6.3	WATER BASED	17.02.1986
1875	1.50	19.0	6.3	WATER BASED	24.02.1986
1875	1.50	20.0	8.2	WATER BASED	17.02.1986
2039	1.66	25.0	8.7	WATER BASED	24.02.1986
2201	1.73	29.0	9.6	WATER BASED	24.02.1986
2250	1.77	27.0	9.6	WATER BASED	24.02.1986
2275	1.78	30.0	8.2	WATER BASED	24.02.1986
2275	1.78	27.0	9.1	WATER BASED	03.03.1986
2275	1.78	25.0	7.2	WATER BASED	03.03.1986
2275	1.78	26.0	7.7	WATER BASED	04.03.1986
2275	1.74	24.0	7.2	WATER BASED	05.03.1986
2275	1.74	19.0	4.8	WATER BASED	10.03.1986
2275	1.74	17.0	5.8	WATER BASED	17.03.1986
2275	1.74	17.0	4.8	WATER BASED	26.03.1986
2275	1.74	16.0	4.8	WATER BASED	31.03.1986
2275	1.74	15.0	4.8	WATER BASED	31.03.1986



2275	1.74	14.0	5.8	WATER BASED	07.04.1986
2275	1.74	15.0	4.8	WATER BASED	07.04.1986
2275	1.74	15.0	5.8	WATER BASED	07.04.1986
2275	1.74	15.0	6.3	WATER BASED	07.04.1986
2275	1.74	15.0	5.8	WATER BASED	08.04.1986
2275	1.74	14.0	5.8	WATER BASED	10.04.1986
2275	1.74	18.0	4.4	WATER BASED	18.03.1986
2275	1.74	17.0	4.4	WATER BASED	24.03.1986
2275	1.74	17.0	4.8	WATER BASED	24.03.1986
2275	1.74	17.0	5.3	WATER BASED	24.03.1986
2275	1.74	18.0	4.4	WATER BASED	17.03.1986
2275	1.74	16.0	5.3	WATER BASED	25.03.1986
2280	1.77	28.0	8.7	WATER BASED	24.02.1986
2350	1.78	27.0	8.2	WATER BASED	26.02.1986
2400	1.78	28.0	9.1	WATER BASED	26.02.1986
2472	1.74	17.0	4.4	WATER BASED	17.03.1986
2472	1.74	18.0	4.4	WATER BASED	17.03.1986
2472	1.74	19.0	4.8	WATER BASED	10.03.1986
2472	1.74	19.0	4.4	WATER BASED	12.03.1986
2472	1.74	16.0	4.8	WATER BASED	26.03.1986
2525	1.74	19.0	4.4	WATER BASED	08.03.1986
2760	1.78	29.0	9.6	WATER BASED	28.02.1986
2766	1.74	23.0	6.8	WATER BASED	10.03.1986
2766	1.74	25.0	7.2	WATER BASED	10.03.1986
2766	1.74	23.0	7.2	WATER BASED	10.03.1986

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2297.00	[m]

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]
878 Formation pressure (Formasjonstrykk)	pdf	0.21

