

**General information**

Wellbore name	1/3-5
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	1/3-5
Seismic location	79111 SP. 527
Production licence	011
Drilling operator	A/S Norske Shell
Drill permit	435-L
Drilling facility	NEDDRILL TRIGON
Drilling days	134
Entered date	01.10.1984
Completed date	11.02.1985
Release date	11.02.1987
Publication date	15.02.2006
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	35.0
Water depth [m]	71.0
Total depth (MD) [m RKB]	4850.0
Final vertical depth (TVD) [m RKB]	4850.0
Bottom hole temperature [°C]	172
Oldest penetrated age	EARLY PERMIAN
Oldest penetrated formation	ROTLIEGEND GP
Geodetic datum	ED50
NS degrees	56° 46' 16.02" N
EW degrees	2° 53' 38.85" E
NS UTM [m]	6292053.66
EW UTM [m]	493528.57
UTM zone	31
NPDID wellbore	223



Wellbore history

General

Well 1/3-5 was drilled on a NW-SE oriented fault block tilted towards the NW. The structure is located in the northern Permian basin, on the east side of Central Graben, extending into blocks 116, 211, and 2/4. The purpose of the well was to evaluate the hydrocarbon potential of the Rotliegendes Group sandstones.

Operations and results

Wildcat well 1/3-5 was spudded with the 3-leg jack up installation Neddrill Trigon on 1 October 1984 and drilled to TD at 4850 m in the Permian Rotliegendes Group. After setting the 30" conductor a 14 3/4" pilot hole was drilled to 1195 m, before opening the hole to 26". Drilling to 2470 m the mud weight was raised from 1.33 g/cm³ to 1.70 g/cm³ due to high formation pressure. This resulted in tight hole during wiper trips, and high weight strain on the drill string, and also caused the 13 3/8" casing to be set somewhat higher than prognosed. Through the chalk sequence the hole seemed to be tight, and while tripping at 3523 m, the drill string got stuck with the bit at 3515 m. It was assumed that the tight interval was caused by one of the stabilizers between 3247 and 3267 m. The string was freed by pumping acid. A high pressure sand sequence in the interval 4363-4395 m, with pore pressure close to the last leak-off Test, resulted in the 7" liner being set 520 m higher than prognosed. The well was drilled with spud mud down to 1195 m, with KCl/polymer mud from 1195 m to 3000 m, from 3000 m the mud was lightly treated with lignosulphonate. Fifty bbl of pipelax with a mud/diesel ratio of 1:1 was added to the mud to free the stuck pipe at 3515 m. From 4122 m to TD the well was drilled with a polymer/sulphonated resin mud.

Traces of yellow direct fluorescence, mainly on fractures, with a moderate milky-white cut fluorescence were observed at the top of the Tor Formation and at several levels deeper down in the formation. Also near the base of the Hod Formation, a very weak and slow pale yellowish cut fluorescence was occasionally observed. Direct fluorescence was not detected. Petrophysical analysis supported that some zones in the lower Hod Formation (4369 m to 4448 m) could be marginally hydrocarbon bearing. The objective Rotliegendes sand came in at 4769 m. Results from permeability measurements indicated that the sand was water bearing and tight, although porosity readings from the core from this sand were surprisingly high. A water-bearing formation was supported also by low background gas readings and lack of shows while drilling through the interval.

One core was cut in the Rotliegendes Group sandstones from 4805 m - 4814 m. An FMT sample taken at 4387 m (Lower Hod Formation) recovered mud filtrate only. An FMT sample taken at 4770 m near the top of the Rotliegendes Group recovered mud filtrate, with no indications of hydrocarbons.

The well was permanently abandoned on 11 February 1985 as a dry well with shows.

Testing

No drill stem test was performed in the well.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
180.00	4850.00



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	4805.0	4814.0	[m]

Total core sample length [m]	9.0
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
106	NORDLAND GP
1075	HORDALAND GP
3062	ROGALAND GP
3062	BALDER FM
3070	SELE FM
3078	LISTA FM
3153	VIDAR FM
3206	LISTA FM
3245	VÅLE FM
3288	SHETLAND GP
3288	EKOFISK FM
3384	TOR FM
3858	HOD FM
4568	HIDRA FM
4580	CROMER KNOLL GP
4580	RØDBY FM
4604	SOLA FM
4625	ÅSGARD FM
4734	ZECHSTEIN GP
4769	ROTLIEGEND GP

Composite logs





Document name	Document format	Document size [MB]
223	pdf	0.65

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

Document name	Document format	Document size [MB]
223_01_WDSS_General_Information	pdf	0.30
223_02_WDSS_completion_log	pdf	0.32

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

Document name	Document format	Document size [MB]
223_01_1_3_5_Well_Resume	pdf	3.19
223_02_1_3_5_Completion_log	pdf	2.41

Logs

Log type	Log top depth [m]	Log bottom depth [m]
4ARM CAL	150	2455
ACBL VDL	70	2443
ACBL VDL	1225	4105
CDL CNL GR	2673	4850
DIFL ACL GR	100	4804
DIPLOG	4121	4791
DLL MLL	4092	4851
FMT	3155	3677
FMT	4288	4391
FMT	4529	4836
SWS	4139	4395
SWS	4395	4850
TEMP	15	295
TEMP	100	4106
VSP	100	4795

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	168.0	36	181.0	0.00	LOT
SURF.COND.	20	1183.0	26	1195.0	1.77	LOT
INTERM.	13 3/8	2443.0	17 1/2	2470.0	1.91	LOT
INTERM.	9 5/8	4122.0	12 1/4	4138.0	2.12	LOT
LINER	7	4395.0	8 1/2	4395.0	2.33	LOT
OPEN HOLE		4850.0	6	4850.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
157	1.03			WATER BASED	03.10.1984
160	1.03			WATER BASED	03.10.1984
162	1.03			WATER BASED	08.10.1984
169	1.03			WATER BASED	08.10.1984
450	1.03			WATER BASED	08.10.1984
735	1.09	52.0	34.0	WATER BASED	08.10.1984
1091	1.12	9.0	36.0	WATER BASED	08.10.1984
1195	1.11	5.0	24.0	WATER BASED	09.10.1984
1195	1.12			WATER BASED	10.10.1984
1195	1.14			WATER BASED	11.10.1984
1195	1.14			WATER BASED	14.10.1984
1195	1.14			WATER BASED	15.10.1984
1195	1.03			WATER BASED	17.10.1984
1195	1.13	13.0	32.0	WATER BASED	08.10.1984
1195	1.03			WATER BASED	17.10.1984
1195	1.11	5.0	24.0	WATER BASED	09.10.1984
1195	1.12			WATER BASED	10.10.1984
1195	1.14			WATER BASED	11.10.1984
1195	1.14			WATER BASED	14.10.1984
1195	1.14			WATER BASED	15.10.1984
1292	1.25			WATER BASED	17.10.1984
1410	1.30	18.0	18.0	WATER BASED	18.10.1984
1640	1.50	28.0	17.0	WATER BASED	21.10.1984
1650	1.50	35.0	9.0	WATER BASED	21.10.1984
1841	1.65	50.0	16.0	WATER BASED	21.10.1984
2051	1.70	40.0	10.0	WATER BASED	22.10.1984



2186	1.70	26.0	10.0	WATER BASED	23.10.1984
2339	1.70	38.0	6.0	WATER BASED	24.10.1984
2470	1.70	23.0	13.0	WATER BASED	25.10.1984
2470	1.70	26.0	6.0	WATER BASED	29.10.1984
2470	1.70	23.0	6.0	WATER BASED	29.10.1984
2470	1.70	30.0	6.0	WATER BASED	30.10.1984
2470	1.70	21.0	8.0	WATER BASED	31.10.1984
2470	1.68	22.0	8.0	WATER BASED	01.11.1984
2470	1.68	22.0	8.0	WATER BASED	02.11.1984
2470	1.70	20.0	14.0	WATER BASED	05.11.1984
2470	1.70	21.0	14.0	WATER BASED	05.11.1984
2470	1.70	26.0	6.0	WATER BASED	29.10.1984
2470	1.70	23.0	6.0	WATER BASED	29.10.1984
2470	1.70	31.0	8.0	WATER BASED	29.10.1984
2470	1.70	30.0	6.0	WATER BASED	30.10.1984
2470	1.70	21.0	8.0	WATER BASED	31.10.1984
2470	1.68	22.0	8.0	WATER BASED	01.11.1984
2470	1.68	22.0	8.0	WATER BASED	02.11.1984
2470	1.70	20.0	14.0	WATER BASED	05.11.1984
2470	1.70	21.0	14.0	WATER BASED	05.11.1984
2470	1.70	31.0	8.0	WATER BASED	29.10.1984
2665	1.70	25.0	8.0	WATER BASED	06.11.1984
2840	1.70	36.0	13.0	WATER BASED	06.11.1984
2873	1.70	46.0	22.0	WATER BASED	07.11.1984
2980	1.71	39.0	18.0	WATER BASED	08.11.1984
3049	1.70	43.0	20.0	WATER BASED	09.11.1984
3089	1.70	39.0	23.0	WATER BASED	12.11.1984
3103	1.70	39.0	20.0	WATER BASED	12.11.1984
3161	1.70	39.0	20.0	WATER BASED	12.11.1984
3246	1.70	40.0	18.0	WATER BASED	13.11.1984
3269	1.70	39.0	18.0	WATER BASED	15.11.1984
3342	1.70	35.0	15.0	WATER BASED	15.11.1984
3365	1.70	30.0	15.0	WATER BASED	16.11.1984
3428	1.70	29.0	14.0	WATER BASED	19.11.1984
3513	1.70	28.0	13.0	WATER BASED	19.11.1984
3563	1.70	29.0	12.0	WATER BASED	19.11.1984
3563	1.70	30.0	18.0	WATER BASED	20.11.1984
3563	1.70	30.0	18.0	WATER BASED	21.11.1984
3563	1.70	28.0	11.0	WATER BASED	22.11.1984
3563	1.70	30.0	18.0	WATER BASED	20.11.1984



3563	1.70	30.0	18.0	WATER BASED	21.11.1984
3563	1.70	28.0	11.0	WATER BASED	22.11.1984
3628	1.70	27.0	14.0	WATER BASED	23.11.1984
3646	1.70	25.0	11.0	WATER BASED	26.11.1984
3745	1.70	32.0	15.0	WATER BASED	26.11.1984
3849	1.70	32.0	19.0	WATER BASED	26.11.1984
3957	1.70	40.0	20.0	WATER BASED	27.11.1984
4040	1.72	35.0	19.0	WATER BASED	28.11.1984
4107	1.75	34.0	15.0	WATER BASED	29.11.1984
4138	1.80	39.0	18.0	WATER BASED	04.12.1984
4138	1.80	38.0	16.0	WATER BASED	04.12.1984
4138	1.80	31.0	15.0	WATER BASED	04.12.1984
4138	1.80	38.0	18.0	WATER BASED	05.12.1984
4138	1.80	38.0	18.0	WATER BASED	06.12.1984
4138	1.81	38.0	19.0	WATER BASED	07.12.1984
4138	1.81	33.0	16.0	WATER BASED	10.12.1984
4138	1.81	34.0	15.0	WATER BASED	10.12.1984
4138	1.81	38.0	19.0	WATER BASED	10.12.1984
4138	1.80	26.0	14.0	WATER BASED	11.12.1984
4138	1.80	39.0	18.0	WATER BASED	30.11.1984
4138	1.80	38.0	16.0	WATER BASED	04.12.1984
4138	1.81	38.0	19.0	WATER BASED	10.12.1984
4138	1.80	26.0	14.0	WATER BASED	11.12.1984
4138	1.80	39.0	18.0	WATER BASED	04.12.1984
4138	1.80	31.0	15.0	WATER BASED	04.12.1984
4138	1.80	38.0	18.0	WATER BASED	05.12.1984
4138	1.80	38.0	18.0	WATER BASED	06.12.1984
4138	1.81	38.0	19.0	WATER BASED	07.12.1984
4138	1.81	33.0	16.0	WATER BASED	10.12.1984
4138	1.81	34.0	15.0	WATER BASED	10.12.1984
4149	1.80	18.0	12.0	WATER BASED	12.12.1984
4235	1.81	26.0	11.0	WATER BASED	12.12.1984
4283	1.95	33.0	15.0	WATER BASED	17.12.1984
4329	2.00	37.0	19.0	WATER BASED	17.12.1984
4329	2.00	28.0	17.0	WATER BASED	17.12.1984
4329	2.00	28.0	17.0	WATER BASED	17.12.1984
4364	2.02	27.0	15.0	WATER BASED	17.12.1984
4395	2.08	33.0	20.0	WATER BASED	19.12.1984
4395	0.00	36.0	15.0	WATER BASED	19.12.1984
4395	2.08	36.0	15.0	WATER BASED	20.12.1984



4395	2.08	37.0	13.0	WATER BASED	26.12.1984
4395	2.08	38.0	13.0	WATER BASED	26.12.1984
4395	2.08	38.0	14.0	WATER BASED	26.12.1984
4395	2.08	36.0	13.0	WATER BASED	26.12.1984
4395	2.08	38.0	14.0	WATER BASED	27.12.1984
4395	2.08	37.0	12.0	WATER BASED	27.12.1984
4395	2.07	29.0	10.0	WATER BASED	01.01.1985
4395	2.08	31.0	9.0	WATER BASED	01.01.1985
4395	2.08	33.0	20.0	WATER BASED	18.12.1984
4395	2.08	36.0	15.0	WATER BASED	18.12.1984
4395	2.08	36.0	15.0	WATER BASED	20.12.1984
4395	2.08	37.0	13.0	WATER BASED	26.12.1984
4395	2.08	37.0	14.0	WATER BASED	26.12.1984
4395	2.08	38.0	13.0	WATER BASED	26.12.1984
4395	2.08	36.0	13.0	WATER BASED	26.12.1984
4395	2.08	38.0	14.0	WATER BASED	26.12.1984
4395	2.08	37.0	12.0	WATER BASED	27.12.1984
4395	2.07	29.0	10.0	WATER BASED	01.01.1985
4395	2.08	34.0	10.0	WATER BASED	01.01.1985
4395	2.08	37.0	14.0	WATER BASED	26.12.1984
4395	2.08	38.0	14.0	WATER BASED	26.12.1984
4395	2.08	34.0	10.0	WATER BASED	01.01.1985
4395	2.08	38.0	14.0	WATER BASED	26.12.1984
4395	2.08	38.0	14.0	WATER BASED	27.12.1984
4395	2.08	31.0	9.0	WATER BASED	01.01.1985
4423	2.11	32.0	10.0	WATER BASED	01.01.1985
4467	2.11	35.0	11.0	WATER BASED	01.01.1985
4513	2.11	32.0	9.0	WATER BASED	02.01.1985
4513	2.11	32.0	10.0	WATER BASED	03.01.1985
4513	2.11	32.0	10.0	WATER BASED	03.01.1985
4548	2.11	28.0	8.0	WATER BASED	07.01.1985
4560	2.11	31.0	11.0	WATER BASED	07.01.1985
4592	2.11	28.0	8.0	WATER BASED	07.01.1985
4605	2.11	27.0	8.0	WATER BASED	07.01.1985
4662	2.11	27.0	7.0	WATER BASED	09.01.1985
4710	2.11	27.0	9.0	WATER BASED	10.01.1985
4710	2.11	26.0	8.0	WATER BASED	10.01.1985
4710	2.11	27.0	9.0	WATER BASED	14.01.1985
4710	2.11	26.0	8.0	WATER BASED	10.01.1985
4710	2.11	27.0	9.0	WATER BASED	14.01.1985



4727	2.11	29.0	9.0	WATER BASED	14.01.1985
4762	2.11	28.0	8.0	WATER BASED	14.01.1985
4805	2.11	28.0	11.0	WATER BASED	15.01.1985
4805	2.11	28.0	12.0	WATER BASED	16.01.1985
4805	2.11	28.0	12.0	WATER BASED	16.01.1985
4814	2.11	28.0	16.0	WATER BASED	21.01.1985
4814	2.11	29.0	14.0	WATER BASED	17.01.1985
4814	2.11	28.0	16.0	WATER BASED	21.01.1985
4850	2.11	26.0	10.0	WATER BASED	21.01.1985
4850	2.11	28.0	13.0	WATER BASED	21.01.1985
4850	2.11	29.0	14.0	WATER BASED	21.01.1985
4850	2.11	29.0	13.0	WATER BASED	21.01.1985
4850	2.11	29.0	14.0	WATER BASED	21.01.1985
4850	2.11	29.0	13.0	WATER BASED	21.01.1985
4850	2.11	28.0	13.0	WATER BASED	21.01.1985

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
4809.00	[m]
4812.00	[m]
4805.35	[m]
4810.35	[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]
223 Formation pressure (Formasjonstrykk)	pdf	0.22

