



General information





Wellbore name	2/4-14
Type	EXPLORATION
Purpose	WILDCAT
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORTH SEA
Discovery	2/4-14
Well name	2/4-14
Seismic location	LINJE NS-5-235 & SP585
Production licence	146
Drilling operator	Saga Petroleum ASA
Drill permit	593-L
Drilling facility	TREASURE SAGA
Drilling days	118
Entered date	06.10.1988
Completed date	31.01.1989
Release date	31.01.1991
Publication date	13.12.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	EARLY CRETACEOUS
1st level with HC, formation	MANDAL FM
Kelly bushing elevation [m]	26.0
Water depth [m]	68.0
Total depth (MD) [m RKB]	4734.0
Final vertical depth (TVD) [m RKB]	4733.0
Maximum inclination [°]	2.2
Bottom hole temperature [°C]	150
Oldest penetrated age	EARLY CRETACEOUS
Oldest penetrated formation	MANDAL FM
Geodetic datum	ED50
NS degrees	56° 41' 5.26" N
EW degrees	3° 8' 43.08" E
NS UTM [m]	6282449.13
EW UTM [m]	508901.59
UTM zone	31
NPDID wellbore	1343



Wellbore history

General

Well 2/4-14 was designed to drill the same structure on the Steinbit Terrace as well 2/4-13, which was junked on 6 October 1988 due to technical problems. The wells were drilled in the middle of a structural/stratigraphic closure on a rotated fault block. Their primary objectives were to assess the hydrocarbon potential of the main structure in block 2/4. The target was expected Late Jurassic sandstone.

Operations and results

Wildcat well 2/4-14 was spudded with the semi-submersible installation Treasure Saga on 6 October 1988, 53.4 m NNW of the 2/4-13 location. It was drilled to TD at 4734 m in the Late Jurassic Tyne Group. The well was drilled with spud mud and gel down to 916 m, with KCl mud from 916 m to 4453 m, and with Hi Temp Polymer mud from 4453 m to TD.

Drilling went without significant problems down to 3687 m in the 12 1/4" section. On trip out of hole the drill string got stuck with the bit at 3538 m. The pipe could not be freed and a cement plug was set from 3475 m to 3395 m. A technical sidetrack was kicked off from 3415 m to 3463 m. Due to high temperatures the MWD worked only in part, but drilling of the remaining part of the 12 1/4" section to 4453 m proceeded without significant problems. The 8 1/2" hole was drilled to 4713 m where gas cut mud were observed with a maximum gas reading of 68 %. The hole was drilled to 4714 m when the mud weight was increased to 2.10 SG. This mud weight was near the fracture gradient at the casing seat. The equivalent circulating density at the drilling pump rates exceeded the fracture gradient at the casing seat. At 4734 m the well kicked, and gained a total 6.5 m³. The well was shut in and several attempts were made to gain control, without success. Coil tubing was run in to 4691 m and drill pipe circulated to seawater. A 1/2 bbl was taken and the well closed in. Finally, as the drill pipe started to come out of the hole, the shear-rams were activated and the drill pipe was cut on 20 January 1989. The well now developed into an underground blow out. An attempt to bullhead the well was performed, but the kill hose burst at the gooseneck. A new safety plug and no-go cap was entered in the BOP, and annular preventer closed from surface. On 31 January 1989 anchors were pulled and the well was suspended for re-entry with a different rig. Treasure Saga left the location for drilling a relief well ca 1 km to the south (2/4-15 S) to assist in killing operations.

No hydrocarbon bearing intervals were detected above the Mandal Formation at 4708 m. The MWD logs and the cutting descriptions indicated two thin oil bearing sand stringers in the interval from 4708 - 4713.5 m. A third sandstone came in at 4733 m where the well kicked. No cores were cut in this well. The well is classified as a minor discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
2520.00	4729.00

Cuttings available for sampling?	YES
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**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
94	NORDLAND GP
1766	HORDALAND GP
3142	ROGALAND GP
3142	BALDER FM
3162	SELE FM
3176	LISTA FM
3217	VIDAR FM
3262	LISTA FM
3307	VÅLE FM
3318	SHETLAND GP
3318	EKOFISK FM
3443	TOR FM
4010	HOD FM
4542	BLØDØKS FM
4561	HIDRA FM
4634	CROMER KNOLL GP
4634	RØDBY FM
4654	ÅSGARD FM
4702	TYNE GP
4702	MANDAL FM
4729	UNDEFINED GP

Composite logs

Document name	Document format	Document size [MB]
1343_2_4_14	pdf	0.67

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

Document name	Document format	Document size [MB]
1343_2_4_14_COMPLETION_LOG	pdf	2.50
1343_2_4_14_COMPLETION_REPORT	pdf	18.70





Logs

Log type	Log top depth [m]	Log bottom depth [m]
ACBL VDL	93	2509
CDL CNL GR	2509	4453
COREGUN	2522	4447
DIPLOG	3000	4452
FMT	3474	3603
LSBHC DDL GR	2509	4449
MWD - GR RES DIR	218	4734
VSP	1685	4450

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	215.0	36	217.0	0.00	LOT
SURF.COND.	20	901.0	26	916.0	1.82	LOT
INTERM.	13 3/8	2509.0	17 1/2	2526.0	2.03	LOT
INTERM.	9 5/8	4437.0	12 1/4	4437.0	2.18	LOT
OPEN HOLE		4734.0	8 1/2	4734.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
213	1.06			WATER BASED	18.10.1988
217	1.06			WATER BASED	18.10.1988
217	1.06	6.0	16.3	WATER BASED	18.10.1988
766	1.16	5.0	14.4	WATER BASED	18.10.1988
916	1.16	4.0	7.7	WATER BASED	18.10.1988
916	1.20	6.0	7.7	WATER BASED	18.10.1988
916	1.20	12.0	2.4	WATER BASED	18.10.1988
916	1.20			WATER BASED	18.10.1988
931	1.20	13.0	2.9	WATER BASED	18.10.1988
1344	1.33	22.0	5.3	WATER BASED	18.10.1988
1769	1.40	36.0	7.7	WATER BASED	18.10.1988



2123	1.55	32.0	8.7	WATER BASED	19.10.1988
2257	1.55	37.0	6.3	WATER BASED	24.10.1988
2407	1.60	32.0	5.3	WATER BASED	24.10.1988
2526	1.60	22.0	5.8	WATER BASED	24.10.1988
2526	1.60	30.0	6.3	WATER BASED	24.10.1988
2526	1.61	20.0	5.3	WATER BASED	24.10.1988
2526	1.60	30.0	5.8	WATER BASED	24.10.1988
2803	1.61	30.0	7.2	WATER BASED	26.10.1988
3032	1.65	30.0	8.2	WATER BASED	26.10.1988
3060	1.66	27.0	7.7	WATER BASED	28.10.1988
3177	1.65	21.0	4.8	WATER BASED	28.10.1988
3218	1.65	28.0	6.3	WATER BASED	07.11.1988
3273	1.65	34.0	8.7	WATER BASED	07.11.1988
3285	1.65	30.0	6.3	WATER BASED	07.11.1988
3285	1.65	32.0	7.2	WATER BASED	07.11.1988
3312	1.65	31.0	5.8	WATER BASED	07.11.1988
3341	1.65	31.0	5.3	WATER BASED	07.11.1988
3388	1.65	26.0	5.8	WATER BASED	07.11.1988
3421	1.65	26.0	5.8	WATER BASED	07.11.1988
3423	1.68	25.0	4.8	WATER BASED	24.11.1988
3441	1.65	27.0	5.8	WATER BASED	07.11.1988
3444	1.68	21.0	3.4	WATER BASED	24.11.1988
3464	1.68	22.0	5.3	WATER BASED	25.11.1988
3523	1.65	27.0	6.8	WATER BASED	07.11.1988
3561	1.68	21.0	4.8	WATER BASED	25.11.1988
3622	1.68	30.0	5.8	WATER BASED	28.11.1988
3660	1.68	26.0	6.8	WATER BASED	28.11.1988
3687	1.65	30.0	7.7	WATER BASED	11.11.1988
3687	1.65	36.0	8.7	WATER BASED	11.11.1988
3687	1.65	20.0	3.9	WATER BASED	14.11.1988
3687	1.65	23.0	4.4	WATER BASED	14.11.1988
3687	1.65	20.0	3.9	WATER BASED	15.11.1988
3687	1.65	20.0	3.4	WATER BASED	17.11.1988
3687	1.65	28.0	4.8	WATER BASED	24.11.1988
3687	1.68	22.0	4.8	WATER BASED	24.11.1988
3687	1.65	25.0	4.8	WATER BASED	14.11.1988
3687	1.65	20.0	3.4	WATER BASED	16.11.1988
3687	1.65	20.0	4.8	WATER BASED	18.11.1988
3716	1.68	25.0	7.2	WATER BASED	28.11.1988
3745	1.68	26.0	5.8	WATER BASED	29.11.1988



3773	1.68	24.0	6.8	WATER BASED	30.11.1988
3810	1.68	21.0	6.8	WATER BASED	01.12.1988
3911	1.68	23.0	6.8	WATER BASED	05.12.1988
3949	1.68	23.0	5.8	WATER BASED	05.12.1988
3990	1.68	22.0	4.8	WATER BASED	05.12.1988
4037	1.68	22.0	4.8	WATER BASED	07.12.1988
4048	1.68	22.0	4.8	WATER BASED	07.12.1988
4087	1.68	21.0	6.3	WATER BASED	08.12.1988
4153	1.68	19.0	7.2	WATER BASED	12.12.1988
4205	1.68	22.0	6.3	WATER BASED	12.12.1988
4262	1.68	23.0	5.8	WATER BASED	12.12.1988
4316	1.68	23.0	5.3	WATER BASED	12.12.1988
4366	1.72	24.0	7.2	WATER BASED	13.12.1988
4415	1.72	26.0	11.5	WATER BASED	14.12.1988
4453	1.72	21.0	4.4	WATER BASED	20.12.1988
4453	1.72	22.0	3.4	WATER BASED	22.12.1988
4453	1.72	16.0	2.0	WATER BASED	27.12.1988
4453	1.72	17.0	2.4	WATER BASED	27.12.1988
4453	1.72	19.0	5.3	WATER BASED	19.12.1988
4453	1.72	23.0	4.8	WATER BASED	19.12.1988
4453	1.72	20.0	3.4	WATER BASED	20.12.1988
4453	1.72	21.0	3.9	WATER BASED	20.12.1988
4453	1.72	22.0	3.4	WATER BASED	21.12.1988
4453	1.72	22.0	3.4	WATER BASED	27.12.1988
4453	1.72	14.0	2.9	WATER BASED	03.01.1989
4453	1.72	16.0	2.4	WATER BASED	03.01.1989
4453	1.72	20.0	3.9	WATER BASED	03.01.1989
4485	1.72	19.0	3.4	WATER BASED	03.01.1989
4505	1.72	21.0	4.4	WATER BASED	05.01.1989
4561	1.72	18.0	4.4	WATER BASED	09.01.1989
4586	1.72	17.0	3.9	WATER BASED	09.01.1989
4645	1.93	21.0	5.8	WATER BASED	09.01.1989
4650	2.00	21.0	2.9	WATER BASED	09.01.1989
4695	2.08	24.0	3.9	WATER BASED	09.01.1989
4714	2.10	24.0	5.3	WATER BASED	10.01.1989
4720	2.09	23.0	3.4	WATER BASED	11.01.1989
4733	2.12	26.0	4.4	WATER BASED	24.01.1989
4734	2.12	40.0	7.7	WATER BASED	17.01.1989
4734	2.12	24.0	2.4	WATER BASED	18.01.1989
4734	2.12	24.0	2.4	WATER BASED	19.01.1989



4734	2.09	23.0	3.9	WATER BASED	13.01.1989
4734	2.12	43.0	9.6	WATER BASED	17.01.1989
4734	2.12	24.0	2.4	WATER BASED	17.01.1989
4734	2.12	24.0	2.4	WATER BASED	20.01.1989
4734	2.12			WATER BASED	24.01.1989
4734	2.12	26.0	4.4	WATER BASED	24.01.1989
4734	2.12			WATER BASED	25.01.1989

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]
1343 Formation pressure (Formasjonstrykk)	pdf	0.22

