

**General information**

| | |
|------------------------------------|---------------------------------------|
| Wellbore name | 25/4-8 |
| Type | EXPLORATION |
| Purpose | APPRAISAL |
| Status | P&A |
| Press release | link to press release |
| Factmaps in new window | link to map |
| Main area | NORTH SEA |
| Field | ALVHEIM |
| Discovery | 25/4-3 (Gekko) |
| Well name | 25/4-8 |
| Seismic location | line 1300 & cross line 5150 (NH9603) |
| Production licence | 203 |
| Drilling operator | Marathon Petroleum Norge AS |
| Drill permit | 1065-L |
| Drilling facility | DEEPSEA BERGEN |
| Drilling days | 20 |
| Entered date | 03.06.2003 |
| Completed date | 22.06.2003 |
| Release date | 22.06.2005 |
| Publication date | 22.06.2005 |
| Purpose - planned | APPRAISAL |
| Reentry | NO |
| Content | OIL/GAS |
| Discovery wellbore | NO |
| 1st level with HC, age | PALEOCENE |
| 1st level with HC, formation | HEIMDAL FM |
| Kelly bushing elevation [m] | 23.0 |
| Water depth [m] | 122.0 |
| Total depth (MD) [m RKB] | 2286.0 |
| Final vertical depth (TVD) [m RKB] | 2286.0 |
| Maximum inclination [°] | 0.7 |
| Oldest penetrated age | PALEOCENE |
| Oldest penetrated formation | HEIMDAL FM |
| Geodetic datum | ED50 |
| NS degrees | 59° 30' 52.34" N |
| EW degrees | 2° 3' 47.24" E |
| NS UTM [m] | 6597875.29 |
| EW UTM [m] | 446977.93 |



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|----------------|------|
| UTM zone | 31 |
| NPDID wellbore | 4765 |

Wellbore history

General

Well 25/4-8 was the second exploratory test of a large, irregular 4-way closure known as the Gekko structure, discovered by well 25/4-3 in 1974. The reservoir target was the Paleocene Heimdal formation, in a mapped culmination 1.7 km to the WNW of the discovery well. While well 25/4-3 found 8 m of hydrocarbons in a structurally low position, well 25/4-8 was expected to encounter a hydrocarbon column of 45m with an anticipated oil/water contact at 2107 m TVD SS.

Operations and results

Wildcat well 25/8-4 was spudded with the semi-submersible installation Deepsea Bergen on 3 June 2003 and drilled to TD at 2286 m in the Paleocene Heimdal Formation. Some problems with hole fill were experienced in the top 36" hole and repeated drill string stalling and sticking in the 17 1/2" section. After setting the 13 3/8" casing at 796 m these problems ceased and the well was drilled on to TD with no significant problems. The well was drilled with seawater down to 803 m and with Carbosea oil based mud from 803 m to TD.

Significant gas peaks were recorded in the interval 2096 m to 2129 m. Drilled cuttings were adversely affected by the use of PDC bits, especially in the sandstone intervals, and hydrocarbon shows were affected by the use of oil-based mud in the 8 1/2" hole section. Oil shows were however recorded on cores from 2082 m to 2134 m. Petrophysical evaluation of wire line logs acquired demonstrated that sands within the Lista Formation were gas bearing and that the Heimdal Formation is gas and oil bearing at the location with a gas-oil contact (GOC) at 2121.8 m (2098.8 m TVD SS) and an oil-water contact (OWC) at 2128.5 m (2105.5 m TVD SS). The OWC was 1.5 m shallow compared to that described for the exploration well 25/4-3 and is consistent with shows described from core and cuttings within the Heimdal. Two conventional cores were cut in the interval 2082 m to 2136 m in the Lista and Heimdal Formations. Fluid samples were taken with the MDT tool at 2097 m (gas), 2120 m (gas), and 2127.2 m (oil).

The well was permanently abandoned on 22 June as a gas and oil appraisal well.

Testing

No drill stem test was performed.

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Cuttings at the Norwegian Offshore Directorate

| Cutting sample, top depth [m] | Cutting samples, bottom depth [m] |
|-------------------------------|-----------------------------------|
| 1500.00 | 2286.20 |

| | |
|----------------------------------|-----|
| 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 | 2082.0 | 2107.1 | [m] |
| 2 | 2109.0 | 2135.6 | [m] |

| | |
|-------------------------------|------|
| Total core sample length [m] | 51.7 |
| Cores available for sampling? | YES |

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 | | 2120.00 | 0.00 | OIL | | YES |

Lithostratigraphy

| Top depth [mMD RKB] | Lithostrat. unit |
|---------------------|--------------------------------|
| 145 | NORDLAND GP |
| 385 | UTSIRA FM |
| 509 | NO FORMAL NAME |
| 777 | HORDALAND GP |
| 1219 | GRID FM |
| 1305 | NO FORMAL NAME |
| 1922 | ROGALAND GP |
| 1922 | BALDER FM |
| 2011 | SELE FM |
| 2060 | LISTA FM |
| 2113 | HEIMDAL FM |

Composite logs

| Document name | Document format | Document size [MB] |
|-----------------------------|-----------------|--------------------|
| 4765_25_4_8 | pdf | 0.28 |



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

| Document name | Document format | Document size [MB] |
|---|-----------------|--------------------|
| 4765 25 4 8 COMPLETION LOG | .PDF | 27.17 |
| 4765 25 4 8 COMPLETION REPORT | .PDF | 0.61 |

Logs

| Log type | Log top depth [m] | Log bottom depth [m] |
|------------------|-------------------|----------------------|
| M LWD - GR | 205 | 803 |
| MDT GR | 2092 | 2182 |
| PEX AIT DSI HNGS | 145 | 2284 |
| VSI GR | 631 | 2280 |

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 | 206.0 | 36 | 208.0 | 0.00 | LOT |
| SURF.COND. | 13 3/8 | 796.0 | 17 1/2 | 803.0 | 0.00 | LOT |
| OPEN HOLE | | 2082.0 | 12 1/4 | 2082.0 | 1.45 | LOT |
| OPEN HOLE | | 2286.0 | 8 1/2 | 2286.0 | 0.00 | LOT |

Drilling mud

| Depth MD [m] | Mud weight [g/cm3] | Visc. [mPa.s] | Yield point [Pa] | Mud type | Date measured |
|--------------|--------------------|---------------|------------------|---------------|---------------|
| 0 | 1.03 | | | SEAWATER | |
| 560 | 1.08 | | | SPUD MUD | |
| 803 | 1.14 | 45.0 | | KCL | |
| 1309 | 1.28 | 23.0 | | OIL (ENVIRON) | |
| 2286 | 1.28 | 21.0 | | OIL (ENVIRON) | |

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] |
|---|-----------------|--------------------|
| 4765 Formation pressure (Formasjonstrykk) | pdf | 0.22 |

