

**General information**

|                                    |                             |
|------------------------------------|-----------------------------|
| Wellbore name                      | 30/6-11                     |
| Type                               | EXPLORATION                 |
| Purpose                            | WILDCAT                     |
| Status                             | P&A                         |
| Factmaps in new window             | <a href="#">link to map</a> |
| Main area                          | NORTH SEA                   |
| Well name                          | 30/6-11                     |
| Seismic location                   | ST 703 146 SP 974           |
| Production licence                 | <a href="#">053</a>         |
| Drilling operator                  | Norsk Hydro Produksjon AS   |
| Drill permit                       | 358-L                       |
| Drilling facility                  | <a href="#">NORTRYM</a>     |
| Drilling days                      | 101                         |
| Entered date                       | 20.12.1982                  |
| Completed date                     | 30.03.1983                  |
| Release date                       | 30.03.1985                  |
| Publication date                   | 08.12.2015                  |
| Purpose - planned                  | WILDCAT                     |
| Reentry                            | NO                          |
| Content                            | SHOWS                       |
| Discovery wellbore                 | NO                          |
| Kelly bushing elevation [m]        | 25.0                        |
| Water depth [m]                    | 121.0                       |
| Total depth (MD) [m RKB]           | 4001.0                      |
| Final vertical depth (TVD) [m RKB] | 4001.0                      |
| Maximum inclination [°]            | 6.5                         |
| Bottom hole temperature [°C]       | 132                         |
| Oldest penetrated age              | EARLY JURASSIC              |
| Oldest penetrated formation        | STATFJORD GP                |
| Geodetic datum                     | ED50                        |
| NS degrees                         | 60° 43' 29.38" N            |
| EW degrees                         | 2° 44' 41.82" E             |
| NS UTM [m]                         | 6732324.06                  |
| EW UTM [m]                         | 486085.56                   |
| UTM zone                           | 31                          |
| NPDID wellbore                     | 58                          |



## Wellbore history

### General

Well 30/6-11 was drilled on the Delta structure on the Flatfisk Slope, close to the northwestern end of the Oseberg Fault Block in the North Sea. The primary objective was to find hydrocarbon accumulations in the Brent Group. Secondary objective was to find additional hydrocarbon accumulations within the Early Jurassic Cook Formation and Statfjord Group. The well was placed in an area where a complete Jurassic succession could be expected. Planned TD was 75 m into the Statfjord Group.

### Operations and results

Wildcat well 30/6-11 was spudded with the semi-submersible installation Nortrym on 20 December 1982 and drilled to TD at 4001 m in the Early Jurassic Statfjord Group. When running casing in the 17 1/2" section at 2165 m the rig had to wait on weather. Cavings accumulated as fill on the bottom and the casing was differentially stuck. Various additives were used to free the casing, including diesel. The well was drilled with seawater and hi-vis pills down to 235 m, with pre-hydrated bentonite and seawater from 235 m to 965 m, and with KCl/polymer mud from 965 m to 2165 m. From 2165 m to 3654 m, the KCl/polymer mud was slowly converted to a dispersed lignosulphonate/lignite mud and in the bottom 8 3/8" section, from 3654 m to TD a dispersed lignosulphonate/lignite mud system was used. From 2165 and downwards the diesel content in the mud was 5%, diminishing to traces below 3265 m.

The Brent Group (3351 - 3561m) had a gross thickness of 210 m with 118 m of net sand, giving a net to gross ratio of 0.56. The average porosity of the sandstones were calculated from wireline logs to 16% with an average water saturation of 80%. The Cook Formation (3752.5 - 3768.5m) had a net sand thickness of 3 m, giving a net to gross ratio of 0,19. The average porosity of the sandstones were calculated from wireline logs to 14% with an average water saturation of 55%. The Statfjord Group (3892.5 - 4001 m) had 85 m calculated as net sand giving a net to gross ratio of 0.86. The average porosity was calculated from logs to 11% with a water saturation varying from 60-100%.

Oil shows from both cuttings and cores together with high resistivity readings from the logs stated the presence of hydrocarbons in sandstones from the Brent Group, Cook Formation and in the very top of the Statfjord Group. All hydrocarbons were evaluated as residual. Drill stem testing and FMT sampling of the Brent Group produced no hydrocarbons. Otherwise, oil shows were described on limestone stringers in the interval 2515 m to 2635 m and on siltstones in the Late Jurassic between 3265 and 3320 m.

Seven cores were cut in this well, one in the Late Jurassic, 5 in the Etive Formation and one in the Cook Formation sandstones. An FMT fluid sample was taken at 3463.5 m. It recovered mud filtrate and water only.

The well was permanently abandoned on 30 March 1983 as dry with shows.

### Testing

A drill stem test was performed from the interval 3448.5 to 3454.5 m. The test gave no flow to surface and no samples of formation fluid could be recovered from the test string.

## Cuttings at the Norwegian Offshore Directorate



|                               |                                   |
|-------------------------------|-----------------------------------|
| Cutting sample, top depth [m] | Cutting samples, bottom depth [m] |
| 240.00                        | 4001.00                           |

|                                  |     |
|----------------------------------|-----|
| 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                  | 3265.0                  | 3266.8                     | [m ]                    |
| 2                  | 3452.0                  | 3460.0                     | [m ]                    |
| 3                  | 3461.0                  | 3465.9                     | [m ]                    |
| 4                  | 3468.5                  | 3484.5                     | [m ]                    |
| 5                  | 3484.5                  | 3501.7                     | [m ]                    |
| 6                  | 3502.5                  | 3508.0                     | [m ]                    |
| 7                  | 3756.0                  | 3768.0                     | [m ]                    |

|                               |      |
|-------------------------------|------|
| Total core sample length [m]  | 65.3 |
| Cores available for sampling? | YES  |

### Core photos



3265-3266m



3452-3457m



3457-3460m



3461-3466m



3468-3473m



3473-3478m



3478-3483m



3483-3484m



3484-3489m



3489-3494m





3494-3499m    3499-3501m    3502-3507m    3507-3508m    3756-3763m



3763-3768m

### Palynological slides at the Norwegian Offshore Directorate

| Sample depth | Depth unit | Sample type | Laboratory |
|--------------|------------|-------------|------------|
| 3262.5       | [m]        | SWC         | RRI        |
| 3266.8       | [m]        | C           | RRI        |
| 3303.5       | [m]        | SWC         | RRI        |
| 3340.5       | [m]        | SWC         | RRI        |
| 3349.0       | [m]        | SWC         | RRI        |
| 3415.0       | [m]        | SWC         | RRI        |
| 3454.5       | [m]        | C           | RRI        |
| 3458.4       | [m]        | C           | RRI        |
| 3461.4       | [m]        | C           | RRI        |
| 3474.8       | [m]        | C           | RRI        |
| 3484.5       | [m]        | C           | RRI        |
| 3507.1       | [m]        | C           | RRI        |
| 3540.0       | [m]        | SWC         | RRI        |
| 3562.5       | [m]        | SWC         | RRI        |
| 3570.0       | [m]        | DC          | FUGRO      |
| 3586.5       | [m]        | SWC         | RRI        |
| 3619.5       | [m]        | SWC         | RRI        |
| 3620.0       | [m]        | DC          | FUGRO      |
| 3635.0       | [m]        | SWC         | RRI        |
| 3645.5       | [m]        | SWC         | RRI        |
| 3660.0       | [m]        | SWC         | RRI        |
| 3660.0       | [m]        | DC          | FUGRO      |
| 3672.5       | [m]        | SWC         | RRI        |
| 3710.0       | [m]        | DC          | FUGRO      |
| 3711.5       | [m]        | SWC         | RRI        |
| 3727.0       | [m]        | SWC         | RRI        |
| 3745.0       | [m]        | DC          | FUGRO      |



|        |     |     |       |
|--------|-----|-----|-------|
| 3756.4 | [m] | C   | RRI   |
| 3768.0 | [m] | C   | RRI   |
| 3787.0 | [m] | DC  | FUGRO |
| 3798.0 | [m] | SWC | RRI   |
| 3825.0 | [m] | DC  | FUGRO |
| 3875.0 | [m] | DC  | FUGRO |
| 3890.0 | [m] | DC  | FUGRO |
| 3891.0 | [m] | SWC | RRI   |
| 3896.0 | [m] | SWC | RRI   |

**Lithostratigraphy**

| Top depth<br>[mMD RKB] | Lithostrat. unit             |
|------------------------|------------------------------|
| 146                    | <a href="#">NORDLAND GP</a>  |
| 720                    | <a href="#">UTSIRA FM</a>    |
| 909                    | <a href="#">HORDALAND GP</a> |
| 2055                   | <a href="#">ROGALAND GP</a>  |
| 2055                   | <a href="#">BALDER FM</a>    |
| 2127                   | <a href="#">SELE FM</a>      |
| 2239                   | <a href="#">LISTA FM</a>     |
| 2333                   | <a href="#">VÅLE FM</a>      |
| 2351                   | <a href="#">SHETLAND GP</a>  |
| 3260                   | <a href="#">VIKING GP</a>    |
| 3260                   | <a href="#">DRAUPNE FM</a>   |
| 3264                   | <a href="#">HEATHER FM</a>   |
| 3351                   | <a href="#">BRENT GP</a>     |
| 3351                   | <a href="#">NESS FM</a>      |
| 3459                   | <a href="#">ETIVE FM</a>     |
| 3561                   | <a href="#">DUNLIN GP</a>    |
| 3752                   | <a href="#">COOK FM</a>      |
| 3768                   | <a href="#">AMUNDSEN FM</a>  |
| 3893                   | <a href="#">STATFJORD GP</a> |

**Geochemical information**

| Document name        | Document format | Document size<br>[MB] |
|----------------------|-----------------|-----------------------|
| <a href="#">58_1</a> | pdf             | 0.40                  |
| <a href="#">58_2</a> | pdf             | 0.47                  |





|                      |     |      |
|----------------------|-----|------|
| <a href="#">58_3</a> | pdf | 3.87 |
| <a href="#">58_4</a> | pdf | 0.63 |

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

| Document name                                  | Document format | Document size [MB] |
|------------------------------------------------|-----------------|--------------------|
| <a href="#">58_01_WDSS_General_Information</a> | pdf             | 0.18               |
| <a href="#">58_02_WDSS_completion_log</a>      | pdf             | 0.35               |

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

| Document name                                        | Document format | Document size [MB] |
|------------------------------------------------------|-----------------|--------------------|
| <a href="#">58_30_6_11_COMPLETION_REPORT_AND_LOG</a> | pdf             | 16.56              |

**Drill stem tests (DST)**

| Test number | From depth MD [m] | To depth MD [m] | Choke size [mm] |
|-------------|-------------------|-----------------|-----------------|
| 1.0         | 3449              | 3455            | 0.0             |

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

| Test number | Oil [Sm <sup>3</sup> /day] | Gas [Sm <sup>3</sup> /day] | Oil density [g/cm <sup>3</sup> ] | Gas grav. rel.air | GOR [m <sup>3</sup> /m <sup>3</sup> ] |
|-------------|----------------------------|----------------------------|----------------------------------|-------------------|---------------------------------------|
| 1.0         |                            |                            |                                  |                   |                                       |

**Logs**

| Log type       | Log top depth [m] | Log bottom depth [m] |
|----------------|-------------------|----------------------|
| CBL VDL        | 2850              | 3634                 |
| CCL GR         | 3000              | 3504                 |
| CDL CNL CAL GR | 951               | 4001                 |





|                  |      |      |
|------------------|------|------|
| DIFL LSBHC GR SP | 233  | 4001 |
| DLL MLL CAL GR   | 3200 | 3646 |
| FMT              | 3259 | 3975 |
| HRD              | 2103 | 4001 |
| SWC              | 1412 | 4000 |
| VELOCITY         | 913  | 3985 |

### Casing and leak-off tests

| Casing type | Casing diam.<br>[inch] | Casing depth<br>[m] | Hole diam.<br>[inch] | Hole depth<br>[m] | LOT/FIT mud<br>eqv.<br>[g/cm3] | Formation test<br>type |
|-------------|------------------------|---------------------|----------------------|-------------------|--------------------------------|------------------------|
| CONDUCTOR   | 30                     | 235.0               | 36                   | 235.0             | 0.00                           | LOT                    |
| SURF.COND.  | 20                     | 951.0               | 26                   | 965.0             | 1.76                           | LOT                    |
| INTERM.     | 13 3/8                 | 2106.0              | 17 1/2               | 2165.0            | 1.70                           | LOT                    |
| INTERM.     | 9 5/8                  | 3639.0              | 12 1/4               | 3654.0            | 1.93                           | LOT                    |
| OPEN HOLE   |                        | 4000.0              | 8 3/8                | 4001.0            | 0.00                           | LOT                    |

### Drilling mud

| Depth<br>MD [m] | Mud<br>weight<br>[g/cm3] | Visc.<br>[mPa.s] | Yield point<br>[Pa] | Mud type   | Date<br>measured |
|-----------------|--------------------------|------------------|---------------------|------------|------------------|
| 220             | 1.06                     |                  |                     | waterbased |                  |
| 710             | 1.11                     | 53.0             |                     | waterbased |                  |
| 1190            | 1.21                     | 50.0             |                     | waterbased |                  |
| 1980            | 1.23                     | 54.0             |                     | waterbased |                  |
| 2570            | 1.34                     | 65.0             |                     | waterbased |                  |
| 3110            | 1.44                     | 50.0             |                     | waterbased |                  |
| 3680            | 1.43                     | 42.0             |                     | waterbased |                  |
| 4001            | 1.40                     | 51.0             |                     | waterbased |                  |

### Thin sections at the Norwegian Offshore Directorate

| Depth   | Unit |
|---------|------|
| 3505.75 | [m ] |
| 3503.30 | [m ] |
| 3494.30 | [m ] |
| 3486.50 | [m ] |
| 3482.80 | [m ] |
| 3476.30 | [m ] |



|         |      |
|---------|------|
| 3471.80 | [m ] |
| 3464.60 | [m ] |
| 3461.50 | [m ] |
| 3461.20 | [m ] |
| 3453.40 | [m ] |
| 3265.00 | [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] |
|---------------------------------------------------------|-----------------|--------------------|
| <a href="#">58 Formation pressure (Formasjonstrykk)</a> | pdf             | 0.22               |

