

**General information**

|                                    |                                            |
|------------------------------------|--------------------------------------------|
| Wellbore name                      | 15/6-6                                     |
| Type                               | EXPLORATION                                |
| Purpose                            | APPRAISAL                                  |
| Status                             | P&A                                        |
| Factmaps in new window             | <a href="#">link to map</a>                |
| Main area                          | NORTH SEA                                  |
| Field                              | <a href="#">SLEIPNER VEST</a>              |
| Discovery                          | <a href="#">15/6-3 Sleipner Vest</a>       |
| Well name                          | 15/6-6                                     |
| Seismic location                   | ST 8010 - 118 SP 345                       |
| Production licence                 | <a href="#">029</a>                        |
| Drilling operator                  | Esso Exploration and Production Norway A/S |
| Drill permit                       | 308-L                                      |
| Drilling facility                  | <a href="#">GLOMAR BISCAY II</a>           |
| Drilling days                      | 70                                         |
| Entered date                       | 01.04.1982                                 |
| Completed date                     | 09.06.1982                                 |
| Release date                       | 09.06.1984                                 |
| Publication date                   | 19.12.2007                                 |
| Purpose - planned                  | APPRAISAL                                  |
| Reentry                            | NO                                         |
| Content                            | GAS/CONDENSATE                             |
| Discovery wellbore                 | NO                                         |
| 1st level with HC, age             | MIDDLE JURASSIC                            |
| 1st level with HC, formation       | HUGIN FM                                   |
| Kelly bushing elevation [m]        | 25.0                                       |
| Water depth [m]                    | 110.0                                      |
| Total depth (MD) [m RKB]           | 3760.0                                     |
| Final vertical depth (TVD) [m RKB] | 3760.0                                     |
| Maximum inclination [°]            | 2.75                                       |
| Bottom hole temperature [°C]       | 122                                        |
| Oldest penetrated age              | LATE TRIASSIC                              |
| Oldest penetrated formation        | SKAGERRAK FM                               |
| Geodetic datum                     | ED50                                       |
| NS degrees                         | 58° 31' 14.7" N                            |
| EW degrees                         | 1° 44' 53.3" E                             |
| NS UTM [m]                         | 6487517.21                                 |



|                |           |
|----------------|-----------|
| EW UTM [m]     | 427079.83 |
| UTM zone       | 31        |
| NPDID wellbore | 38        |

## Wellbore history

### General

Well 15/6-6 was drilled to appraise the north eastern flank of Alpha structure on the 15/6-3 Sleipner Vest Discovery in the North Sea. The primary target was a gas bearing Jurassic sandstone known as the Hugin Formation. It was drilled to provide needed structural control and to establish a gas/water contact.

### Operations and results

Appraisal well 15/6-6 was spudded with the semi-submersible installation Glomar Biscay II on 1 April 1982 and drilled to TD at 3760 m in Late Triassic sediments of the Skagerrak Formation. The 36" hole had to be reamed several times due to ledging. This also occurred in the top of the 26" section. Forty-six bbl's (7.3 m<sup>3</sup>) of fluid were lost to the formation during cementing of the 13 3/8" casing. The mud weight in this section was 1.68 which is lower than the previous Sleipner wells. This and the fluid loss can possibly be related to an unconsolidated sand (Skade Formation) interval from 1185 to 1199 m. Minor hole problems were encountered in the 12 1/4" section. The drill string was temporarily stuck at 1627 m after making a connection. The well was drilled with seawater and gel.

The well proved sands in the Utsira, Grid, Heimdal, and Sleipner Formations; all water bearing. The gas bearing Hugin Formation was encountered at 3563 m and had a gross thickness of 58 m. The gas/water contact was found at 3607 m, which gives a gross gas interval of 44 m. No oil shows were reported from the target reservoir or other sections in the well.

Three cores were taken in the Middle Jurassic interval in the 8 1/2" section. Core 1 recovered 18.5 m sandstone from 3591 m to 3609.5 m. Core 2 recovered 16.0 m sandstone from 3609.5 m to 3622 m. Core 3 recovered 18.9 m Sandstone, shale and coal from 3625.5 m to 3644.5 m. No wire line fluid sample was taken.

The well was permanently abandoned on 9 June 1982 as a gas appraisal well.

### Testing

The well was tested in the interval 3568 - 3578 m in the Hugin Formation where reservoir data indicated significant accumulations of gas and condensate. The test produced 835000 Sm<sup>3</sup> gas and 278 Sm<sup>3</sup> condensate /day through a 56/64" choke. The GOR (gas/condensate ratio) was 3003 Sm<sup>3</sup>/Sm<sup>3</sup> and the condensate gravity was 47 dg API. The gas gravity was 0.762 (air = 1), the CO<sub>2</sub> content was 5 % and the H<sub>2</sub>S content was 7.5 ppm.

## Cuttings at the Norwegian Offshore Directorate

| Cutting sample, top depth [m] | Cutting samples, bottom depth [m] |
|-------------------------------|-----------------------------------|
| 210.00                        | 3760.00                           |



|                                  |     |
|----------------------------------|-----|
| 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                  | 3591.0                  | 3609.5                     | [m ]                    |
| 2                  | 3609.5                  | 3625.5                     | [m ]                    |
| 3                  | 3625.5                  | 3644.4                     | [m ]                    |

|                               |      |
|-------------------------------|------|
| Total core sample length [m]  | 53.4 |
| Cores available for sampling? | YES  |

### Palynological slides at the Norwegian Offshore Directorate

| Sample depth | Depth unit | Sample type | Laboratory |
|--------------|------------|-------------|------------|
| 500.0        | [m]        | DC          |            |
| 530.0        | [m]        | DC          |            |
| 560.0        | [m]        | DC          |            |
| 590.0        | [m]        | DC          |            |
| 620.0        | [m]        | DC          |            |
| 650.0        | [m]        | DC          |            |
| 690.0        | [m]        | DC          |            |
| 710.0        | [m]        | DC          |            |
| 740.0        | [m]        | DC          |            |
| 770.0        | [m]        | DC          |            |
| 800.0        | [m]        | DC          |            |
| 830.0        | [m]        | DC          |            |
| 860.0        | [m]        | DC          |            |
| 890.0        | [m]        | DC          |            |
| 920.0        | [m]        | DC          |            |
| 950.0        | [m]        | DC          |            |
| 980.0        | [m]        | DC          |            |
| 1010.0       | [m]        | DC          |            |
| 1040.0       | [m]        | DC          |            |
| 1070.0       | [m]        | DC          |            |
| 1100.0       | [m]        | DC          |            |
| 1130.0       | [m]        | DC          |            |
| 1160.0       | [m]        | DC          |            |
| 1190.0       | [m]        | DC          |            |



|            |    |  |
|------------|----|--|
| 1220.0 [m] | DC |  |
| 1250.0 [m] | DC |  |
| 1280.0 [m] | DC |  |
| 1310.0 [m] | DC |  |
| 1340.0 [m] | DC |  |
| 1370.0 [m] | DC |  |
| 1400.0 [m] | DC |  |
| 1430.0 [m] | DC |  |
| 1460.0 [m] | DC |  |
| 1490.0 [m] | DC |  |
| 1520.0 [m] | DC |  |
| 1550.0 [m] | DC |  |
| 1580.0 [m] | DC |  |
| 1610.0 [m] | DC |  |
| 1640.0 [m] | DC |  |
| 1670.0 [m] | DC |  |
| 1700.0 [m] | DC |  |
| 1730.0 [m] | DC |  |
| 1760.0 [m] | DC |  |
| 1790.0 [m] | DC |  |
| 1820.0 [m] | DC |  |
| 1850.0 [m] | DC |  |
| 1880.0 [m] | DC |  |
| 1910.0 [m] | DC |  |
| 1940.0 [m] | DC |  |
| 1970.0 [m] | DC |  |
| 2000.0 [m] | DC |  |
| 2030.0 [m] | DC |  |
| 2060.0 [m] | DC |  |
| 2090.0 [m] | DC |  |
| 2120.0 [m] | DC |  |
| 2150.0 [m] | DC |  |
| 2180.0 [m] | DC |  |
| 2210.0 [m] | DC |  |
| 2220.0 [m] | DC |  |
| 2230.0 [m] | DC |  |
| 2240.0 [m] | DC |  |
| 2250.0 [m] | DC |  |
| 2260.0 [m] | DC |  |
| 2270.0 [m] | DC |  |



|        |     |    |  |
|--------|-----|----|--|
| 2280.0 | [m] | DC |  |
| 2290.0 | [m] | DC |  |
| 2300.0 | [m] | DC |  |
| 2310.0 | [m] | DC |  |
| 2320.0 | [m] | DC |  |
| 2330.0 | [m] | DC |  |
| 2340.0 | [m] | DC |  |
| 2350.0 | [m] | DC |  |
| 2360.0 | [m] | DC |  |
| 2370.0 | [m] | DC |  |
| 2390.0 | [m] | DC |  |
| 2400.0 | [m] | DC |  |
| 2410.0 | [m] | DC |  |
| 2420.0 | [m] | DC |  |
| 2430.0 | [m] | DC |  |
| 2440.0 | [m] | DC |  |
| 2450.0 | [m] | DC |  |
| 2460.0 | [m] | DC |  |
| 2480.0 | [m] | DC |  |
| 2500.0 | [m] | DC |  |
| 2510.0 | [m] | DC |  |
| 2540.0 | [m] | DC |  |
| 2570.0 | [m] | DC |  |
| 2600.0 | [m] | DC |  |
| 2630.0 | [m] | DC |  |
| 2660.0 | [m] | DC |  |
| 2690.0 | [m] | DC |  |
| 2720.0 | [m] | DC |  |
| 2730.0 | [m] | DC |  |
| 2740.0 | [m] | DC |  |
| 2750.0 | [m] | DC |  |
| 2760.0 | [m] | DC |  |
| 2770.0 | [m] | DC |  |
| 2780.0 | [m] | DC |  |
| 2810.0 | [m] | DC |  |
| 2840.0 | [m] | DC |  |
| 2870.0 | [m] | DC |  |
| 2900.0 | [m] | DC |  |
| 2930.0 | [m] | DC |  |
| 2960.0 | [m] | DC |  |



|        |     |     |  |
|--------|-----|-----|--|
| 2990.0 | [m] | DC  |  |
| 3020.0 | [m] | DC  |  |
| 3050.0 | [m] | DC  |  |
| 3080.0 | [m] | DC  |  |
| 3110.0 | [m] | DC  |  |
| 3140.0 | [m] | DC  |  |
| 3170.0 | [m] | DC  |  |
| 3200.0 | [m] | DC  |  |
| 3230.0 | [m] | DC  |  |
| 3260.0 | [m] | DC  |  |
| 3290.0 | [m] | DC  |  |
| 3320.0 | [m] | DC  |  |
| 3350.0 | [m] | DC  |  |
| 3380.0 | [m] | DC  |  |
| 3401.0 | [m] | SWC |  |
| 3403.0 | [m] | SWC |  |
| 3407.0 | [m] | SWC |  |
| 3409.0 | [m] | DC  |  |
| 3410.0 | [m] | SWC |  |
| 3427.0 | [m] | SWC |  |
| 3436.5 | [m] | SWC |  |
| 3451.0 | [m] | DC  |  |
| 3462.0 | [m] | SWC |  |
| 3481.0 | [m] | DC  |  |
| 3482.0 | [m] | SWC |  |
| 3492.0 | [m] | SWC |  |
| 3495.0 | [m] | SWC |  |
| 3499.0 | [m] | SWC |  |
| 3511.0 | [m] | DC  |  |
| 3516.0 | [m] | SWC |  |
| 3524.0 | [m] | SWC |  |
| 3541.0 | [m] | DC  |  |
| 3543.0 | [m] | SWC |  |
| 3548.0 | [m] | SWC |  |
| 3554.5 | [m] | SWC |  |
| 3556.0 | [m] | SWC |  |
| 3558.0 | [m] | SWC |  |
| 3562.0 | [m] | SWC |  |
| 3571.0 | [m] | DC  |  |
| 3601.0 | [m] | DC  |  |



|        |     |     |  |
|--------|-----|-----|--|
| 3631.0 | [m] | DC  |  |
| 3648.2 | [m] | SWC |  |
| 3655.0 | [m] | DC  |  |
| 3659.2 | [m] | SWC |  |
| 3661.0 | [m] | DC  |  |
| 3664.0 | [m] | DC  |  |
| 3691.0 | [m] | DC  |  |
| 3702.0 | [m] | SWC |  |
| 3721.0 | [m] | DC  |  |
| 3740.0 | [m] | SWC |  |
| 3751.0 | [m] | DC  |  |

**Lithostratigraphy**

| Top depth<br>[mMD RKB] | Lithostrat. unit                |
|------------------------|---------------------------------|
| 135                    | <a href="#">NORDLAND GP</a>     |
| 807                    | <a href="#">UTSIRA FM</a>       |
| 1043                   | <a href="#">HORDALAND GP</a>    |
| 1141                   | <a href="#">SKADE FM</a>        |
| 1202                   | <a href="#">NO FORMAL NAME</a>  |
| 1917                   | <a href="#">GRID FM</a>         |
| 1971                   | <a href="#">NO FORMAL NAME</a>  |
| 2205                   | <a href="#">ROGALAND GP</a>     |
| 2205                   | <a href="#">BALDER FM</a>       |
| 2260                   | <a href="#">SELE FM</a>         |
| 2329                   | <a href="#">LISTA FM</a>        |
| 2353                   | <a href="#">HEIMDAL FM</a>      |
| 2647                   | <a href="#">LISTA FM</a>        |
| 2740                   | <a href="#">SHETLAND GP</a>     |
| 2740                   | <a href="#">EKOFISK FM</a>      |
| 2778                   | <a href="#">TOR FM</a>          |
| 3050                   | <a href="#">HOD FM</a>          |
| 3290                   | <a href="#">BLODØKS FM</a>      |
| 3354                   | <a href="#">SVARTE FM</a>       |
| 3377                   | <a href="#">CROMER KNOLL GP</a> |
| 3398                   | <a href="#">VIKING GP</a>       |
| 3398                   | <a href="#">DRAUPNE FM</a>      |
| 3418                   | <a href="#">HEATHER FM</a>      |
| 3563                   | <a href="#">VESTLAND GP</a>     |



|      |                                  |
|------|----------------------------------|
| 3563 | <a href="#">HUGIN FM</a>         |
| 3621 | <a href="#">SLEIPNER FM</a>      |
| 3655 | <a href="#">NO GROUP DEFINED</a> |
| 3655 | <a href="#">SKAGERRAK FM</a>     |

**Composite logs**

| Document name      | Document format | Document size [MB] |
|--------------------|-----------------|--------------------|
| <a href="#">38</a> | pdf             | 0.78               |

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

| Document name                                  | Document format | Document size [MB] |
|------------------------------------------------|-----------------|--------------------|
| <a href="#">38 01 WDSS General Information</a> | pdf             | 0.17               |
| <a href="#">38 02 WDSS completion log</a>      | pdf             | 0.28               |

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

| Document name                                                     | Document format | Document size [MB] |
|-------------------------------------------------------------------|-----------------|--------------------|
| <a href="#">38 01 15 6 6 Completion Report and Completion log</a> | pdf             | 34.77              |

**Drill stem tests (DST)**

| Test number | From depth MD [m] | To depth MD [m] | Choke size [mm] |
|-------------|-------------------|-----------------|-----------------|
| 1.0         | 3568              | 3578            | 22.2            |

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





| Test number | Oil [Sm3/day] | Gas [Sm3/day] | Oil density [g/cm3] | Gas grav. rel.air | GOR [m3/m3] |
|-------------|---------------|---------------|---------------------|-------------------|-------------|
| 1.0         | 278           | 835000        | 0.793               | 0.762             | 3003        |

**Logs**

| Log type         | Log top depth [m] | Log bottom depth [m] |
|------------------|-------------------|----------------------|
| AC CBL           | 2446              | 3630                 |
| CALIPER          | 160               | 424                  |
| CDL CNL GR       | 2763              | 3754                 |
| DIPLOG           | 2773              | 3749                 |
| DLL MLL          | 3500              | 3750                 |
| IEL BHC AC GR SP | 190               | 3753                 |
| TEMP             | 195               | 1174                 |
| TEMP             | 1500              | 2754                 |
| TEMP             | 3569              | 3716                 |
| VSP              | 1800              | 3748                 |

**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                  | 196.0            | 36                | 197.0          | 0.00                     | LOT                 |
| SURF.COND.  | 20                  | 447.0            | 26                | 465.0          | 1.54                     | LOT                 |
| INTERM.     | 13 3/8              | 1203.0           | 17 1/2            | 1218.0         | 1.67                     | LOT                 |
| INTERM.     | 9 5/8               | 2778.0           | 12 1/4            | 2794.0         | 1.72                     | LOT                 |
| LINER       | 7                   | 3686.0           | 8 1/2             | 3760.0         | 0.00                     | LOT                 |

**Drilling mud**

| Depth MD [m] | Mud weight [g/cm3] | Visc. [mPa.s] | Yield point [Pa] | Mud type   | Date measured |
|--------------|--------------------|---------------|------------------|------------|---------------|
| 380          | 1.08               | 41.0          |                  | waterbased |               |
| 720          | 1.10               | 40.0          |                  | waterbased |               |
| 1360         | 1.12               | 49.0          |                  | waterbased |               |
| 2420         | 1.16               | 51.0          |                  | waterbased |               |
| 3290         | 1.34               | 48.0          |                  | waterbased |               |
| 3440         | 1.34               | 47.0          |                  | waterbased |               |



|      |      |      |  |            |  |
|------|------|------|--|------------|--|
| 3610 | 1.36 | 42.0 |  | waterbased |  |
| 3660 | 1.34 | 47.0 |  | waterbased |  |

### 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="#">38 Formation pressure (Formasjonstrykk)</a> | pdf             | 0.23               |

