



## Generell informasjon

|                                          |                                |
|------------------------------------------|--------------------------------|
| Brønnbane navn                           | 15/2-1                         |
| Type                                     | EXPLORATION                    |
| Formål                                   | WILDCAT                        |
| Status                                   | P&A                            |
| Faktakart i nytt vindu                   | <a href="#">lenke til kart</a> |
| Hovedområde                              | NORTH SEA                      |
| Brønn navn                               | 15/2-1                         |
| Seismisk lokalisering                    | 753 228 SP 321                 |
| Utvinningstillatelse                     | <a href="#">048</a>            |
| Boreoperatør                             | Norsk Hydro Produksjon AS      |
| Boretillatelse                           | 310-L                          |
| Boreinnretning                           | <a href="#">NORTRYM</a>        |
| Boredager                                | 91                             |
| Borestart                                | 26.11.1981                     |
| Boreslutt                                | 24.02.1982                     |
| Frigitt dato                             | 24.02.1984                     |
| Publiseringsdato                         | 01.08.2010                     |
| Opprinnelig formål                       | WILDCAT                        |
| Gjenåpnet                                | NO                             |
| Innhold                                  | OIL/GAS SHOWS                  |
| Funnbrønnbane                            | NO                             |
| Avstand, boredekk - midlere havflate [m] | 25.0                           |
| Vanndybde ved midlere havflate [m]       | 109.0                          |
| Totalt målt dybde (MD) [m RKB]           | 4600.0                         |
| Maks inklinasjon [°]                     | 8.3                            |
| Temperatur ved bunn av brønnbanen [°C]   | 132                            |
| Eldste penetrerte alder                  | LATE PERMIAN                   |
| Eldste penetrerte formasjon              | ZECHSTEIN GP                   |
| Geodetisk datum                          | ED50                           |
| NS grader                                | 58° 45' 19.3" N                |
| ØV grader                                | 1° 35' 40.58" E                |
| NS UTM [m]                               | 6513814.19                     |
| ØV UTM [m]                               | 418684.57                      |
| UTM sone                                 | 31                             |
| NPDID for brønnbanen                     | 308                            |



## Brønnhistorie

### General

Well 15/2-1 was drilled in the Vilje sub-basin in the Viking Graben in the North Sea, ca 1.5 km from the UK border. The objective of the well 15/2-1 was to test the Upper Jurassic, Middle Jurassic, and Triassic sandstone reservoirs northwest of and down dip of the salt diapir encountered in the well 15/5-3. The well was planned to be drilled ca 200 m into the Triassic with a total depth of ca 4525 m.

### Operations and results

Wildcat well 15/2-1 was spudded with the semi-submersible installation Nortrym on 26 September 1981 and drilled to TD at 4600 m in the Late Permian Zechstein Group. No significant problems were encountered in the operations. The well was drilled with seawater and hi-vis pills down to 665 m and with Shaletrol polymer mud system from 665 m to 2750 m. At 2750 m the mud was converted to a dispersed mud system by adding lignosulphonate and this was used for the remaining well bore down to TD. There was 0 - 3% oil in the mud below 1168 m.

The well penetrated a number of sandstone Formations in the Tertiary (Skade, Grid, Intra Balder sandstone, Heimdal, and Ty Formations). All these were entirely water wet. The Hugin Formation (4356 - 4493 m) consisted of massive very fine grained sandstones with beds of coal on top. The Sleipner Formation (4493 - 4554.5 m) had a 10 m thick coal layer on top underlain by siltstones grading occasionally to very fine sandstones, interbeds of sandstones, and stringers of coal. The well did not penetrate any Early Jurassic or Triassic rocks, but encountered evaporites of Permian age at 4554.5 m, unconformably underlying the Sleipner Formation.

Good hydrocarbon shows were reported from both the Hugin and Sleipner Formations. However, wire line log evaluation and core analysis showed very poor reservoir parameters and no moveable hydrocarbons. Fluorescence and cut were observed also on limestone and shale cuttings in the Tor Formation at 2800 - 2835 and in the Early Cretaceous at 3815 - 3922 m

Three cores were cut from 4365 to 4405 m in the Hugin Formation. The RFT tool was run in the Hugin Formation. The formation proved to be tight and no wire line fluid samples were taken.

The well was permanently abandoned on 24 February 1982 as a dry well with shows.

### Testing

No drill stem test was performed.

## Borekaks i Sokkeldirektoratet

| Borekaksprøve, topp dybde [m] | Borekaksprøve, bunn dybde [m] |
|-------------------------------|-------------------------------|
| 200.00                        | 4600.00                       |

|                                        |     |
|----------------------------------------|-----|
| Borekaks tilgjengelig for prøvetaking? | YES |
|----------------------------------------|-----|



### Borekjerne i Sakkeldirektoratet

| Kjerneprøve nummer | Kjerneprøve - topp dybde | Kjerneprøve - bunn dybde | Kjerneprøve dybde - enhet |
|--------------------|--------------------------|--------------------------|---------------------------|
| 1                  | 4368.0                   | 4369.8                   | [m ]                      |
| 2                  | 4369.8                   | 4390.0                   | [m ]                      |

|                                       |      |
|---------------------------------------|------|
| Total kjerneprøve lengde [m]          | 22.0 |
| Kjerner tilgjengelig for prøvetaking? | YES  |

### Kjernebilder



4365-4368m



4368-4371m



4375-4378m



4379-4384m



4384-4389m

### Palynologiske preparater i Sakkeldirektoratet

| Prøve dybde | Dybde enhet | Prøve type | Laboratorie |
|-------------|-------------|------------|-------------|
| 2060.0      | [m]         | DC         | RRI         |
| 2070.0      | [m]         | DC         | RRI         |
| 2090.0      | [m]         | DC         | RRI         |
| 2110.0      | [m]         | DC         | RRI         |
| 2130.0      | [m]         | DC         | RRI         |
| 2140.0      | [m]         | DC         | RRI         |
| 2150.0      | [m]         | DC         | RRI         |
| 2170.0      | [m]         | DC         | RRI         |
| 2180.0      | [m]         | DC         | RRI         |
| 2210.0      | [m]         | DC         | RRI         |
| 2230.0      | [m]         | DC         | RRI         |
| 2260.0      | [m]         | DC         | RRI         |
| 2590.0      | [m]         | DC         | RRI         |
| 2610.0      | [m]         | DC         | RRI         |
| 2630.0      | [m]         | DC         | RRI         |
| 2640.0      | [m]         | DC         | RRI         |



|        |     |     |     |
|--------|-----|-----|-----|
| 2650.0 | [m] | DC  | RRI |
| 3650.0 | [m] | SWC | RRI |
| 3660.5 | [m] | SWC | RRI |
| 3669.0 | [m] | SWC | RRI |
| 3690.0 | [m] | SWC | RRI |
| 3705.0 | [m] | SWC | RRI |
| 3720.0 | [m] | SWC | RRI |
| 3736.0 | [m] | SWC | RRI |
| 3741.0 | [m] | SWC | RRI |
| 3750.0 | [m] | SWC | RRI |
| 3765.5 | [m] | SWC | RRI |
| 3779.0 | [m] | SWC | RRI |
| 3781.0 | [m] | SWC | RRI |
| 3839.0 | [m] | SWC | RRI |
| 3877.0 | [m] | SWC | RRI |
| 3880.0 | [m] | SWC | RRI |
| 3908.5 | [m] | SWC | RRI |
| 3927.0 | [m] | SWC | RRI |
| 3937.5 | [m] | SWC | RRI |
| 3948.5 | [m] | SWC | RRI |
| 3960.0 | [m] | SWC | RRI |
| 3974.0 | [m] | SWC | RRI |
| 4016.5 | [m] | SWC | RRI |
| 4030.5 | [m] | SWC | RRI |
| 4055.0 | [m] | SWC | RRI |
| 4089.5 | [m] | SWC | RRI |
| 4114.5 | [m] | SWC | RRI |
| 4131.0 | [m] | SWC | RRI |
| 4157.0 | [m] | SWC | RRI |
| 4166.0 | [m] | SWC | RRI |
| 4180.0 | [m] | SWC | RRI |
| 4198.5 | [m] | SWC | RRI |
| 4218.0 | [m] | SWC | RRI |
| 4234.5 | [m] | SWC | RRI |
| 4242.5 | [m] | SWC | RRI |
| 4262.0 | [m] | SWC | RRI |
| 4280.0 | [m] | SWC | RRI |
| 4288.0 | [m] | SWC | RRI |
| 4306.0 | [m] | SWC | RRI |
| 4311.0 | [m] | SWC | RRI |



|            |     |         |
|------------|-----|---------|
| 4317.0 [m] | SWC | RRI     |
| 4325.0 [m] | SWC | RRI     |
| 4336.5 [m] | SWC | RRI     |
| 4341.5 [m] | SWC | RRI     |
| 4352.0 [m] | SWC | RRI     |
| 4354.0 [m] | SWC | RRI     |
| 4357.0 [m] | SWC | RRI     |
| 4364.5 [m] | SWC | RRI     |
| 4365.3 [m] | C   | WESTLAB |
| 4365.8 [m] | C   | RRI     |
| 4368.8 [m] | C   | WESTLAB |
| 4370.4 [m] | C   | WESTLA  |
| 4372.3 [m] | C   | WESTLA  |
| 4375.3 [m] | C   | WESTLA  |
| 4375.9 [m] | C   | RRI     |
| 4378.1 [m] | C   | WESTLAB |
| 4381.9 [m] | C   | WESTLA  |
| 4386.0 [m] | C   | WESTLA  |
| 4387.7 [m] | C   | WESTLA  |
| 4388.7 [m] | C   | WESTLA  |
| 4389.7 [m] | C   | RRI     |
| 4389.9 [m] | C   | WESTLAB |
| 4390.4 [m] | C   | RRI     |
| 4392.0 [m] | C   | RRI     |
| 4396.0 [m] | C   | RRI     |
| 4397.5 [m] | C   | RRI     |
| 4399.7 [m] | C   | RRI     |
| 4399.8 [m] | C   | WESTLAB |
| 4405.0 [m] | C   | RRI     |
| 4405.0 [m] | SWC | RRI     |
| 4424.0 [m] | SWC | RRI     |
| 4446.0 [m] | SWC | RRI     |
| 4481.0 [m] | SWC | RRI     |
| 4494.5 [m] | SWC | RRI     |
| 4535.0 [m] | SWC | RRI     |
| 4548.0 [m] | SWC | RRI     |
| 4554.0 [m] | SWC | RRI     |

## Litostratigrafi



| Topp Dyb<br>[mMD RKB] | Litostrat. enhet                   |
|-----------------------|------------------------------------|
| 134                   | <a href="#">NORDLAND GP</a>        |
| 706                   | <a href="#">UTSIRA FM</a>          |
| 842                   | <a href="#">HORDALAND GP</a>       |
| 1150                  | <a href="#">SKADE FM</a>           |
| 1199                  | <a href="#">NO FORMAL NAME</a>     |
| 1428                  | <a href="#">GRID FM</a>            |
| 1824                  | <a href="#">NO FORMAL NAME</a>     |
| 2058                  | <a href="#">ROGALAND GP</a>        |
| 2058                  | <a href="#">BALDER FM</a>          |
| 2103                  | <a href="#">INTRA BALDER FM SS</a> |
| 2118                  | <a href="#">BALDER FM</a>          |
| 2148                  | <a href="#">SELE FM</a>            |
| 2178                  | <a href="#">LISTA FM</a>           |
| 2236                  | <a href="#">HEIMDAL FM</a>         |
| 2494                  | <a href="#">LISTA FM</a>           |
| 2572                  | <a href="#">TY FM</a>              |
| 2640                  | <a href="#">VÅLE FM</a>            |
| 2655                  | <a href="#">SHETLAND GP</a>        |
| 2655                  | <a href="#">EKOFISK FM</a>         |
| 2731                  | <a href="#">TOR FM</a>             |
| 2920                  | <a href="#">HOD FM</a>             |
| 3506                  | <a href="#">BLODØKS FM</a>         |
| 3551                  | <a href="#">HIDRA FM</a>           |
| 3668                  | <a href="#">CROMER KNOLL GP</a>    |
| 3668                  | <a href="#">RØDBY FM</a>           |
| 3733                  | <a href="#">SOLA FM</a>            |
| 3805                  | <a href="#">ÅSGARD FM</a>          |
| 3878                  | <a href="#">VIKING GP</a>          |
| 3878                  | <a href="#">DRAUPNE FM</a>         |
| 4211                  | <a href="#">HEATHER FM</a>         |
| 4356                  | <a href="#">VESTLAND GP</a>        |
| 4356                  | <a href="#">HUGIN FM</a>           |
| 4393                  | <a href="#">SLEIPNER FM</a>        |
| 4555                  | <a href="#">ZECHSTEIN GP</a>       |

## Spleisede logger





| Dokument navn       | Dokument format | Dokument størrelse [KB] |
|---------------------|-----------------|-------------------------|
| <a href="#">308</a> | pdf             | 0.88                    |

### Geokjemisk informasjon

| Dokument navn         | Dokument format | Dokument størrelse [KB] |
|-----------------------|-----------------|-------------------------|
| <a href="#">308_1</a> | pdf             | 0.41                    |
| <a href="#">308_2</a> | pdf             | 2.27                    |

### Dokumenter - eldre Sjøkeldirektoratets WDSS rapporter og andre relaterte dokumenter

| Dokument navn                                   | Dokument format | Dokument størrelse [KB] |
|-------------------------------------------------|-----------------|-------------------------|
| <a href="#">308_01_WDSS_General_Information</a> | pdf             | 0.16                    |
| <a href="#">308_02_WDSS_completion_log</a>      | pdf             | 0.34                    |

### Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

| Dokument navn                                | Dokument format | Dokument størrelse [KB] |
|----------------------------------------------|-----------------|-------------------------|
| <a href="#">308_15_2_1_Completion_log</a>    | pdf             | 3.37                    |
| <a href="#">308_15_2_1_Completion_report</a> | pdf             | 35.90                   |

### Logger

| Type logg | Topp dyp for logg [m] | Bunn dyp for logg [m] |
|-----------|-----------------------|-----------------------|
| CBL VDL   | 400                   | 3763                  |
| CST       | 1429                  | 2748                  |
| CST       | 1429                  | 2705                  |
| CST       | 2764                  | 3520                  |
| CST       | 3537                  | 3781                  |
| CST       | 3789                  | 4114                  |
| CST       | 3844                  | 4516                  |
| CST       | 4131                  | 4354                  |
| CST       | 4357                  | 4554                  |
| FDC CNL   | 653                   | 4600                  |
| HDT       | 2736                  | 4565                  |





|           |      |      |
|-----------|------|------|
| ISF SONIC | 134  | 4599 |
| RFT       | 4365 | 4417 |
| RFT       | 4416 | 4419 |

Foringsrør og formasjonsstyrketester

| Type utforing | Utforing diam.<br>[tommer] | Utforing dybde<br>[m] | Brønnbane diam.<br>[tommer] | Brønnbane dyp<br>[m] | LOT/FIT slam<br>eqv.<br>[g/cm3] | Type formasjonstest |
|---------------|----------------------------|-----------------------|-----------------------------|----------------------|---------------------------------|---------------------|
| CONDUCTOR     | 30                         | 196.0                 | 36                          | 196.0                | 0.00                            | LOT                 |
| SURF.COND.    | 20                         | 653.0                 | 26                          | 655.0                | 1.72                            | LOT                 |
| INTERM.       | 13 3/8                     | 2737.0                | 17 1/2                      | 2750.0               | 1.71                            | LOT                 |
| INTERM.       | 9 5/8                      | 3770.0                | 12 1/4                      | 3786.0               | 1.99                            | LOT                 |
| OPEN HOLE     |                            | 4600.0                | 8 3/8                       | 4600.0               | 0.00                            | LOT                 |

Boreslam

| Dybde MD [m] | Egenvekt, slam<br>[g/cm3] | Viskositet, slam<br>[mPa.s] | Flytegrense [Pa] | Type slam  | Dato, måling |
|--------------|---------------------------|-----------------------------|------------------|------------|--------------|
| 250          | 1.08                      | 36.0                        |                  | waterbased |              |
| 650          | 1.11                      | 32.0                        |                  | waterbased |              |
| 1560         | 1.11                      | 65.0                        |                  | waterbased |              |
| 2180         | 1.20                      | 65.0                        |                  | waterbased |              |
| 2840         | 1.23                      | 65.0                        |                  | waterbased |              |
| 3160         | 1.25                      | 65.0                        |                  | waterbased |              |
| 3840         | 1.75                      | 67.0                        |                  | waterbased |              |
| 4150         | 1.89                      | 59.0                        |                  | waterbased |              |
| 4580         | 1.88                      | 60.0                        |                  | waterbased |              |