



## Generell informasjon

|                                          |                                         |
|------------------------------------------|-----------------------------------------|
| Brønnbane navn                           | 7220/11-2 A                             |
| Type                                     | EXPLORATION                             |
| Formål                                   | APPRAISAL                               |
| Status                                   | P&A                                     |
| Pressemelding                            | <a href="#">lenke til pressemelding</a> |
| Faktakart i nytt vindu                   | <a href="#">lenke til kart</a>          |
| Hovedområde                              | BARENTS SEA                             |
| Funn                                     | <a href="#">7220/11-1 (Alta)</a>        |
| Brønn navn                               | 7220/11-2                               |
| Seismisk lokalisering                    | LN12M01 inline 29260 & crossline 24266  |
| Utvinningstillatelse                     | <a href="#">609</a>                     |
| Boreoperatør                             | Lundin Norway AS                        |
| Boretillatelse                           | 1577-L                                  |
| Boreinnretning                           | <a href="#">ISLAND INNOVATOR</a>        |
| Boredager                                | 43                                      |
| Borestart                                | 03.05.2015                              |
| Boreslutt                                | 14.06.2015                              |
| Frigitt dato                             | 14.06.2017                              |
| Publiseringsdato                         | 14.06.2017                              |
| Opprinnelig formål                       | APPRAISAL                               |
| Gjenåpnet                                | NO                                      |
| Innhold                                  | OIL/GAS                                 |
| Funnbrønnbane                            | NO                                      |
| 1. nivå med hydrokarboner, alder         | TRIASSIC                                |
| 1. nivå med hydrokarboner, formasjon.    | UNDIFFERENTIATED                        |
| Avstand, boredekk - midlere havflate [m] | 30.0                                    |
| Vanndybde ved midlere havflate [m]       | 379.0                                   |
| Totalt målt dybde (MD) [m RKB]           | 2121.0                                  |
| Totalt vertikalt dybde (TVD) [m RKB]     | 2071.0                                  |
| Maks inklinasjon [°]                     | 19.3                                    |
| Temperatur ved bunn av brønnbanen [°C]   | 73                                      |
| Eldste penetrerte formasjon              | BASEMENT                                |
| Geodetisk datum                          | ED50                                    |
| NS grader                                | 72° 0' 37.55" N                         |
| ØV grader                                | 20° 26' 9.01" E                         |



|                      |            |
|----------------------|------------|
| NS UTM [m]           | 7998765.38 |
| ØV UTM [m]           | 687161.60  |
| UTM sone             | 33         |
| NPDID for brønnbanen | 7693       |

## Brønnhistorie

### General

Well 7220/11-2 A is a geological sidetrack to well 7220/11-2. Both wells were drilled to appraise the 7220/11-1 Alta discovery. The main well found gas in Early Triassic sandstones and conglomerate, but no producible oil due to tight formation in the lower part of the reservoir. The objective of 7220/11-2 A was to investigate reservoir quality and confirm the presence of an oil leg on the western flank of the Alta structure.

### Operations and results

Appraisal well 7220/11-2 A was kicked off at 635 m in the main well on 3 May 2015. It was drilled with the semi-submersible installation Island Innovator to TD at 2121 m (2071 m TVD) in basement rocks. No significant problem was encountered in the operations. The well was drilled with Aquadril mud from kick-off to TD.

Top of the target reservoir was encountered at 1951.8 m (1901.7 m TVD). The reservoir consists of Early Triassic sandstone and conglomerates, similar as in the main well. The reservoir was oil and gas bearing. The contacts in the 7220/11-1 discovery well were not confirmed; however, pressure points indicated a common fluid system with the main well and with 7220/11-1. The thickness of the reservoir is 102 m TVD, ca 13 m thicker than in the main well. Between base reservoir and top basement, well 7220/11-2 A penetrated a 14 m thick sequence with marl, claystone and dolomite, possibly belonging to the Gipsdalen Group. Oil shows were similar as in the main well bore: on siltstone and sandstones from top Toscana Group to top reservoir, throughout the reservoir, and down to 2079 m in the basement.

Six conventional cores were cut in the interval 1926.6 to 2048.66 m (125.9 m). Recovery for core 1 was 99%, for the remaining cores recovery was 100%. The core-log depth shift is -2.19 m for all cores. MDT fluid samples were taken at 1967.15 m (oil), 1989.71 m (oil), 2008.72 m (water), and 2030.11 m (water)

The well was permanently abandoned on 14 June 2015 as an oil and gas appraisal well.

### Testing

A production test was performed from the interval 1965.2 to 1997.37 m. The test produced 136 Sm<sup>3</sup> oil and 18500 Sm<sup>3</sup> gas /day through a 24/64" choke in the main flow. The flowing temperature was 68.8 °C, measured at 1952.6 m.

## Borekaks i Sokkeldirektoratet

|                               |                               |
|-------------------------------|-------------------------------|
| Borekaksprøve, topp dybde [m] | Borekaksprøve, bunn dybde [m] |
| 620.00                        | 2121.00                       |

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



### Borekjerener i Sokkeldirektoratet

| Kjerneprøve nummer | Kjerneprøve - topp dybde | Kjerneprøve - bunn dybde | Kjerneprøve dybde - enhet |
|--------------------|--------------------------|--------------------------|---------------------------|
| 1                  | 1926.6                   | 1936.4                   | [m ]                      |
| 2                  | 1936.5                   | 1937.8                   | [m ]                      |
| 3                  | 1937.8                   | 1965.6                   | [m ]                      |
| 4                  | 1965.6                   | 1993.6                   | [m ]                      |
| 5                  | 1993.6                   | 2021.1                   | [m ]                      |
| 6                  | 2021.1                   | 2048.6                   | [m ]                      |

|                                       |       |
|---------------------------------------|-------|
| Total kjerneprøve lengde [m]          | 121.9 |
| Kjerner tilgjengelig for prøvetaking? | YES   |

### Oljeprøver i Sokkeldirektoratet

| Test type | Flaske nummer | Topp dyp MD [m] | Bunn dyp MD [m] | Væske type | Test tidspunkt     | Prøver tilgjengelig |
|-----------|---------------|-----------------|-----------------|------------|--------------------|---------------------|
| MDT       |               | 0.00            | 0.00            | OIL        | 04.06.2015 - 00:00 | YES                 |
| MDT       |               | 0.00            | 0.00            | OIL        | 04.06.2015 - 00:00 | YES                 |

### Litostratigrafi

| Topp Dyb [mMD RKB] | Litostrat. enhet                 |
|--------------------|----------------------------------|
| 409                | <a href="#">NORDLAND GP</a>      |
| 409                | <a href="#">UNDIFFERENTIATED</a> |
| 465                | <a href="#">SOTBAKKEN GP</a>     |
| 465                | <a href="#">TORSK FM</a>         |
| 587                | <a href="#">ADVENTDALEN GP</a>   |
| 587                | <a href="#">KOLMULE FM</a>       |
| 623                | <a href="#">KAPP TOSCANA GP</a>  |
| 623                | <a href="#">SNADD FM</a>         |
| 1927               | <a href="#">SASSENDALLEN GP</a>  |
| 1927               | <a href="#">KOBBE FM</a>         |
| 1952               | <a href="#">NO GROUP DEFINED</a> |



|      |                                  |
|------|----------------------------------|
| 1952 | <a href="#">UNDIFFERENTIATED</a> |
| 2054 | <a href="#">NO GROUP DEFINED</a> |
| 2054 | <a href="#">UNDIFFERENTIATED</a> |
| 2068 | <a href="#">BASEMENT</a>         |

**Borestrengtester (DST)**

| Test nummer | Fra dybde MD [m] | Til dybde MD [m] | Reduksjonsven til størrelse [mm] |
|-------------|------------------|------------------|----------------------------------|
| 1.0         | 1965             | 1997             | 9.5                              |

| Test nummer | Endelig avstengningstrykk [MPa] | Endelig strømningstrykk [MPa] | Bunnhullstrykk [MPa] | Borehullstemperatur [°C] |
|-------------|---------------------------------|-------------------------------|----------------------|--------------------------|
| 1.0         |                                 |                               |                      |                          |

| Test nummer | Olje produksjon [Sm3/dag] | Gass produksjon [Sm3/dag] | Oljetetthet [g/cm3] | Gasstygde rel. luft | GOR [m3/m3] |
|-------------|---------------------------|---------------------------|---------------------|---------------------|-------------|
| 1.0         | 136                       | 24000                     |                     |                     | 141         |

**Logger**

| Type logg                       | Topp dyp for logg [m] | Bunn dyp for logg [m] |
|---------------------------------|-----------------------|-----------------------|
| CMR XPT ADT                     | 1911                  | 2110                  |
| FMI MSIP                        | 409                   | 2119                  |
| MDT                             | 1928                  | 2052                  |
| MWD - BR GR REMP BHPR MECH AAC  | 566                   | 1222                  |
| MWD - GR BHPR MECH              | 409                   | 465                   |
| MWD - GR REMP BHPR MECH DEN NEU | 1158                  | 2121                  |
| MWD - GR REMP BHPR MECH AAC     | 456                   | 598                   |
| UBI PEX HRLA HNGS NEXT          | 1851                  | 2113                  |
| USIT                            | 1790                  | 2120                  |

**Foringsrør og formasjonsstyrketester**



| Type utforing | Utforing<br>diam.<br>[tommer] | Utforing<br>dybde<br>[m] | Brønnbane<br>diam.<br>[tommer] | Brønnbane<br>dyp<br>[m] | LOT/FIT slam<br>eqv.<br>[g/cm3] | Type<br>formasjonstest |
|---------------|-------------------------------|--------------------------|--------------------------------|-------------------------|---------------------------------|------------------------|
| CONDUCTOR     | 30                            | 476.0                    | 36                             | 479.0                   | 0.00                            |                        |
| SURF.COND.    | 20                            | 591.3                    | 26                             | 599.0                   | 1.57                            | FIT                    |
| PILOT HOLE    |                               | 601.0                    | 9 7/8                          | 601.0                   | 0.00                            |                        |
| INTERM.       | 13 3/8                        | 1215.2                   | 17 1/2                         | 1222.0                  | 1.80                            | FIT                    |
| INTERM.       | 9 5/8                         | 1853.0                   | 12 1/4                         | 1860.0                  | 1.68                            | LOT                    |
| LINER         | 7                             | 2120.0                   | 8 1/2                          | 2121.0                  | 0.00                            |                        |

Boreslam

| Dybde<br>MD [m] | Egenvekt,<br>slam<br>[g/cm3] | Viskositet,<br>slam<br>[mPa.s] | flytegrense<br>[Pa] | Type slam   | Dato, måling |
|-----------------|------------------------------|--------------------------------|---------------------|-------------|--------------|
| 1026            | 1.23                         | 23.0                           |                     | Water Based |              |
| 1222            | 1.25                         | 19.0                           |                     | Water Based |              |
| 1494            | 1.23                         | 11.0                           |                     | Water Based |              |
| 1729            | 1.23                         | 16.0                           |                     | Water Based |              |
| 1865            | 1.15                         | 9.0                            |                     | Water Based |              |
| 1938            | 1.15                         | 12.0                           |                     | Water Based |              |
| 2120            | 1.14                         | 1.0                            |                     | Water Based |              |
| 2121            | 1.15                         | 15.0                           |                     | Water Based |              |