



## Wellbore History

### GENERAL

The purpose of well 31/2-18 was to appraise the structure and oil bearing potential of a fault block in the northern part of the Troll West Gas province (TWGP). The objectives for drilling well 31/2-18 were to evaluate the structure for future development of oil producing wells in the TWGP-North area, and to determine the degree of development required to efficiently develop the oil reservoir in the TWGP-North area. Well 31/2-18A was drilled as a pre-planned sidetrack to Well 31/2-18 in order to evaluate the hydrocarbon potential of the Krossfjord Formation. The primary objective of the sidetrack was to evaluate a seismic anomaly, or "flat spot" which had been identified in the Krossfjord Formation. The location of the anomaly was situated 240 m to the northeast in an up thrown block, adjacent to the original well.

### OPERATIONS

Appraisal well 31/2-18 was spudded with the semi-submersible installation "Treasure Saga" on 15 September 1992, and drilled to a total depth of 1711 m in the Middle Jurassic Fensfjord Formation. The well was drilled with seawater and hi-vis pills down to 940 m and with KCl/Polymer mud from 940 m to TD.

Palaeocene sand was encountered below base Våle Formation, from 1519.9 m to 1528.8 m. This sand is in direct contact with the underlying Late Jurassic Sognefjord Formation, which was encountered over the interval 1528.8 m - 1642.7 m. Gas was proven all through these sands from top of the Palaeocene sand down to 1571.2 m in the Sognefjord Formation. A thin oil leg was identified, with an oil-water contact at 1582.0 m. Sixteen good RFT pressure measurements, including segregated samples at 1575 m and 1582 m, were taken in one run over the interval 1522 m & 1689.5 m. The interval from 1498 m to 1678.5 m (Lower Rogaland Group including the Palaeocene sand, Sognefjord Formation, and Heather Formation) was cored in twelve cores with 86 100 % recovery.

After running wire line logs, well 31/2-18 A was sidetracked with "Treasure Saga" from the original well on 7 October 1992. The sidetrack was initiated at 1470 m, just below the 9-5/8" casing shoe, and reached a total depth of 2005 m in the Krossfjord Formation. The sidetrack was drilled with KCl/Polymer mud.

Equivalent to the primary well bore the Våle Formation occurred from 1497 m to 1520 m, on top of a 9.6 m thick Paleocene sand. This sand was found gas bearing and in communication with the underlying Sognefjord Formation. The Sognefjord Formation was encountered between 1529.6 m and 1654.5 m and proved to be gas bearing down to 1572.9 m MD (1570.8 m TVD RKB). A thin oil zone was identified between 1572.9 m and 1584.5 m, (1570.8 - 1581.9 m TVD RKB). The Krossfjord Formation was encountered at 1915.5 m, and was found to be oil bearing from 1915.5 m to 1925.1 m, (1828.5 - 1835.0 m TVD RKB). Two segregated samples at 1919.3 m and 1584 m and a total of 20 pressure measurements and were taken in two RFT runs. No conventional cores were cut in the sidetrack.

After running wire line logs, the well was plugged back, without testing, to the 9-5/8" casing shoe on 13 October 1992. Wellbore 31/2-18 was subsequently permanently plugged and abandoned as an oil and gas appraisal well on 17 October 1992.

### TESTING

No drill stem test was performed.

## LITHOSTRATIGRAPHY & HISTORY FOR WELL: 31/2-18 A