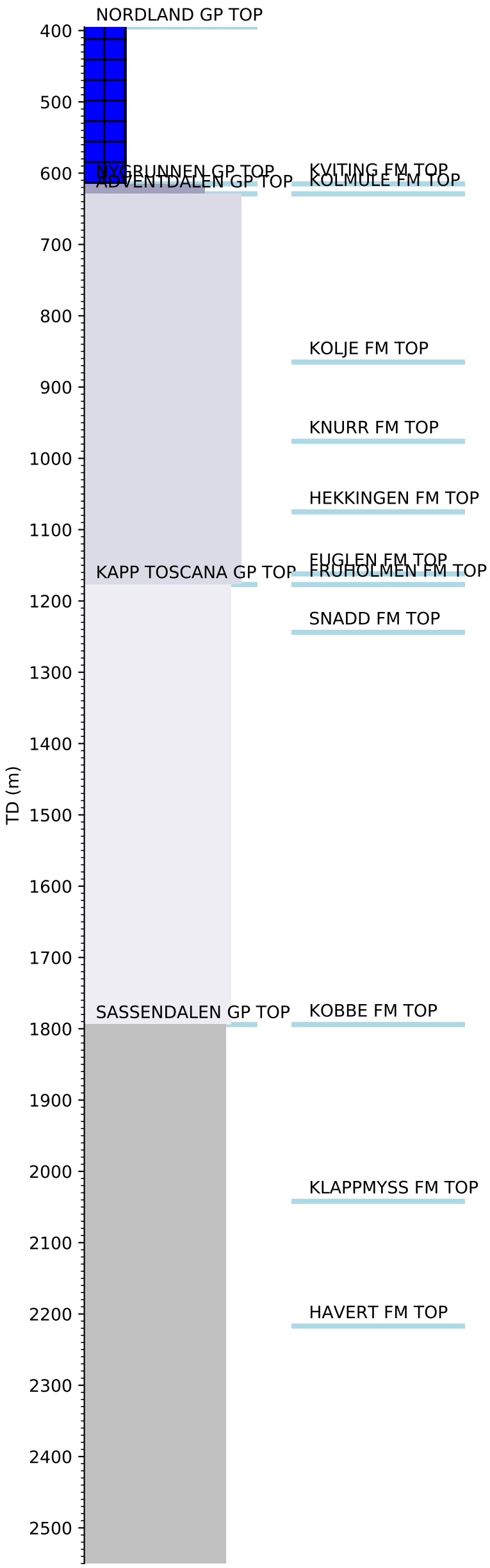
Groups

Formation Tops



Wellbore History

Well 7122/7-4 S was drilled 1.8 km northeast of well 7122/7-3 on the Goliat Discovery. The purpose was to prove the OWC and additional oil reserves down dip in the Kap Toscana Group deeper than the ODT in 7122/7-3 and to confirm the up dip oil and gas reserves (GOC) in the Kobbe Formation. The 7122/7-4 S well is the fourth appraisal well on the Goliat discovery.

OPERATIONS AND RESULTS

Well 7122/7-4 S was spudded with the semi-submersible installation Polar Pioneer on 21 September 2006 and drilled to TD at 2550 m in the Early Triassic (Griesbachian age) Havert Formation. The well was drilled vertical down through the Kap Toscana Group and then deviated to TD. No significant technical problems were encountered during the operations. The well was drilled with sea water and hi-vis sweeps down to 1050 m. Formate mud previously used for drilling the 7122/7-1, -2 and -3 wells was re-used in this well from 1050 m to TD.

Top Kap Toscana reservoir was penetrated at 1177 m, 14 m deeper than the prognosis. The reservoir consisted of very fine to fine sandstone and was water-bearing, but shows were recorded on cores from the upper part of the Kap Toskana Group. Top Snadd Formation was penetrated at 1244 m, 26 m deeper than prognosis. The reservoir consisted of sandstone interbedded with siltstone and claystone and was water bearing, but with weak, scattered shows in the interval 1260 to 1370 m. The third reservoir, in the Kobbe Formation, was found at 1793 m (1737 m TVD RKB), 5 m deeper than prognosis. The Kobbe Formation reservoir had a gas cap with the GOC at 1856 m (1790.5 m TVD RKB). The OWC was not clear-cut, but was estimated at 1957 m (1876 m TVD RKB). The upper part of the Kobbe Formation consisted of clean light grey, very fine to coarse Sandstone bodies. The sandstone bodies varied from 1 to 18 m thick with the thickness of the beds decreasing with depth. The Sandstone porosity was between 20 % and 30 % and permeability up to 4000 mD. The sandstones were interbedded with 1 to 10 m thick siltstone beds in the upper section. Below 1950 m the sandstone layers became less and thinner while the siltstone/claystone beds increased in thickness. Below 1990 m the Kobbe Formation consisted almost entirely of marine claystone. A fourth reservoir in the Klappmyss Formation was encountered at 2040.5 m (1947 m TVD RKB), 11 m shallower than prognosis. The reservoir consisted of interbedded sandstones, siltstones and claystones and was oil bearing with an OWC at 2072.5 m (1973 m TVD RKB).

Six cores were cut. Two were cut from 1182.5 to 1216 m in the Kap Toscana Group, two were cut from 1794 to 1820.64 m in the upper part of the Kobbe Formation, one was cut from 1885 to 1886 m in the oil zone of the Kobbe Formation, and one was cut from 2052 to 2064 m in the Klappmyss Formation. MDT fluid samples were taken at 1177.5 and 1185.6 m in the Kap Toscana Group (water), at 1808.1 m (gas) and 1913 m (oil), and 1989.1 m (water) in the Kobbe Formation and at 2045.1 m (oil) in the Klappmyss Formation.

The well was permanently abandoned on 25 November 2006 as a Klappmyss Formation oil discovery.

TESTING

An unconventional well test was performed (Injection test) in order to test the well with the smallest amount of produced hydrocarbons. This technique was successfully full scale tested on Goliath for the first time by ENI. The Kobbe Formation was perforated in the interval 1911-1927 m. Before the injection test, a 5 hours clean-up period was performed in order to recover a significant volume of dead oil for both flow assurance and separator test analysis. This resulted in a total of 30.5 m3 produced oil.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7122/7-4 S