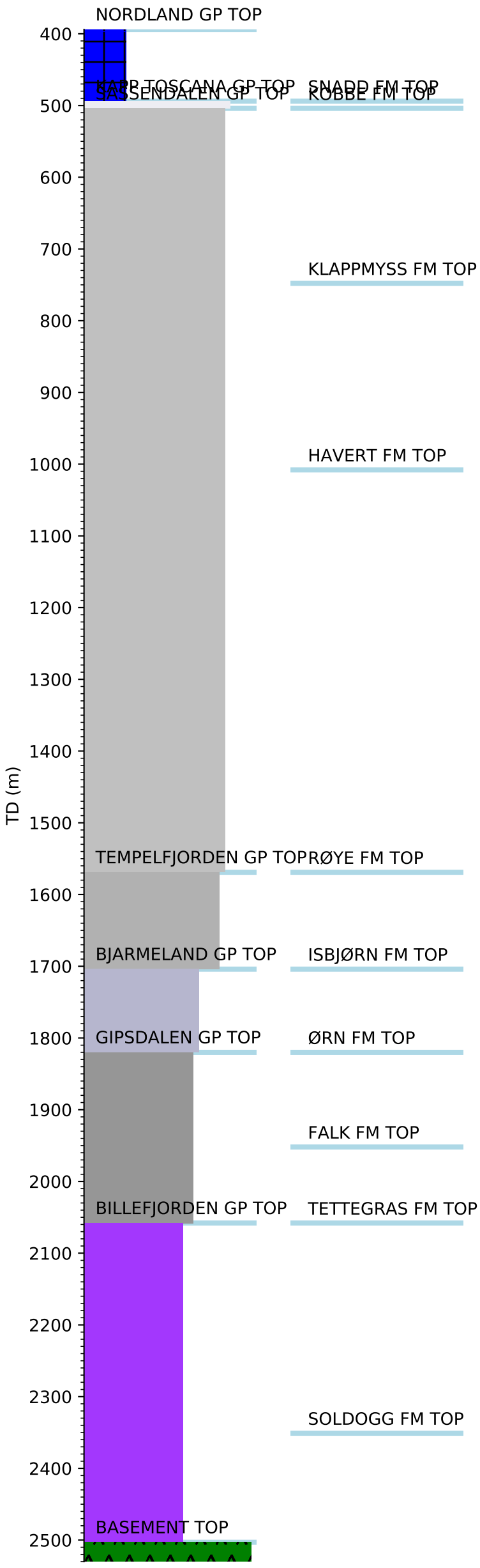
Groups

Formation Tops



Wellbore History

GENERAL

Well 7128/4-1 is located in the Finmark Øst area. The main objective for the well was to test the potential for hydrocarbons in Visean sandstone on the "Omd Vest" structure. The secondary objective was to test the hydrocarbon potential, reservoir and trap possibilities of the Asselian - Sakmarian carbonates and the upper Permian succession.

OPERATIONS

Exploration well 7128/4-1 was spudded with the semi-submersible installation "Ross Rig" on 17 December 1993 and drilled to TD at 2530 m in pre-Devonian basement rocks, 27 m below base of the Early Carboniferous Soldogg Formation. The well was drilled with seawater and bentonite / CMC EHV spud mud down to 770 m and with GYP/PAC mud from 770 m to TD.

The well penetrated Quaternary, Tertiary, Triassic, Permian, and Carboniferous sediments. The Cretaceous and Jurassic sequences were not present. Gas chromatography readings during drilling and log evaluation indicated gas saturation in the primary target. The sandstone was very tight and therefore not production tested. However, the Late Permian spiculite was partly very porous and permeable with a gas cap over moveable oil. A GOC was indicated at 1575 m.

A total of five conventional cores were cut in the well 1574 m t 1577 m (Late Permian Røye Formation), 1814 m to 1837 m (Isbjørn and Ørn Formations of Early Permian age), 1837 m to 1865 m (Early Permian Ørn Formation), 2362 m to 2389.47 m (Early Carboniferous Soldogg Formation), and 2526 m to 2530 m (Pre-Devonian basement).

FMT wire line samples were obtained from three levels: 1572.7 m, 1576 m, and 1588.8 m. In the FMT samples taken at 1572.7 m, the 10-litre chamber contained 0.106 m3 of gas with an initial pressure of 8274 kPa. The 4-litre chamber contained 183 litre of gas, 0.5 ml of oil and 1380 ml of water/mud filtrate. Geco measured the density of the gas to 0.637 (air = l). For the samples taken at 1576 m the 10 litre chamber contained 2,5 litre of oil with a density of 0.81 g/cm3, 0.190 m3 of gas and the total liquid (mud filtrate + oil) volume was 9.3 litre. The 4 litre chamber contained 63.5 litre of gas, 225 ml of oil and the water volume was not possible to measure due to water leakage past the piston when the Geco transferred from FMT bottle to a PVT bottle. The gas gravity was measured to 0.790 (air = l). The oil density of stabilized oil was measured to 0.817 g/cm3 at 15 °C. One 10-litre sample taken at 1588.8 m contained 2.5 litre of mud filtrate. The sampling aborted after 4 hrs and 17 min. The well was permanently abandoned on 26 February 1994 as an oil and gas discovery.

TESTING

Two zones were perforated and tested: Test no. 1 from 1592 -1610 m, and test no. 2 from 1577 -1586 m. For test no. 1 both diesel and Nitrogen was used to increase the under-balance, but the well did not flow. Finally, after stimulation with HCl test no. 1 produced 320 000 Sm3/d gas, 17 m3/d oil, and 70 m3/d water on a 72 mm choke. The HCl stimulation may have affected the cement, and the producing interval was probably the porous spiculite at 1569 m to 1590 m. Test no. 2 produced 215 000 Sm3/d gas, 15 m3/d oil, and 85 m3/d water on a 25.4 mm choke.

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LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7128/4-1