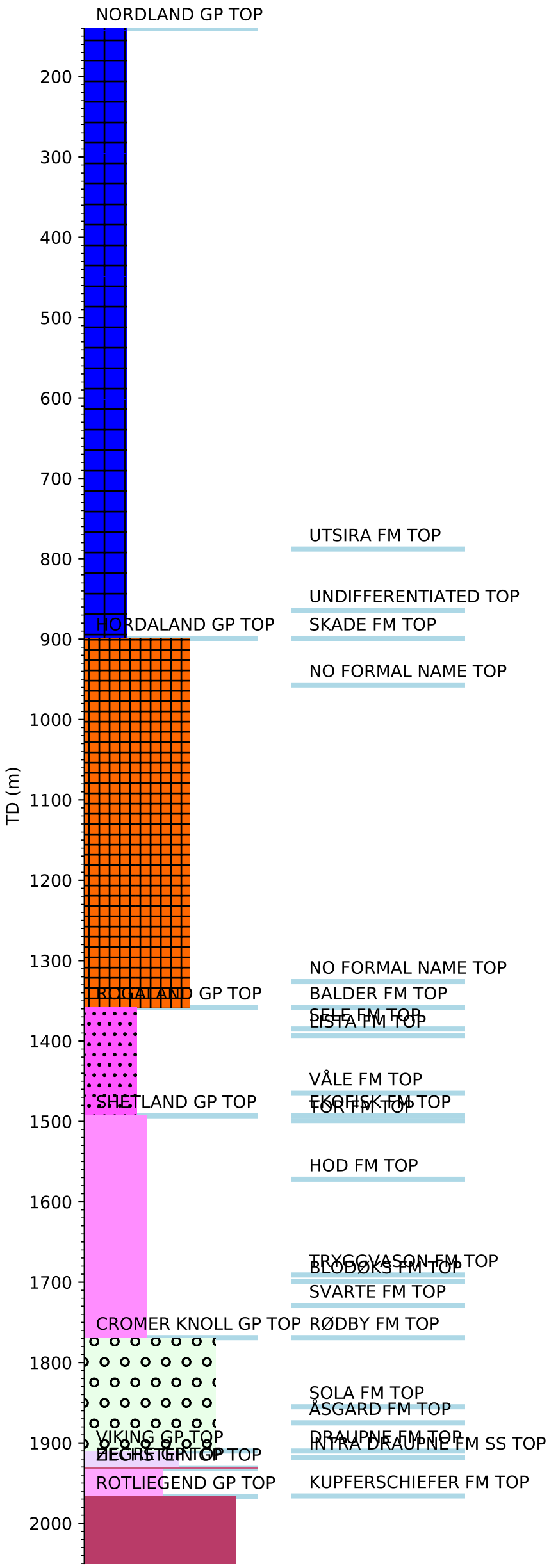

Wellbore History

GENERAL

Well 16/3-5 is an appraisal well on the southeaster part of the Sverdrup Field on the Utsira High in the North Sea. The objectives were to determine presence and thickness of the Late Jurassic Intra-Draupne Formation sandstone in a representative part of the Avaldsnes High (informal basement structure), and to investigate the reservoir properties of the Permian Rotliegend Group and Zechstein Group.

OPERATIONS AND RESULTS

Appraisal well 16/3-5 was spudded with the semi-submersible installation Bredford Dolphin on 4 January 2013 and drilled to TD at 2050 m in the Permian Rotliegend Group. No significant problem was encountered in the operations. The well was drilled with seawater down to 700 m and with Performadril water based mud from 700 m to TD.

The well encountered top Draupne Formation shales at 1909 m and the Intra-Draupne Formation sandstone at 1918 m. The Draupne shales are immature but has very good source rock potential with TOC around 7-8 % and Hydrogen Index around 540 mg HC/g TOC. The Intra-Draupne sandstone is 14 m thick and rested on Permian Zechstein Group carbonates. An oil column of approximately 30 meters was found in the Intra Draupne Sandstone and Permian carbonate. The well proves an excellent development of the Late Jurassic sandstone in the southern part of the Avaldsnes High and the reservoir level was encountered a bit shallower than predicted. The Permian carbonates, mainly limestone, had varying reservoir quality with the best quality principally located in open and partially cemented vugs, plus in the fractures. The well results show an oil down-to situation and consequently no oil/water contact was encountered. The oil bearing Zechstein limestones are in pressure communication with the overlying Draupne sandstone.

Two cores were cut from 1912 to 1950.5 m with ca 97% recovery in both. The cored interval includes the lower part of the Draupne Formation shales, the whole Intra-Draupne sandstone unit, one m of Triassic sediments, and 18.5 m of Permian limestones. MDT oil samples were taken at 1920.1 m, 1929.5 m, and 1943.6 m. MDT water samples were taken at 1959.4 m.

The well was permanently abandoned on 7 March 2013 as an oil appraisal well.

TESTING

One commingled production test from both Draupne sandstones and Zechstein carbonates was performed in the well. DST 1A tested only the lower zone in the Zechstein Group carbonates from 1937 to 1945 m. This zone did not produce oil to surface, but a rate of 2-3 Sm3/day was estimated based on volumes of base oil to tank.

DST1 B tested both zones: 1937 to 1945 m in Zechstein plus 1918 to 1931.3 m in the Intra-Draupne Formation Sandstone. The Intra-Draupne sandstone showed extremely good reservoir properties as well as no indications of pressure barriers. This zone produced 740 Sm3 oil and 17000 Sm3 gas /day through a 40/64" choke. The GOR was 17.5 Sm3/Sm3, the oil density was 0.89 g/cm3 and the gas gravity was 0.79 (air = 1). The H2S and CO2 contents in the gas were ca 0.5 ppm and ca 0.4%, respectively. The maximum DST temperature at the end of the Main flow was 79.9 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/3-5