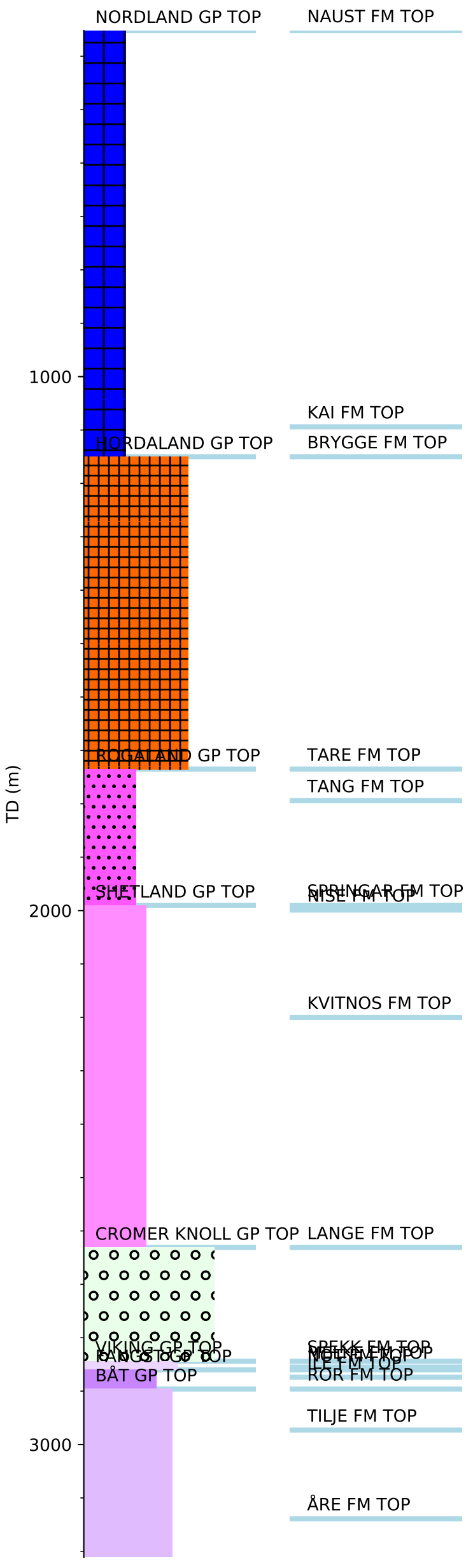

Wellbore History

GENERAL

Well 6407/7-4was drilled on the Njord A-East structure in the southern part of the Halten Terrace. The Njord structure is located ca 30 km west of the Draugen Field. The location was within a gentle ice berg plough mark with a trend southwest-northeast. The primary objective was to establish the oil-water contact in the Tilje Formation. Secondary objectives were to obtain a better mapping of the reservoir quality of the Tilje Formation on the east flank, to test productivity and injectivity of the Tilje Formation, and to appraise the down flank oil bearing potential and productivity of the Ile Formation. Reservoir fluids including formation water should be sampled. Boulders were expected at 395 m, and shallow gas from 509 - 528 m and especially at 553 m.

OPERATIONS AND RESULTS

Appraisal well 6407/7-4 was spudded by the semi-submersible rig Polar Pioneer on 11 January 1989 drilled to TD at 3211 m in Early Jurassic sediments of the Åre Formation. Spudding was delayed due to severe weather conditions causing the rig to drift 43 nautical miles off location. No shallow gas was encountered. Further periods of bad weather led to some problems and WOW, but apart from this the drilling proceeded without significant problems. The well was drilled with spud mud down to 538 m and with KCl mud from 538 m to TD.

The well proved oil in sands of the Ile, Tilje, and Åre Formations. The Ile Formation had oil from 2873.5 to 2896 m with a net pay of 14.8 m. The Tilje Formation had oil from 2972.5 m and down to 3120 m. Net pay in the Tilje Formation was 89.5 m. From logs, cores, and DST data an OWC could be placed at ca 3120 m in the Tilje Formation, while RFT data indicated a contact at 3110 m. The CPI log also showed a thin oil zone between 3148 and 3153 m in the Åre Formation. Weak shows (minor spotted blue-white to yellow white direct and cut fluorescence) were seen on limestones at 1850 - 1890 m. At 2435 to 2450 m in the Kvitnos Formation sandstones had direct and crush cut yellow-white fluorescence. From 3120 m to 3142 m there were no shows. Below 3142 m only weak shows were observed.

One core was cut from 2877 - 2896 m, and a total of nine cores were cut from 2974 - 3140 m. Twenty-six of 30 sidewall cores were recovered. Segregated RFT samples were taken at 2885 m (water/filtrate with traces of oil and gas), and at 3037 m (0.85 Sm3 gas and 5 litres 42.5 deg API oil in 2 3/4 gallon chamber).

The well was permanently abandoned on 28 March 1989 as an oil appraisal well.

TESTING

Three DST tests were performed in this well.

Test no 1 was performed in the interval 3126 - 3138.5 m in the water zone. It produced 147 m3 water and 424 Sm3 gas /day through a 11.11 mm choke. The gas gravity was 0.69 (air = 1) with 11% CO2 and 0.1 ppm H2S. The down-hole temperature in the test, measured at 3065.7 m, was 118.5 deg C.

Test no 2 A was performed in the interval 2999 - 3008 m. It produced 242 Sm3 oil and 46000 Sm3 gas /day through a 7.94 mm choke. The GOR was 185 Sm3/Sm3, oil density was 0.83 g/cm3, gas gravity was 0.74 (air = 1) with 2% CO2 and 2 ppm H2S. The down-hole temperature in the test, measured at 2957.7 m, was 115.7 deg C.

Test no 2 B was performed in the combined intervals 2999 - 3008 m and 3028 - 3071 m. It produced 740 Sm3 oil and 125000 Sm3 gas /day through a 12.7 mm choke. The GOR was169 Sm3/Sm3, oil density was 0.84 g/cm3, gas gravity was 0.72 (air = 1) with 2% CO2 and 2 ppm H2S. The down-hole temperature in the test, measured at 3005.7 m, was 117.1 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/7-4