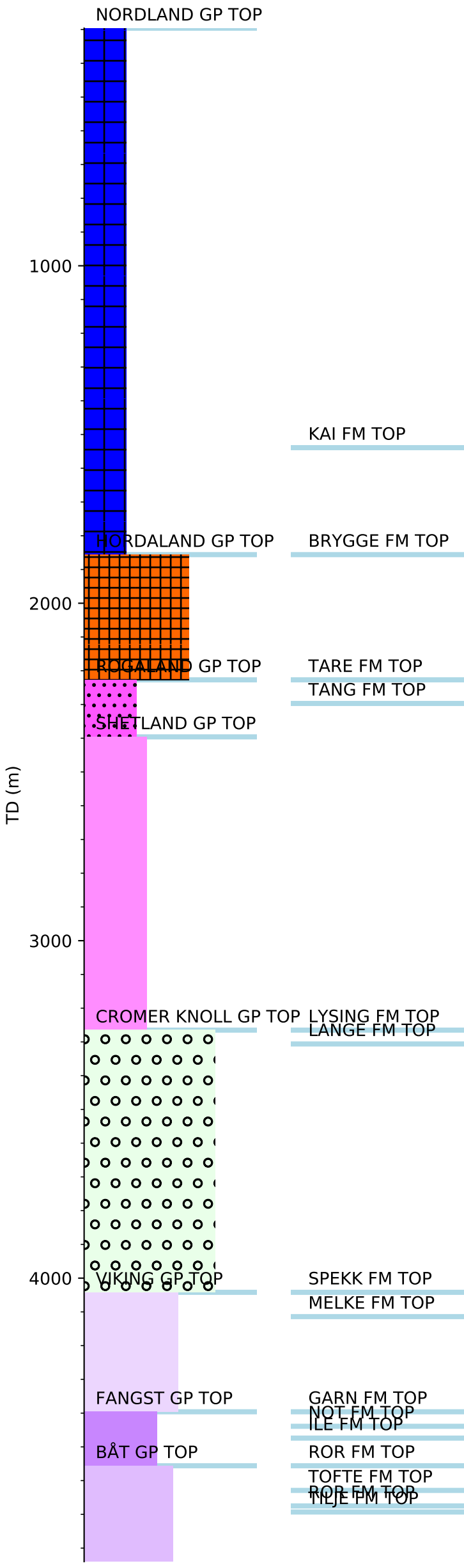

Wellbore History

GENERAL

Well 6506/12-7 was drilled as an exploration well on the Northeast Smørbukk structure. The primary purpose was to find hydrocarbon accumulations of significant amounts in the Middle and Early Jurassic sandstone reservoirs. Secondary objectives were to check for hydrocarbon accumulations deeper than the structural closure of the main field. The well should also verify the geophysical and structural interpretation and improve the geological, paleontological and geochemical understanding of the area. Total depth was to be in rocks of Triassic age or 4000 m in order to satisfy the licence commitment.

OPERATIONS AND RESULTS

Well 6506/12-7 was spudded with the semi-submersible installation Dyvi Delta on 7 April 1987 and drilled to TD at 4840 m in the Early Jurassic Tilje Formation. Drilling proceeded without significant problems. The well was drilled with spud mud down to 597 m, with gypsum/polymer mud from 597 m to 4427 m, and with a pre-hydrated Bentonite/Lignosulphonate mud system from 4427 m to TD. No shallow gas was encountered.

The first show appeared in the Lange Formation at 3791 - 3794 m. During coring there were oil shows in Garn and Ile Formations, while Ti1je only contained small traces of oil. Both cores and logs indicated that Garn and Ile Formations were hydrocarbon bearing down to ca 4538 m, while Ti1je Formation was indicated to be water bearing. The porosity was assumed to be between 8 and 12 %. Mobil wanted to test the Ti1je Formation to get a fluid sample to understand the logs better. This was a wise decision because the formation produced oil at very good rates. The Garn Formation on the other hand did not produce any formation fluid when tested. The oil/water contact in the Tilje Formation was not found because the logs did not give clear data.

Eight cores were cut in the well with a total recovery of 62.6 m core. One core was cut in the interval 4053 - 4058 m (Spekk Formation), two cores from 4427.5 to 4439.2 m bas Garn Formation), four cores in the interval 4467 - 4502 m (Not-Ile Formations), and one core from 4672 to 4700 m (all of Ror Formation with base Tofte and top Tilje). RFT fluid samples were taken at 4420 m (Garn), 4496.5 m (Ile), and 4708 m (Tilje).

The well was permanently abandoned on 12 August 1987 as a gas/condensate appraisal.

TESTING

Four DSTs were performed in this well.

DST 1 in the interval 4741 - 4748 m in the Tilje Formation produced 520 Sm3 condensate, 230000 Sm3 gas and no water through a 32/64" choke. The GOR was 442 Sm3/Sm3, the condensate density was 0.820 g/cm3, and the gas gravity was 0.770 (air = 1). Maximum down-hole temperature recorded in the test was 164 deg C.

DST 2 in the interval 4702 - 4707 m in the Tilje Formation produced 200 Sm3 condensate, 145000 Sm3 gas and no water through a 20/64" choke. The GOR was 725 Sm3/Sm3, the condensate density was 0.818 g/cm3, and the gas gravity was 0.785 (air = 1). Maximum down-hole temperature recorded in the test was 164 deg C.

DST 3 in the interval 4474 - 4514 m in the Ile Formation produced 70 Sm3 condensate, 110000 Sm3 gas and 4 - 20% water through a 20/64" choke. The GOR was 1570 Sm3/Sm3, the condensate density was 0.790 g/cm3, and the gas gravity was 0.745 (air = 1). Maximum down-hole temperature recorded in the test was 136 deg C.

DST 4 in the interval 4414 - 4439 m in the lower Garn Formation flowed 1.7 m3 fluids into the well bore. Only gas and mud came to surface during reverse circulation. No formation fluid was observed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6506/12-7