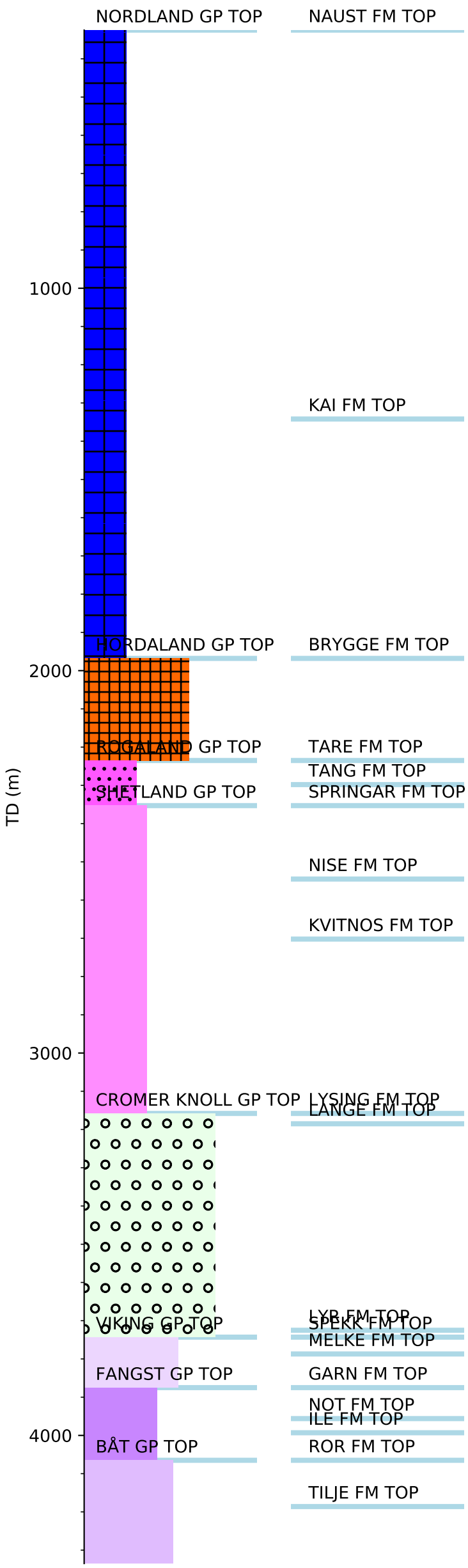

Wellbore History

GENERAL

Well 6506/12-8 is located in the Haltenbanken area off shore Mid Norway. It was designed to appraise the Smørbukk South discovery in the southern part of the block. The main objective was to establish productivity in the Garn Formation down flank of well 6506/12-3, the fluid properties, and to provide better understanding of diagenesis effects. In the Ile Formation the gas/water contact should be established, and in the Tilje Formation the oil/water and gas/oil contacts should be established or confirmed.

OPERATIONS AND RESULTS

Appraisal well 6506/12-8 was spudded with the semi-submersible installation West Delta on 4 June 1988 and drilled to TD at 4334 m in the Early Jurassic Tilje Formation. The well was drilled without significant problems or incidents. It was drilled with spud mud down to 558 m, with gypsum polymer mud from 558 m to 3877 m, and with gel/lignosulphonate/lignite from 3877 m to TD. Gas bearing shallow sands were penetrated at 571 to 573 m and at 881 to 885 m.

Weak shows were recorded in sands in the Lysing Formation at 3158 - 3185 m. Top of the target reservoir (top Garn Formation) was encountered at 3875 m, the Ile Formation was encountered at 3992.5 m, and the Tilje Formation was encountered at 4186 m. The logs showed good reservoir properties, especially in the Garn Formation. The Garn and the Tilje Formations were tested and found hydrocarbon bearing. The Garn Formation was hydrocarbon bearing all through down to the tight sandstones/siltstones of the Not Formation. Weak shows were recorded also in the Ile Formation sandstone, and the logs indicated hydrocarbons down to top Ror Formation at 4065 m. However, no test was conducted in the Ile Formation. In the Tilje Formation geochemical analyses of the cores showed that the hydrocarbons were distributed in distinct zones within the reservoir. The most likely OWC was estimated at ca 4269 m, but no clear contact was found.

Eight cores were cut in the well. One core was cut in a claystone interval from 2311 -2321 m in the Tertiary Tang Formation, but it was not recovered to the surface. The remaining seven cores recovered a total of 208.8 m core. Five cores were cut in the interval 3878 - 4038.5 m (Fangst Group), and two cores were cut in the interval 4235 - 4292 m in the Tilje Formation. RFT fluid samples were taken at 3921 m (Garn), 3925 m (Garn), 3948.3 m (Garn), and at 4264 m (Tilje). The well was suspended on 1 September 1988 as an oil and gas appraisal well.

TESTING

Two DST tests were performed.

DST 1 tested the intervals 4205 - 4221 m and 4237 - 4277 m in the Tilje Formation. It produced 460 Sm3 oil, 115000 Sm3 gas and 8 - 10% water/d through a 28/64" choke. The GOR was 250 Sm3/Sm3, the oil density was 0.820 g/cm3, and the gas gravity was 0.820 (air = 1). The maximum bottom hole temperature was 148 deg C.

DST 2 tested the intervals 3915 - 3923 m and 3934 - 3955 m in the Garn Formation. It produced 1420 Sm3 oil, 460000 Sm3 gas and no water/d through a 64/64" choke. The GOR was 324 Sm3/Sm3, the oil density was 0.830 g/cm3, and the gas gravity was 0.775 (air = 1). The maximum bottom hole temperature was 138 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6506/12-8