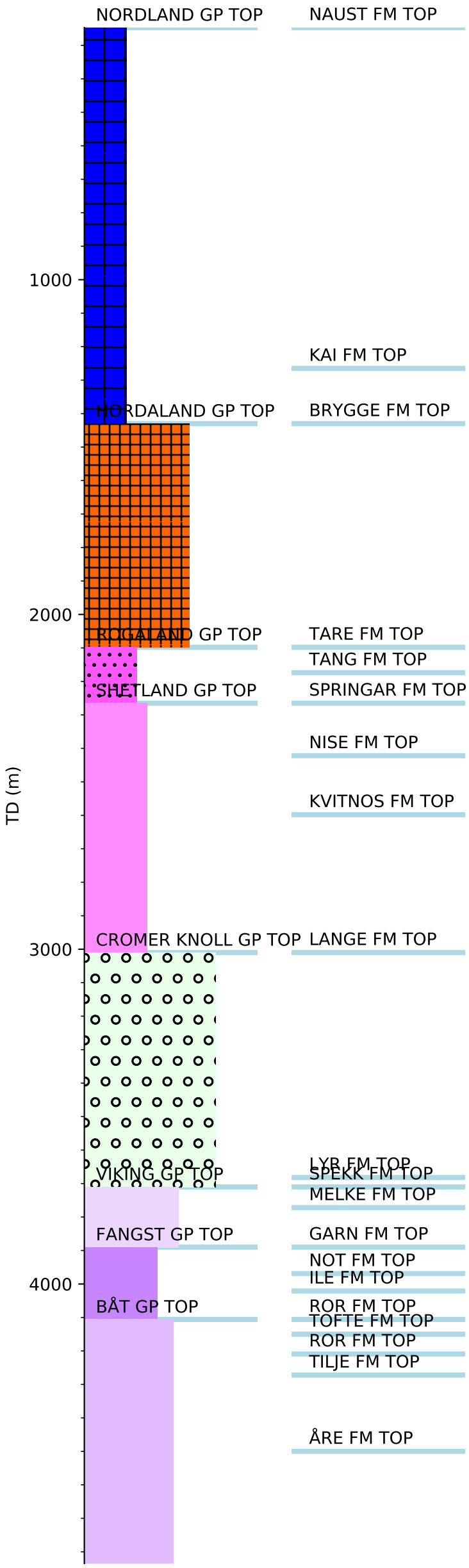
Groups

Formation Tops



Wellbore History

GENERAL

Wildcat well 6407/4-1 was drilled on a structure in the Gimsan Basin on the Halten Terrace, in the central part of the block. The structure is an isolated domelike structure, all inside the block borders. Well 6407/4-1 is placed a little down flank on the biggest segment in the southeast part. The main objective was hydrocarbon accumulations in the Middle Jurassic, Garn Formation. The second objective was Middle Jurassic, Tilje Formation.

OPERATIONS AND RESULTS

6407/4-1 was spudded with the semi-submersible rig Ross Isle on 20 July 1985 and drilled to TD at 4835 m in late Triassic sediments of the Åre Formation. The well was drilled with seawater and gel down to 849 m, with gypsum/polymer mud fro 849 m to 2121 m, with gypsum/polymer/lignosulphonate mud from 2121 m to 3817 m, and with gel/lignosulphonate/lignite mud from 3817 m to TD. Drilling the well proceeded without significant problems.

Oil shows were recorded in sandstone in the interval 2467 m to 2720 m in Campanian-Santonian-Coniacian age sediments of the Shetland Group. Hydrocarbon bearing Middle Jurassic sandstones were encountered at 3890 m KB. Good and strong continuous shows were recorded throughout the Spekk and Melke Formations and the Fangst Group. Geochemical analyses recorded continuous shows in the Tilje Formation (down to ca 4330 m), some shows in sandstones of the Åre Formation, and they confined the oil-water contact in the Garn Formation to between 3952.8 m and 3960.0 m. Above ca 3780 metres the shows involve a light to medium gravity oil, whilst below this depth the oils are waxier and of medium gravity. Top reservoir, in Garn Formation, came in at 3889.5 m, 28 m higher than prognosed. Gas was produced from the reservoir, but reservoir qualities were poor. Geochemical analyses showed very good source rock potential in the Spekk Formation. The geochemistry also indicated that Spekk is not classically oil-prone in the area, but has a mixed potential for oil and gas. Fifteen cores were recovered from 2286 m to 2293 m and 2384 m to 2392.3 m in the Shetland Group (cores 1 and 2), 3889 m to 3981 m in through the Garn and into the Not Formation (cores 3 to 6), 4021 m to 4076.2 m in the upper part of the Ile Formation (cores 7 and 8), 4278 m to 4337.8 m in the upper part of the Tilje Formation (cores 9 to 14), and from 4605 m to 4619.3 m in the Åre Formation (core 15). A segregated sample was taken with RFT at 3898.5 m. The well was permanently abandoned on 15 November 1985 as a gas/condensate discovery.

TESTING

Two Drill Stem Tests were performed, one in the Tofte Formation from 4159 m to 4166 m, and one in the Garn Formation from 3889 m to 3919 m.

The Tofte test produced water only at a rate of 30 Sm3/day. The maximum temperature in this test was 148°C.

The Garn test produced condensate at a rate of 20 Sm3/day and gas at a rate of 32500 Sm3/day, giving a GOR of 1625 Sm3/Sm3. The condensate density was 0.807 g/cm3 and the gas gravity was 0.81 (air = 1). The maximum temperature in this test was 142.5°C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/4-1