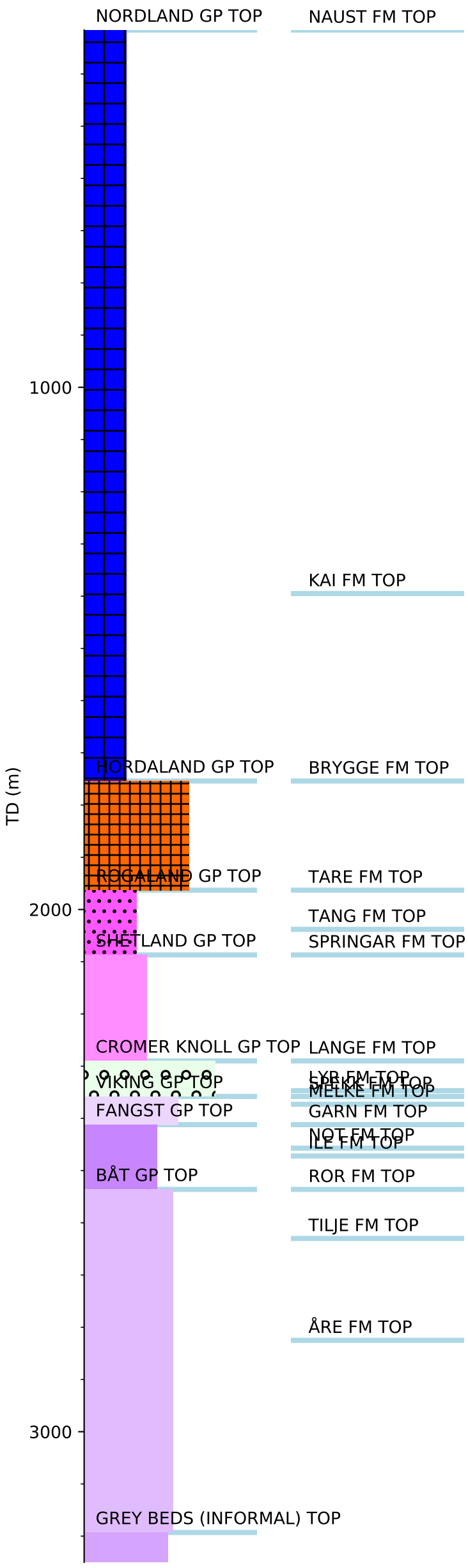

Wellbore History

GENERAL

Well 6507/11-3 was designed to test the Beta Fault compartment of the Midgard Discovery off shore Mid Norway. The Beta segment is a part of the Midgard horst. This horst is defined by NNV trending normal faults. It is separated from the other compartments by a ENE trending cross fault and exhibits true vertical closure at Base Cretaceous level. The primary target was reservoir rocks of the Middle Jurassic Fangst Group with the objective to establish the GWC within a good sand and to perform a DST in a formation not previously being tested (the Ile Formation). The location was chosen relatively high on the structure in case the hydrocarbon contact for Beta was different from what was seen in the Alpha and Gamma structures. The well should reach Triassic rocks or drill to 500 m below the coal reflector. The proposed depth was 3250 m. The pre-drill classification of the well was wildcat.

The well is Type Well for the Ile and Not Formation of the Fangst Group.

OPERATIONS AND RESULTS

Well 6507/11-3 was spudded with the semi-submersible installation Treasure Saga on 3 June 1985 and drilled to TD at 3250 m in the Triassic Grey Beds. While drilling the reservoir, mud weight had to be raised gradually to 1.6 g/cm3 due to high trip gas. Approximately 2 weeks were lost due to a work conflict. The well was drilled with spud mud down to 421 m, with gel mud from 421 m to 868 m, with gypsum/polymer mud from 868 m to 2615 m, and with gel mud from 2615 m to TD.

The average background gas down to the 20" casing point was 0.4% to 0.8% with peaks at 505 m (3.43%), 540 m (1.08%), 576 m (1.76%) and 663 m (1.97%). Methane was the only gas component present. The well proved mainly claystones down to the Fangst Group. The Cainozoic with a total thickness of 1771 m overlies a 271 m Cretaceous sequence. Late Jurassic consisted of 14.5 m hot shale of the Spekk Formation and 39.5 m of silty claystones of the Melke Formation. The Fangst Group consisted of the Garn, Not, and Ile Formations as in the other wells in the area. The Garn and the Ile Formations had very good reservoir properties, while the Not Formation is a non-reservoir zone in between. Two mudstone SWC's at 2170 m and 2197 m in the Shetland Group had oil shows. The first oil shows below this depth were observed in the Melke Formation at 2393 m. The Fangst Group had gas above a thin oil zone. The GOC was encountered at 2514 m, and the OWC at 2525.5 m. There were no shows below OWC.

Six cores were cut in the Fangst Group and another three cores were cut in the Tilje Formation. Six segregated fluid samples were taken on FMT; four at 2426.5 m, 2456 m, 2473.5 m, and 2512 m in the gas/condensate zone, and at two at 2516.3 m and at 2520 m in the oil zone.

The well was permanently abandoned on 15 August 1985 as an oil/gas discovery

TESTING

Three drill stem tests were performed; one in the oil zone and two in the gas zone.

DST 1 tested the oil zone from 2519.0 m to 2520.5 m. Rates were increased in steps up to 1500 Sm3/day to investigate gas coning behaviour. The GOR without gas coning was ca 140 Sm3/Sm3. Stock tank oil gravity was 0.8506 g/cm3.

DST 2 tested the interval 2495.7 m to 2508.7 in the gas zone and flowed 564000 Sm3 gas/day through a 14.3 mm choke in the main flow. The gas/condensate ratio of the fluid was 6850 Sm3/Sm3.

DST 3 tested the interval from 2413.0 m to 2419.5 m in the gas zone and flowed 584000 Sm3 gas/day through a 14.3 mm choke in the main flow. The gas/condensate ratio of the fluid was 7100 Sm3/Sm3.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6507/11-3