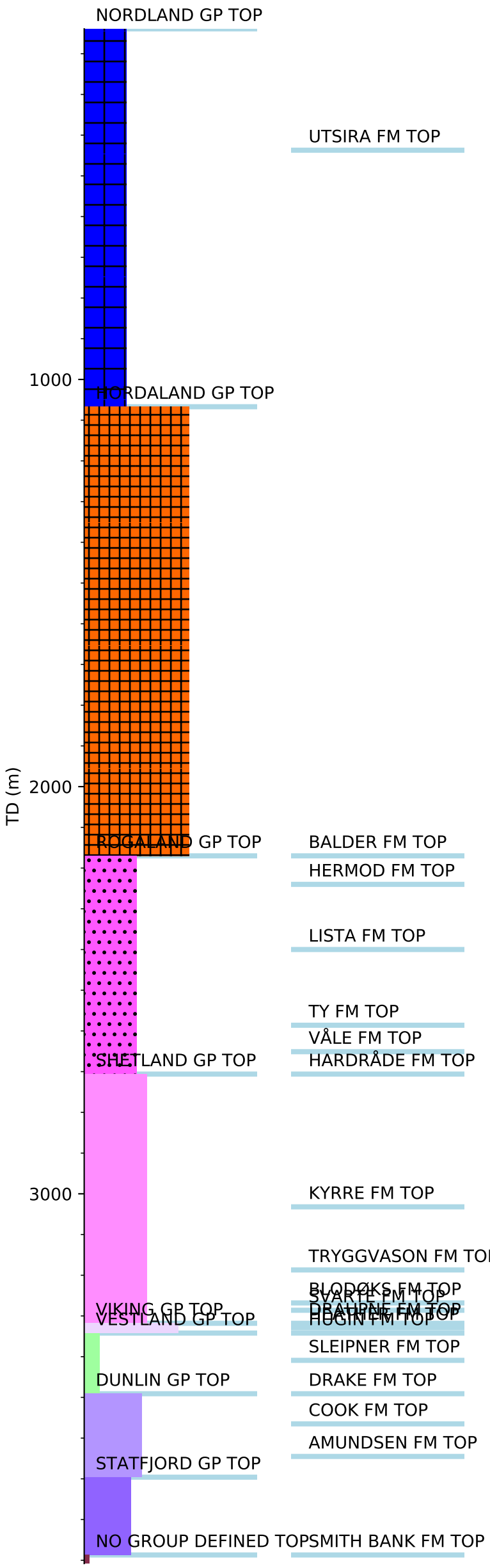

Wellbore History

GENERAL

Well 25/2-13 was drilled in the central part of the Viking Graben, east of the Frigg area. The block straddles the eastern flank of the graben and the north-western part of the Utsira High. It was the first appraisal well on the 25/2-5 discovery, which discovered oil in different reservoirs of the Vestland Group and the Statfjord Formation. The structure is a north-south trending horst, which is located on a terrace in the southern part of the block. Well 25/2-13 was drilled close to a major normal fault bounding the structure. The main objective was to evaluate the western panel. The well should test the fluid columns in both the Vestland Group and the Statfjord Formation, obtain data for fluid characterisation and productivity, and try to define the hydrocarbon contacts of the reservoirs.

OPERATIONS AND RESULTS

Appraisal well 25/2-13 was spudded 6 June 1989 by the semi-submersible installation West Vanguard drilled to TD at 3909 m in the Triassic Smith Bank Formation. The well was drilled to 13" 3/8 casing point (2043 m) without problems, but at 2178 m the bit got stuck and a sidetrack was needed. The sidetrack was kicked off from 2070 m. The first attempt failed, but the second was successful. During coring of the Vestland Group, the core barrel was lost in hole and a second sidetrack was decided after unsuccessful fishing. This sidetrack was kicked off from 3306. The mud that was used in the Jurassic section (3318 - 3887 m) was an FCL type mud which was based on fresh water with added bentonite, polymers, lignosulfonate and barite.

Top Vestland Group came in at 3342 m as prognosed, and with mobile hydrocarbons in two layers; oil in the top ca 40 - 60 m of the reservoir with an unclear OWC in the interval 3382 - 3415 m, and with oil shows down to 3423 m; and gas-condensate in an isolated layer in the Lower Vestland Group with a gross thickness = 33 m. However, the reservoir properties in the Vestland Group were not as good as in 25/2-5. Top Statfjord came in at 3695.5 m, 50 m deeper than prognosed with thickness as expected, but with mobile oil only in a thin zone at the very top. A very tentative OWC was placed at 3709 m, based on RFT pressure data logs, and some moveable oil in DST 2A. Fair shows were recorded down to 3729 m.

A total of 19 cores were cut in this well. Cores 1 and 2 were cut in the original hole from 3340 to 3394.5 m, while cores 3 to 19 were cut in the sidetracked hole from 3387 to 3468.5 m. The core to log depth shifts for cores #1 to #7 are in the range 2.75 to 7.75 m. The core to log depth shifts for cores #11 to #19 are in the range 4.2 to 5.5 m. RFT samples were taken at 3696.5 m (mud filtrate with traces of oil very little gas) and 3727.5 m (mud filtrate with very little gas).

The well was suspended 25 January 1990 as an oil / gas / condensate appraisal.

TESTING

Seven drill stem tests were conducted in this well (DST 1,2A & 2B, 3A & 3B, 4, 5). Tests 1 and 2 were conducted in the Statfjord Formation while tests 3, 4 and 5 were conducted in the Vestland Group.

DST #l tested the interval 3759 - 3785 m and produced a total of 42.5 m3 formation water. The final shut-in temperature was 124.4 deg C.

DST #2A tested the interval 3706 - 3713 m, which produced no formation fluids to surface.

DST #2B tested the interval 3695 - 3698 m in addition to the DST2 #A interval. The test flowed 69 sm3 oil and 29400 Sm3 gas /day on a 16/64" choke with a WHP of 85 bar and GOR of 425 sm3/sm3. The oil density was 0.821 g/cm3. The final shut-in temperature was 122.8 deg C.

DST #3A tested the interval 3482 - 3491 m. This zone was very tight and flowed 154 litres only. Due to the low rates the movable formation fluid could not be identified. The test confirmed that the zone was in a separate and higher pressure regime than the Vestland Group hydrocarbon reservoirs above it.

DST #3B tested the intervals 3437 - 3447 plus 3449.8 - 3460 in addition to the DST #3A interval. The test flowed 242000 sm3 gas-condensate /day with a GOR of 1115 sm3/sm3 and WHP of 170 bar on a 32/64" choke. The