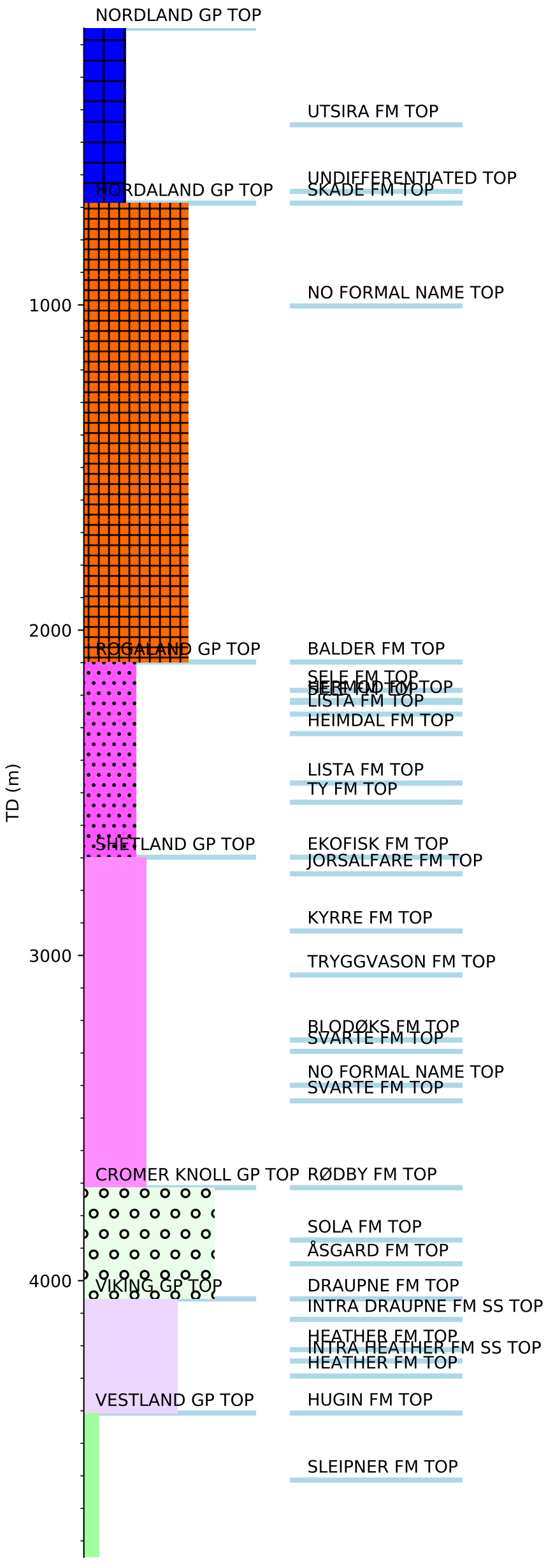

Wellbore History

GENERAL

Norwegian Continental Shelf Block 25/7 is located west of the Utsira basement High on the eastern flank of the Southern Viking Graben. The location is 5.3 km southwest of 25/7-1 which drilled into basement after the Cretaceous section without penetrating any Jurassic sediments and thus failed to test its target, Late Jurassic sandstones. With the 25/7-2 location further to the west one expected to penetrate a complete Brae analogue sequence. The main objectives of the well were to test the hydrocarbon potential of the Late Jurassic sands, the hydrocarbon potential of a structural closure at the Middle Jurassic sand level, and the hydrocarbon bearing potential of the Paleocene Heimdal sands. Trapping at Late and Middle Jurassic was assumed by sealing basement rocks to the east, and by dip closure elsewhere. Events interpreted as possible gas bearing sands occur between 200 and 300 m below sea level.

OPERATIONS AND RESULTS

Wildcat well 25/7-2 was spudded 8 February 1990by the semi-submersible rig Dyvi Stena, and completed 18 July 1990 at a depth of 4850 m in the Middle Jurassic Sleipner Formation. The well was drilled with Seawater and hi-vis pills down to 1220 m and with KCl Polymer WBS/200 mud from 1220 m to TD. Drilling took 131 days from spud and 142 days from taking over the rig. A further 29 days were used to log, test, and plug and abandon the well. The rig was on contract for a total of 171 days. One hundred and thirty days were used for planned operations while wait-on-weather, fishing operations, and equipment trouble accounted for the NPT. No indications of shallow gas were observed.

Forty-seven metres of Cenomanian sand was encountered in the well. A gross thickness of 174 meters of hydrocarbon bearing Late Jurassic conglomerates and sandstones were encountered in the well. The Late Jurassic conglomerates and sandstones represent deposition by debris-flows, slumps and slides and minor turbidites on a fault-scarp submarine slope apron. The sequence had poor reservoir properties in the 25/7-2 location. Sedimentological interpretation and modelling as well as the DST analysis have shown the reservoir to be of limited size. It was therefore concluded that the 25/7-2 well encountered the Upper Jurassic conglomerate/sandstone sequence in a non-producible reservoir facies. The Middle Jurassic Hugin formation was 206 meters thick and was composed of sands deposited in an overall transgressive coastal barrier system. Hydrocarbons were present down to the base of the sands; however, the reservoir quality was extremely poor. The sandstones were intensely cemented and contained large amounts of fibrous illite. The Middle Jurassic Sleipner Formation had a very low sand/shale ratio. The FMS evaluation showed the sandstones to be intensely cemented. No net sand was interpreted from the log analysis.

A total of 210 sidewall cores were attempted and 91 were recovered. Four conventional cores were cut in the interval from 4125 to 4169.2 m, and two in the interval from 4345 to 4488 m. No fluid samples were taken on wire line. The well was permanently plugged and abandoned on 18 July 1990 as gas and condensate discovery.

TESTING

A single drill stem test was conducted over the hydrocarbon-bearing interval of the Late Jurassic Intra Draupne and Intra Heather -Formation Sandstone. The perforated intervals were 4148 m to 4173 m, 4194 m to 4219 m, and 4248 m to 4273 m. Contribution to flow was from the Intra Draupne Formation Sandstone in the upper set of perforations (4148 ? 4173 m). Initial flow rates through a 40/64" choke were 255700 Sm3 gas, 228 Sm3 condensate, and 2.7 Sm3 water pr day through a 15.9 mm choke. Initial GOR was 1121 Sm3/ Sm3. Pressure and flow rates declined while GOR increased during the test. Separator condensate density was 0.784 g/cm3 (at 15°C) while separator gas gravity was 0.710 (air = 1). From PVT analyses the stock tank oil density was found to be 0.775 g/cm3 and the stock tank gas gravity 0.756 (air = 1).

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 25/7-2