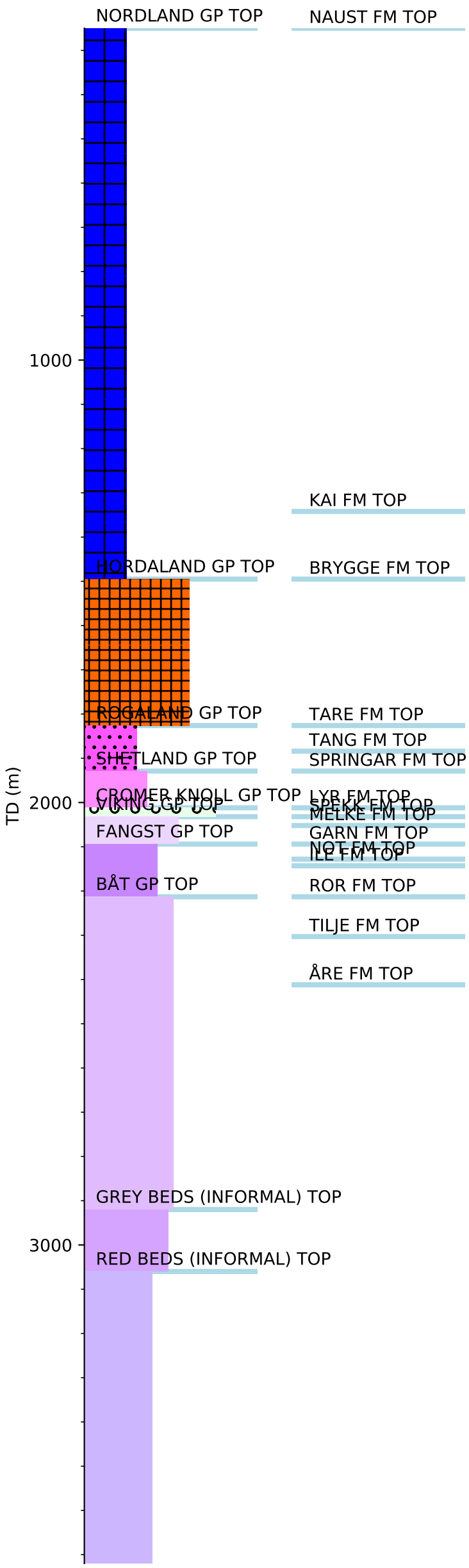

Wellbore History

GENERAL

Wildcat well 6507/12-1 was the first well to be drilled offshore Mid-Norway. It was drilled to test the stratigraphic sequence between seabed and at least 500 m below "reflector E" as defined in the licence agreement. The primary target was a mapped Intra Jurassic seismic reflector at a depth of approximately 2575 m. This reflector was interpreted to be associated with a Middle to Early Jurassic sandstone sequence. The secondary target was represented by possible sandstone sequences between the mapped Base Cretaceous reflector and the Intra Jurassic reflector. Thirdly there was a small vertical closure in the basal part of the Tertiary sequence that could have prospective interest.

The well is Type Well for the Båt Group, the Tare Formation and the Naust Formation. It is Reference Well for the Fangst Group.

OPERATIONS AND RESULTS

The well was spudded with the semi-submersible installation Byford Dolphin on 1 July 1980 in a water depth of 225 m, and drilled to a total depth of 3713 m in Late Triassic Red Beds. The well was drilled with spud mud down to 778 m, with Gypsum PAC mud from 778 m to 1448 m, and with Lignosulfonate/PAC mud from 1448 m to TD.

The well penetrated a section of 1105 m below reflector E and thus meets the requirement set in the work programme for licence 059.

The well encountered a Cenozoic sequence of 1679 m and the Tertiary succession was, at the time the well was drilled, subdivided into lithostratigraphic units according to Deegan & Scull's nomenclature for the northern North Sea. The well proved a slightly thicker Tertiary sequence than expected. The seismic leg interpreted to represent Base Tertiary proved to be related to a tuff sequence (Tare Formation).

The Top Cretaceous reflector was easily determined from acoustic and density logs. The base of the Cretaceous was encountered in the well at 2032 m. The prognosed depth was 1975 m. The Cretaceous sequence is composed of Late Cretaceous variegated claystones and Early Cretaceous red marls overlying a basal limestone. Total Cretaceous thickness is 103 m. The sequence of primary interest below the Base Cretaceous unconformity starts with a 20 m thick black shale equivalent to the Kimmeridge Clay Formation (Spekk Formation). At 2052 m a very fine-grained marginal marine silty sandstone/clay-stone of Bathonian-Callovian/Oxfordian age was encountered (Melke Formation). Below this section the well penetrated several sandstone sections with good to excellent reservoir quality (Fangst and Båt Groups). The reflector that defined the top of the primary target was penetrated at 2660 m. It fell within a succession of coals and coaly claystones interstratified with sandstones of delta plain character (+re Formation). The base of the Coal Unit is of Late Rhaetian age while the top is defined well into the Early Jurassic. No hiatuses were recorded at the Triassic-Jurassic boundary. Below the coal sequence the well found a thick late Triassic continental succession, of which the lower 653 m is of red bed facies similar to the Cormorant Unit as seen in the northern North Sea. The well was extended to a TD of 3713 m, 213 m deeper than the planned maximum total depth of 3500 m in order to obtain more stratigraphic information. With the exception of slight traces of apparently dead oil reported at 2550 - 2560 m (by EXLOG), and a weak cut reaction seen on a sidewall core 2743.5 m and 2766 m, no oil shows were reported during the drilling of this well. There were no indications of hydrocarbons seen from the E-logs. Four conventional cores were cut in the "Coal Unit". The first was cut from 2404 m to 2410 m in the Tilje Formation, cores two and three were cut in the "Coal Unit" (+re Formation) in the intervals 2520.5 m to 2538 m and 2707 m to 2716 m, respectively, and core number 4 was cut from 3708 m to 3720 m in the Red Beds. One attempt was made to sample formation water. Due to sampling problems, the retrieved sample was a mixture of fluid from 2451.5 m and 2840 m. The well was permanently abandoned on 26 October 1980 as a dry well.

TESTING

No drill stem test was performed

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6507/12-1