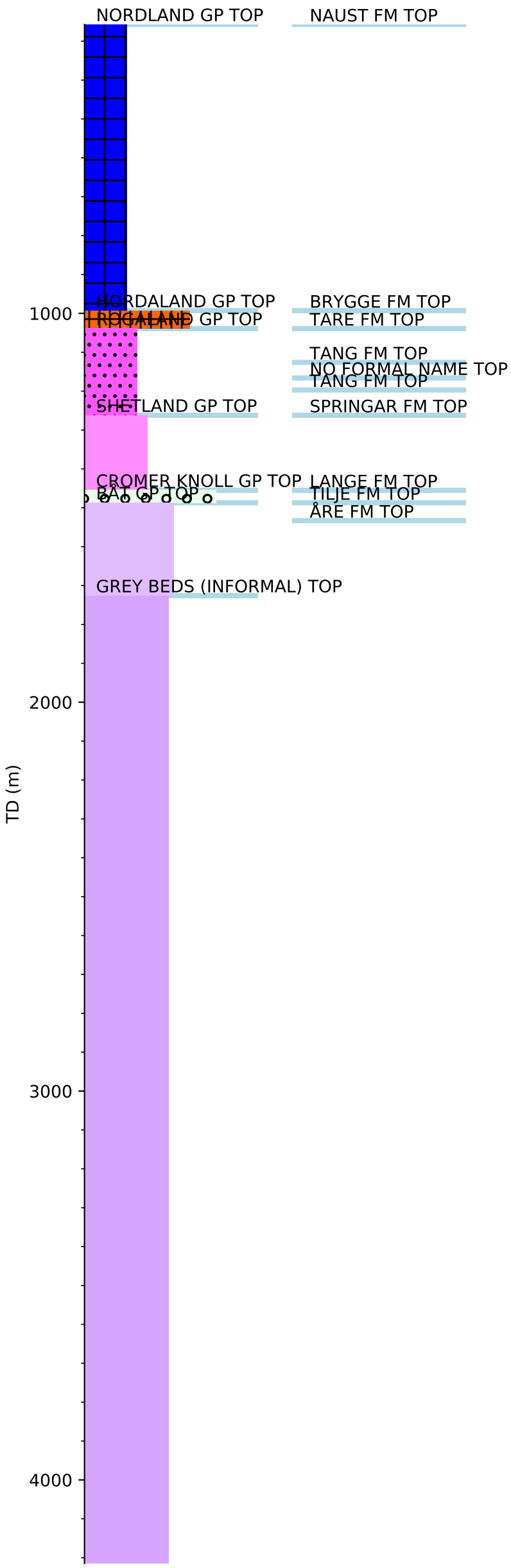

Wellbore History

GENERAL

Wildcat well 6610/7-2 is located on the Trøndelag Platform outside Mid Norway. The primary objective of the well was to test the hydrocarbon potential of Early Jurassic and Late Triassic sandstones. Secondary objectives were to gather information about the stratigraphy and hydrocarbon potential down to approximately 4200 m.

OPERATIONS AND RESULTS

Wildcat well 6610/7-2 was spudded with the semi-submersible installation West Vanguard on 28 August 1983 and drilled to TD at 4215 m in the Triassic Grey Beds. Drilling operations were problematic and took 119 days more than programmed. Excessive reaming of tight spots had to be done during drilling of the 22" hole section. In all the four first hole sections a pilot hole was drilled before underreaming. Nineteen kg junk was recovered from the hole after drilling out of the 13 3/8" casing shoe. Several problems with stuck pipe occurred below 3000 m. At 3526 m the pipe was stuck and was backed off at 3315 m. A cement plug was set from 3292 to 3148 m and the hole was sidetracked from 3212 m. Severe problems with tight hole, was experienced down to 3361 m. The well was drilled with seawater and spud mud down to 701 m, with gypsum/lignosulphonate mud from 701 m to 2160 m. Due to expected salt beds below 2500 m the well was drilled with oil based mud from 2160 m to TD. The oil base used was a Norol product, "hvitolje", a low-aromatic mineral oil C13 - C20 distillate.

The well encountered several sandstone bodies, the first interpreted as the Egga Informal Unit in Paleocene. Earliest Cretaceous - Late Jurassic were not present in the well. At 1487 m the Early Jurassic Båt Group was encountered with massive and porous sandstone sequence. The Triassic interval 3473 - 4218 m also had some clean sandstone, especially in the upper part. Electrical logs and RFT pressure tests, however, proved all potential reservoirs to be water bearing. Organic geochemical analyses showed that the units with the best source rock properties in this well are the shales and coals of the Early Jurassic Tilje and Åre Formations, which can be classified as rich type II/III source rocks with potential for gas and oil. However, shales in the upper 100 m of the Triassic Grey Beds also have fair to rich contents of organic matter classified as type III kerogen with some potential for gas. The well is immature down to approximately 2300 m, reaches peak oil generation maturity (0.8% Ro) at around 2900 m, while base oil window is considered at around TD in the well. Hence, the Early Jurassic coals and shales are immature in the well position. Free hydrocarbons thought to be due to migration are detected only in a siltstone sample from 1504 m in the Tilje Formation.

Two cores were cut, one in the Early Jurassic sequence and one in the Grey beds close to TD. No fluid sample was taken. The sample available at the NPD is a sample of the base oil used in the drilling mud.

The well was permanently abandoned on 14 March 1984 as a dry hole.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6610/7-2