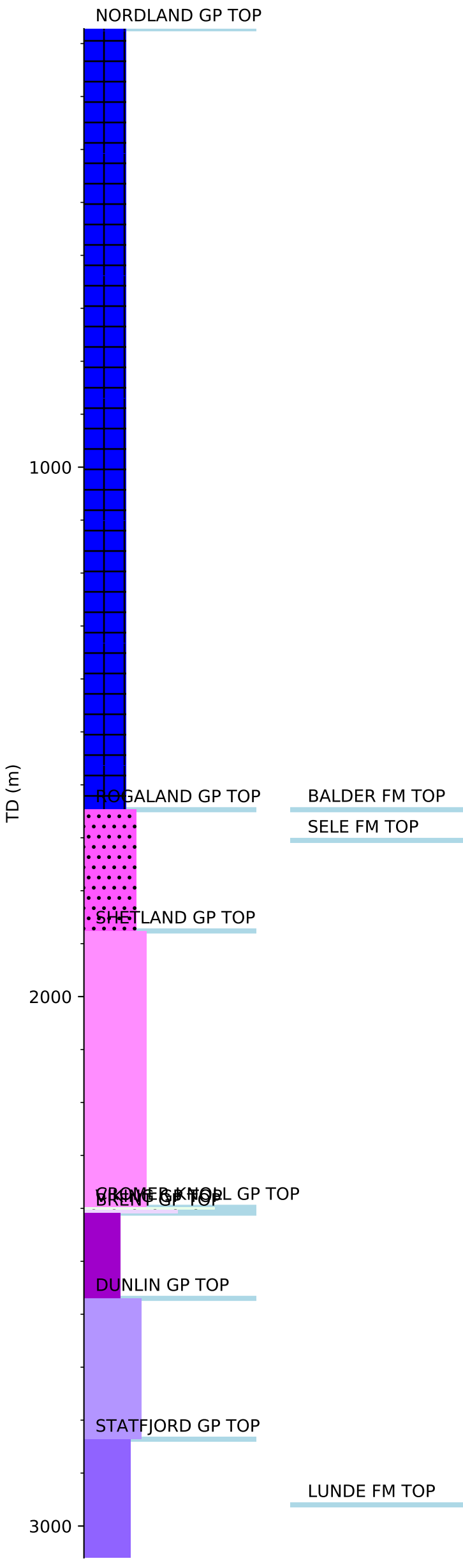
Groups

Formation Tops



Wellbore History

GENERAL

Well 33/12-1 is the Statfjord Field discovery well. The well was drilled ca 400 m east of the UK boundary. The Statfjord Field is located in the Tampen Spur area of the North Sea. The drilled structure is a west tilted fault block, forming part of a structural trend extending across the U.K. - Norway boundary. The trapping mechanism for the prospect was westerly dipping Jurassic beds bevelled at the Late Kimmerian regional unconformity. Cretaceous mudstones and marls provided the seal. The Brent Field is located on the southwestern U.K. portion of the same structural complex. The primary objective of the well was the Middle Jurassic sandstone section known to be productive in the U.K. Brent Field. Secondary objectives were Lias (Early Jurassic) and Triassic sands. The Paleocene section, which is structurally high, was an additional objective although nearby wells did not have reservoir rocks in this section.

OPERATIONS AND RESULTS

Well 33/12-1 was spudded with the semi-submersible installation Waage Drill I on 1 December 1973 and drilled to TD at 3060 m in the Triassic Lunde Formation. After drilling to 466 m, TD in 26" section, 47 days were spent due to rough weather and problems with tensioners and riser. After this operations proceeded without significant technical problems, but the weather caused much interruptions and WOW.

There were oil shows with relatively high gas readings in the interbedded siltstones and sandstones in the Paleocene section and throughout the Maastrichtian. The Brent Group was encountered at 2409 m and was oil filled down to top Dunlin Group at 2570 m. The oil-water contact was not present in this well. From log analysis, 148 m of net sand with an overall average porosity of more than 28% was estimated. Water saturation averaged 13%. The Early Jurassic and Triassic sections were water bearing.

A total of 72.2 m core was recovered in eight cores with variable recovery from 11 to 100%. Cores 1 to 7 were cut in the Brent Group from 2423 m to 2557 m while core 8 was cut from 2845 to 2853 m in the Statfjord Group. No fluid samples were taken on wire line.

The well was permanently abandoned on 18 April 1974 as an oil discovery.

TESTING

Four Drill Stem Tests were conducted in the Brent Group.

DST 1 tested the interval 2565 to 2570 m. It produced 400 Sm3 oil and 66600 Sm3 gas /day through a 1/2” choke. The GOR was 166 Sm3/Sm3 and the oil gravity was 37 °API and the gas gravity was 0.705 (air = 1). The DST temperature was 90.6 °C.

DST 2 tested the interval 2484 to 2493 m but was a failure.

DST 3 tested the interval 2463 to 2501 m. It produced 853 Sm3 oil and 156000 Sm3 gas /day through a 1/2” choke. The GOR was 183 Sm3/Sm3 and the oil gravity was 36.1 °API and the gas gravity was 0.675 (air = 1). The DST temperature was 88.9 °C. On choke 3/4” oil and gas production was nearly doubled.

DST 4 tested the interval 2409 to 2414 m. It produced 511 Sm3 oil and 86500 Sm3 gas /day through a 1/2” choke. The GOR was 169 Sm3/Sm3 and the oil gravity was 37.5 °API and gas gravity was 0.700 (air = 1). The maximum DST temperature, measured in the last flow period, was 88.9 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 33/12-1