



### Wellbore History

#### GENERAL

Well 16/4-11 was drilled on the Luno Discovery on the Utsira High in the North Sea. The primary objective of the well was to delineate the southwest flank of the 16/4-6 S (Luno II) discovery, to investigate the reservoir properties, and to investigate the type of oil and total oil column in this part of the discovery.

#### OPERATIONS AND RESULTS

Appraisal well 16/4-11 was spudded with the semi-submersible installation COSL Innovator on 7 February 2018. A 9 7/8" pilot hole was drilled from below the 30x36" casing shoe at 195 m to 475 m. Shallow gas was observed in the interval 469 m to 471 m. The 20" casing was therefore set shallow at 409.5 m, above the shallow gas zone. From there the well was drilled to TD at 2475 m in the Permian Rotliegende Group. Operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 409.5 m, with KCl/polymer mud from 409.5 m to 1922 m, and with Aquadrill mud from 1922 m to TD.

Top of the target reservoir, Hegre Group, was encountered at 1950 m. It was oil-bearing down to a clear oil-water contact at 1971.5 m. Good shows were described in the oil-bearing reservoir section. Below the OWC shows continued down to the base of the cored interval at 2004 m. These shows are described as having no odour, 100% even weak yellowish direct fluorescence, slightly blooming weak bluish white cut fluorescence, and 10% moderate bluish white fluorescent residue. The conventional core and sidewall cores from the Permian sandstone had shows that weakened with depth in the interval 2090 to 2329 m. These are typically described as having no odour, yellowish brown direct fluorescence, no to diffuse blue-white fluorescent cut, and no to 80% blue white cream fluorescent residue.

Three cores were cut in the well. Cores 1 and 2 were cut in the top of the Hegre Group reservoir from 1952 to 2004.1 m with 100% recovery. Core 3 was cut in the Permian sandstones from 2090 to 2099 m with 94.2% recovery. MDT fluid samples were taken at 1952.1 m (oil), 1963 m (oil), 1970.1 m (oil), 1971.61 m (water), 1978.3 m (water), 2001.72 m (water), and 2075 m (water). Single flash of the uppermost oil sample gave a GOR of 233.4 Sm<sup>3</sup>/Sm<sup>3</sup> and an oil density of 0.8482 g/cm<sup>3</sup>.

The well was permanently abandoned on 1 April 2018 as an oil appraisal.

#### TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/4-11