



## Wellbore History

### GENERAL

Well 7120/7-2 is located in the Snøhvit Field area. The primary of the well was to test possible hydrocarbon accumulations in sandstones of Middle to Early Jurassic age.

### OPERATIONS AND RESULTS

Wildcat well 7120/7-2 was spudded with the semi-submersible rig West Vanguard on 26 May 1983 and drilled to TD at 2523 m, 5 meters into Late Triassic rocks. Due to boulders at the spud location the rig was moved 11 m north and respudded. A sand body with shallow gas was encountered at 378 m to 382.5 m and it was decided to set the 20" casing shoe above this sand. After setting this casing the rig was shut down due to strike from 3 June at 2400 hrs to 18 June at 1125 hrs. The well was drilled using gel mud down to 815 m, with gypsum/polymer mud from 815 m to 1515, and dispersed to a lignosulphonate (Unical) mud from 1515 m to TD.

Hydrocarbon accumulations were discovered in the Middle Jurassic Stø Formation sandstone sequence from 2149.5 m down to a gas/water contact at 2228 m. Shows were recorded below 1809 m in the Cretaceous Kolje Formation. Organic geochemical analyses showed that TOC increases down through the Cretaceous, but generally the Cretaceous mudstones were regarded as immature, poor source rocks with a primary potential for gas. Entering into the silty shales and mudstones of the Late Jurassic Hekkingen Formation at 2107 m TOC increases abruptly above 3%. TOC continues to increase to 9 % at the base of the Hekkingen Formation. These shales are potentially very good source rocks for gas and condensate above ca 2120 metres and rich sources for light oil and gas below this depth. Maturity evaluation was difficult due to reworked material and cavings, but most likely the well is immature all through, possibly marginally mature below ca 2000 m. Five cores were cut in the sandstones from 2168 m to 2244 m. Four RFT samples were taken. Sample 1 was taken at 2150 m (gas, mud filtrate and film of condensate), sample 2 at 2151 m (gas, mud filtrate and condensate, sample 3 at 2225 m (mud filtrate and water), and sample 4 at 2220 m (mud filtrate and minor gas).

The well was permanently abandoned on 21 August as a gas/condensate discovery.

### TESTING

One DST was performed in the Stø Formation in the intervals 2168 m to 2179.8 m and 2153 m to 2164.8 m. The lower interval was intended for pressure monitoring to test possible communication between the two zones, but the pressure recordings failed. The test produced 702450 Sm<sup>3</sup> gas and 31.5 Sm<sup>3</sup> condensate /day on a 64/64 choke during the main flow. Condensate density was 0.77 g/cm<sup>3</sup> and the gas gravity was 0.68 (air = 1) with a CO<sub>2</sub> content of 5%. No H<sub>2</sub>S was recorded. This corresponds to a very dry gas condensate similar to the 7120/7 and 7120/8 hydrocarbon systems.

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## LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7120/7-2