



Wellbore History

GENERAL

Wildcat well 7121/5-1 is located on the eastern part of the Snøhvit Field. It was drilled about 75 m down flank on the Alpha-structure in the block. The Snøhvit structure consists of an east-west running horst and a rotated normal faulted block. The main objective in the well was to test possible reservoir rocks of Jurassic/Triassic age as seen in neighbouring wells.

OPERATIONS AND RESULTS

Well 7121/5-1 was spudded with the semi-submersible installation West Vanguard on 7 June 1985 and drilled to TD at 3200 m. The rig was shut down from 16 June to 30 June due to a strike. Otherwise drilling proceeded without significant problems. The well was drilled with spud mud down to 865 m, with a gypsum/polymer mud from 865 m to 1925 m, and with polymer mud from 1925 m to TD.

Top reservoir came in at 2369 m with hydrocarbons. From RFT pressure measurements the gas/oil contact was found at 2427.5 m and the oil/water contact at 2442 m. Logs displayed sands with possible hydrocarbons in Triassic sandstones, but increasing shale down hole reduced porosity/permeability and DST test confirmed a tight formation. Geochemical analyses showed immature rocks until 2250 m and marginal to significant maturity in Triassic/Jurassic rocks respectively. Nine cores were cut in the interval 2365 m to 2523 m in the Stø, Nordmela and Tubåen Formations. One core was cut from 3088 m to 3109 m in the Triassic Snadd Formation. Four RFT segregated samples were taken in the upper part of the Stø and Nordmela Formations from 2370 m to 2434 m, one in the Tubåen Formation at 2507 m, and one at 2802.7 m in the Snadd Formation. A small amount of condensate in the sample from 2370 m was the only reported liquid hydrocarbons from the RFT samples. Otherwise gas was recovered in the samples from 2424 m and 2370 m, while the sample from 2507 recovered mainly water/mud filtrate and minor gas. The sample from 2802.7 m contained only minor amounts of mud filtrate and no hydrocarbons. Some weak shows were recorded in the Snadd Formation. The well was permanently abandoned on 28 September 1985 as an oil and gas appraisal.

TESTING

Three drill stem tests were performed. DST IA from 2802 m to 2820 m in Triassic sandstones gave no response from the formation. DST I tested the interval 2436 m to 2439 m near base of the Stø Formation. The 9-5/8" casing was first perforated with 6 shots/foot, and after that the well was re-perforated by 12 shots/foot (DST I RR) in an attempt to improve flowing rates. DST 1 produced oil and gas during the main flow at a rate of 229.1 Sm3 and 27190 Sm3, respectively through a 12.7 mm choke. The gas/oil ratio was 119 Sm3/Sm3. DST 2 perforated the interval 2394 m to 2403 m in the upper part of the Stø Formation. This test gave no response and the formation was considered tight.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7121/5-1