



Well 25/5-4 is located approximately in the centre between the 5/5-5 Discovery and the Frøy and Skirne Fields in the northern North Sea. The prospect was defined at Intra Statfjord Formation level, consisting of two compartments offset by an E-W fault. No significant closure was expected at Base Cretaceous. The main target was the Middle Jurassic Vestland Group sandstones. Early Jurassic Statfjord sandstones was secondary target. The expected fluid was most likely oil. No shallow gas was expected.

OPERATIONS AND RESULTS

Wildcat well 25/5-4 was spudded with the semi-submersible installation Dyvi Stena on 22 December 1990 and drilled to TD at 3185 m in Early Jurassic sediments of the Statfjord Formation. Only minor problems were encountered during drilling the Hordaland Group. The well was drilled with sea water and bentonite down to 1208 m, with a KCl mud from 1208 m to 2805 m, and with lignosulphonate mud from to 2805 m to TD.

The results for the main seismic markers were close to prognoses (from 17 to 36 m higher than prognosis). Sandy water bearing reservoirs were encountered in the basal Tertiary Heimdal and Ty Formations. The Vestland Group reservoir (Hugin + Sleipner Formations) was encountered from 2895 to 2941 m and was completely filled with a retrograde condensate. Extracts of core material showed a significant increase in extractable organic matter below 2932 m, and the EOM was significantly more oil-like (saturates > 55%) than the upper part of the reservoir. The Statfjord Formation proved good reservoir quality but was water bearing. Organic geochemical data proved excellent source rock characteristics in several levels throughout the Jurassic, with oil prone kerogen in the Draupne and Heather Formations, and gas - condensate prone kerogen in the Vestland Group and Statfjord Formation. The source potential of Draupne is similar to the one known in the surrounding wells, while the Heather has better characteristics. The extreme base of Heather (below 2889) exhibits a very good source rock potential. The mineralogical composition of the Draupne shales differs from the Heather formation (X-ray diffraction), the latter being more calcareous (18 to 26% of calcite instead of 0 to 14%). Vitrinite reflection indicates beginning of the oil window (%Ro = 0.55) at ca 3000 m in the Dunlin Group, below the best source rocks in the well.

Three conventional cores were cut, two from 2904 to 2949 m in the Hugin and Sleipner Formations, and one from 3059 to 3077 m at top Statfjord Formation. Segregated FMT samples were taken at 2929.5 and 2935.2 m in the Sleipner Formation. The 2 3/4 gal chambers in both samples were opened offshore and both contained about 1500 litres gas, 0.8 litres condensate and 1 litre mud filtrate.

The well was suspended on 7 March as a gas/condensate discovery. The well was planned to be re-used as a producer.

TESTING

One DST tests was performed in the interval 2923 - 2933 m and flowed at a rate of 759600 Sm3/d gas and 223 Sm3/d condensate through a 20.3 mm choke. The gas-condensate ratio was ca 3500 Sm3/Sm3. The condensate density was 0.76 g/cm3 and the gas gravity (air = 1) was 0.70. The maximum flowing temperature was 105 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 25/5-4