



Wellbore History

GENERAL

Well 31/5-2 R is a re-entry of well 31/5-2. The overall purpose of these wells was to test the reservoir quality, the oil/gas columns, and the hydrocarbon/water contact in the area. The objective of the re-entry was to undertake drill stem testing of the reservoir.

OPERATIONS AND RESULTS

Appraisal well 31/5-2 was re-entered (31/5-2 R) with the semi-submersible installation Treasure Saga. The rig arrived location on 10 June 1984 but due to problems with anchor handling, and on establishing 4 guidelines to well head before running BOP on riser the well was not re-entered before 13 June. After the bridge plug was retrieved at 642 m the hole was circulated with seawater and finally displaced with CaCl brine. Due to the complexity of the tests, equipment failures and an unplanned third test, the duration of the testing period was 67 days, 42 days longer than prognosed.

After testing the well was permanently abandoned on 30 August 1984 as an oil and gas appraisal.

TESTING

Three drill stem tests were performed.

DST 1 tested the interval 1577 - 1581 m and produced maximum 1000 m3 oil + water /day trough a 25.4 mm choke. The GOR was 53 Sm3 /Sm3 at 10.3 bar and 60 deg C throughout the test. The corresponding WHP was 22 bar with a nitrogen injection rate of 11.5 m/min. The water production started in the beginning and increased continuously through the test. The final water cut was 62%. The oil density was 0.896 g/cm3 and the gas gravity (air = 1) was 0.66.

DST 2 tested the interval 1574 - 1576 m and produced maximum 1290 m3 oil + water/day through 44.5 + 23.8 mm choke. The GOR was 53 Sm3 /Sm3 with separator conditions of 3.8 bar and 29degC. The corresponding WHP was 15 bar. The water production started after 50 hours of flow and the water cut increased to 34%. The oil density was 0.89 g/cm3 and the gas gravity (air = 1) was 0.66.

DST 3 tested the interval 1546.5 - 1554.5 m produced 1200000 Sm3 of gas / day trough a 44.5 mm choke. The gas/condensate ratio was 41700 Sm3/Sm3 at separator conditions of 32 bar and 12 deg C. The corresponding WHP was 70 bars. The liquid (condensate) density was 0.78 g/cm3 and the gas gravity (air = 1) was 0.61.

The maximum temperatures recorded during the tests were 68.3 deg C in DST 1, 73.8 deg C in DST 2, and 68.3 deg C in DST3. The reported reservoir pressure was 157.6 bar at 1575 m in the oil zone and 157.9 bars at 1550.5 m in the gas zone.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 31/5-2 R