SBT reduces time, cost, and risk for North Sea well decommissioning

A major operator in the North Sea planned a decommissioning campaign to safely abandon more than 100 wells. Traditionally, the operator had removed the completion, then evaluated the cement behind the casing to establish cement isolation over the producing and water-bearing zones. Subsequently, cement barriers were pumped into the identified zones and the plugs were set at the desired depths.

Because of the large number of wells to be decommissioned, the operator needed a less time-consuming solution that would increase efficiency and optimize costs without compromising safety.

There were some difficulties to be overcome. The first well in the campaign to be decommissioned was completed with 7-in. production tubing that extended from the 9-5/8 in. casing above. To reduce time, cost, and risk, the operator needed to evaluate annular isolation at the interval behind the casing without fully pulling the tubing. The well also had a 20° deviation, further complicating the operation.

The **Segmented Bond Tool™ (SBTTM) well integrity evaluation service** from Baker Hughes, a GE company (BHGE), was deployed for the operation. With its fully collapsible, motorized arms, the SBT can be run through smaller tubing and then opened to log the exposed casing section. After logging, the arms can be closed to safely extract the tool out of the borehole.

This unique capability of the SBT enabled the operator to leave the majority of the tubing in the hole prior to performing the cement bond evaluation, saving considerable time. A quantitative 360° assessment of the cement bond integrity in six angular segments was performed around the casing, covering the full circumference. The data was then processed by the BHGE **SBT Seal advanced cement bond analysis service** to quantify the cement bond.

Information gathered by the SBT and the intuitive graphical representation of this data ensured faster verification of the cement placement and the quality of zonal isolation. The operator was able to

**Challenges**
- Cement evaluation to be completed without full removal of the completion tubing
- Well deviated at 20°
- More than 100 wells to decommission

**Results**
- Operator proceeded with confidence to carry out a safe and efficient operation
- Saved days of time, significantly reducing operational costs
- Accommodated the smaller tubing without risk to equipment
- Acquired quality data needed to make fast, informed decisions
confidently proceed with the project. BHGE was able to provide a safe solution that would save days of time, reduce costs, and avoid operational risks.

Based on the successful evaluation of cement needs in this challenging operation, BHGE services have been used to evaluate cement bonds in several subsequent wells for this operator.

SBT Seal analysis enabled efficient decisions for decommissioning the well using the through-tubing SBT approach.

SBT deployment through tubing to log the exposed casing section with majority of tubing still in the well.