



CASE STUDY

Adding intelligence to efficiently isolate conformance issues in complex horizontal wells

THE CHALLENGE

A multi-national operator of a mature North Sea field experienced a well conformance issue between multiple zones of a long reach horizontal producer and neighbouring water injection well. With a rapid decline in oil production and longer-term implications of Enhanced Oil Recovery (EOR) efficiency, the operator sought to intervene and isolate the breakthrough of injection water at source.

The combination of high operating costs and a complex completion, equipped with seventeen producing zones and thirty-five Sliding Sleeves Devices (SSDs), placed a high demand on decisive well site decision making in order to minimise operational risk and maximise intervention efficiency.

THE SOLUTION

The READ team discussed the issue with the operator and demonstrated how ZeroTime® logging while working technique would provide accurate confirmation of successful SSD manipulation without the need for dedicated logging runs. As a result a ZeroTime® service was integrated into a coiled tubing SSD shifting operation in order to shut off the source of breakthrough water from the injecting well.

The high resolution data acquired by ZeroTime® ruggedised Casing Collar Locator, fast response temperature and borehole pressure sensors was analysed at the well-site to provide rapid, definitive determination of the status of each sleeve and the effectiveness of shifting operations after each and every run in hole.

CLIENT OVERVIEW

Multi-national operator in the North Sea region

SERVICES

Sliding Sleeve Device position identification

TECHNOLOGY INVOLVED

ZeroTime® Coil System with Casing Collar Locator, Pressure and Temperature sensors



THE RESULTS

Three SSDs were successfully manipulated from an open to a closed position. Critically, the information derived by ZeroTime® confirmed the success of each manipulation in the absence of positive surface tension indications by the Coiled Tubing system.

The application of ZeroTime® eliminated two coiled tubing runs, resulting in a reduction of approximately 24 hours of operating time and a simplified, risk-reduced operation.

Upon confirmation of successful SSD closure the well was put back online and injection restored. Analysis of surface rates of the neighbouring production well revealed successful isolation of injection water and increased hydrocarbon production had been achieved.

KEY RESULTS

- Rapid, accurate confirmation of successful SSD manipulation
- Eliminated two runs in hole by logging while working
- Reduced operating time by 24 hours
- 100% safety record and zero operational NPT
- Successful isolation of injection water and restoration of production levels

“The operation efficiency that we gained and the reduction in time to restore production enabled by ZeroTime® ensured a highly successful, cost effective intervention.”

*Completions Engineer
Multi-national operator*