



## CASE STUDY

### CORROSION LOGGING BY **MBTT3** IN ABANDONED GL OIL PRODUCER WELL ALLOWED TO PREVENT THE RISK OF PARTED TUBING DURING PLANNED WO

**Location:** Middle East

**Well type:** horizontal water injector.

**Challenge:**

The tubing replacement was planned for the abandoned oil producer well with high risk of tubing/casing corrosion.

**Objectives:**

Evaluate the corrosion status of tubing and casings to ensure the safety of planned WO operations.

**Solution:**

The MBTT3 corrosion logging was proposed as an industry-proven approach for corrosion evaluation in multi-barrier wells completions.

#### **Multi Barrier Thickness Tool (MBTT3)**

MBTT3 is designed to evaluate the metal loss of the tubing and casing based on emission and measurement of an electromagnetic field with the following data processing. The tool provides a qualitative evaluation of tubulars thickness with an accuracy of 0.01 inches.

The technology is based on the induction of a current in a string by a pulsed magnetic field and the subsequent recording of electromagnetic field (EMF) decay in pipes. This parameter is used to determine casing wall thickness and to identify and characterize defects. Analysis of EMF decay at various time domains enables the evaluation of multi-string structures.





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### Results

The corrosion logging results revealed severe tubing corrosion of up to 71% of average circumferential metal loss with a high possibility of through-wall defect across the bottom section above the tubing packer. In addition, the casing (2nd pipe) also appeared to be severely corroded across the same interval and above with a maximum circumferential metal loss of 48%.

Based on the log findings the tubing replacement was cancelled due to a high possibility of the tubing being parted during pulling operations.

### Major outcomes

- Tubing and casing severe corrosion was detected
- Indication of the tubing through-wall defects was revealed
- High risk of parted tubing during WO was prevented

