

Real-Time Acoustic Evaluation of Cement Integrity Saves Operator USD 100,000

CAST-M™/RBT-M TOOL COMBINATION ENABLES FASTER, MORE-CONFIDENT CEMENT EVALUATION

OFFSHORE EGYPT

CHALLENGES

- » Operator needed quick data turnaround to evaluate lightweight cement placement for planning next course of action
- » Client required high confidence in data quality for informed decision making

SOLUTIONS

- » A CAST-M™/RBT-M acoustic combination was recommended for real-time answers
- » Two independent sets of acoustic data also increase confidence level in data accuracy

RESULTS

- » Data transfer and processing were performed in two hours, allowing for quick decisions to be made
- » Client saved USD 100,000 in rig time
- » Client benefited from the improved accuracy of data, and plans to use this combination of tools to analyze cement on future projects

OVERVIEW

To ensure long-term cement integrity, a major oil company operating offshore in the Gulf of Suez needed to evaluate a 9.2-ppg lightweight slurry in a deviated 5-in. liner section. A quick data turnaround was necessary to decide the next course of action and avoid the expensive offshore rig standby costs. Halliburton proposed a Circumferential Acoustic Scanning Tool – Monoconductor (CAST-M™)/Radial Bond Tool – Monoconductor (RBT-M) combination to reduce uncertainty as fast as possible – with real-time answers. Data transfer and processing were performed in two hours, allowing the customer to make swift decisions about the cement conditions. A 9⁵/₈-in. casing section was also logged in the same run using the inline centralizers, saving the equivalent of USD 100,000 in additional rig time by eliminating an extra run. This successful combination will be used to log all future wells in this area.

CHALLENGES

The oil company operating offshore in the Gulf of Suez needed to evaluate a 9.2-ppg slurry in a deviated 5-in. liner to ensure long-term annular seal of the reservoir. The client had chosen to use lightweight cement to minimize damage to the reservoir. For this offshore project, a real-time evaluation decision needed to be made. Close collaboration and job design would be critical for a successful operation.

SOLUTIONS

Halliburton met with the client and cement service provider to gather all of the required cement data, and to discuss deviation and cementing job design. Both Cerberus™* simulation software and CAST planner software were run to simulate the optimum operational conditions that would ensure good data quality. As a result of these studies, a CAST-M/RBT-M combination run was proposed to reduce log uncertainty through the acquisition of independent sonic and ultrasonic measurements. Both acoustic tools generate a circumferential image of the cement map, yet use different operating principles. These two sets of images can be compared for a better confidence level of the true state of cement behind pipe.

* Cerberus™ is a trademark of NOV CTES.



\$AVED
USD 100,000
IN RIG TIME

HAL42007

RESULTS

Through proper prejob planning with continuous customer interaction, data transfer and processing were performed in two hours, minimizing the wait time for the customer to decide on the action to be taken on the cement conditions. By running the CAST-M/RBT-M combination, the operator had a greater confidence from analyzing the two independent data sets – data that previously was only obtained post-processing. The operator’s drilling department has since sanctioned the use of this technology combination for cement evaluation in all upcoming new well drilling.

A single 9⁵/₈-in. casing section was also logged in the same run using the inline centralizers, saving rig time by eliminating an extra run. In all, this operation saved the equivalent of USD 100,000 in rig time by evaluating both casings in real time in one run.

The operator’s drilling manager noted, “Congratulations for the excellent cement jobs done for both production liners. Excellency of the job was proved by running the RBT-M and CAST-M tools through both liners. Special thanks to the Halliburton team for bringing up the RBT tool as a new technology, which will help us to evaluate cement jobs in slimhole liners and maybe save time in future jobs.”

DATA TRANSFER AND PROCESSING
WERE PERFORMED IN TWO HOURS,



HAL-42008

**MINIMIZING WAIT TIME
FOR DECISION MAKING**

www.halliburton.com

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H012120 2/16 © 2016 Halliburton. All Rights Reserved.

HALLIBURTON