

Middle East

Plug setting aid saves operator two days of rig time during complex P&A operation

BHKA™ plug setting disconnect tool delivered dependable barrier for the permanent plug and abandonment of mature-well in Middle East

CHALLENGE

- Perform permanent plug and abandonment of 7,000-ft interval
- Increase overall efficiency and success of cement plug operations

SOLUTION

- Deploy BHKA™ disconnect tool for effective and efficient abandonment of interval in single operation
- Tailor cement slurry system for optimum gel and compressive-strength development

RESULT

- Pumped and placed 253 bbl of cement slurry
- Safe release of sacrificial string
- Achieved and confirmed wellbore integrity with TOC tagged 10 ft above planned depth
- Saved approximately two days of rig time

Overview

The achievement of an efficient and dependable barrier during plug and abandonment (P&A) operations can be difficult. Often, these activities rely on repetitions of stacked cement plugs to cover the full length to be isolated and remedial operations to correct lack of pressure-bearing capabilities. In addition, operational risks could be incurred if the conventional boundaries for cement slurry design are exceeded.

Challenge

An operator was challenged with the effective abandonment of a 7,000-ft interval inside a 7-in. cased hole. The conventional method to stack cement plugs requires excessive operational time because of the 650-ft plug length and wait on cement (WOC) time necessary between each plug. The small casing inside diameter (ID) increased the risk of cement slurry contamination and cement plug integrity. Safe cement placement and successful plug tagging were required to achieve the wellbore integrity necessary for permanent well abandonment.

Solution

Halliburton and the operator identified an optimal strategy to execute the P&A program in a safe manner and ensure objectives were achieved. Halliburton proposed the BHKA plug setting



disconnect tool for its successful application history during offshore jackup operations in the country.

To help ensure safe placement, proper zonal isolation, and hard cement after the required WOC, the slurry was designed with a focus on fast initial set and overall strength development in addition to safe pumpability time.

Result

A total of 7,000 ft of sacrificial pipe was connected to the retrievable section of the string via the BHKA plug setting disconnect tool and run in hole (RIH) to the final depth of 8,700 ft MD.

At depth, the cement operation was performed and fluid was placed after the approved program and a displacement dart was used to separate fluid and function-release the sacrificial tail pipe. The release mechanism operated as desired, which led to the first

single-stage, abandonment plug operation for this operator onshore, which extended beyond 7,000 ft in length.

After WOC, the crew tagged the top of plug and performed successful pressure integrity tests, both critical requirements for the well abandonment. Job objectives were achieved and the operator saved two days of rig time.

**BHKA™ plug setting
disconnect tool saves
2 days of rig time**

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