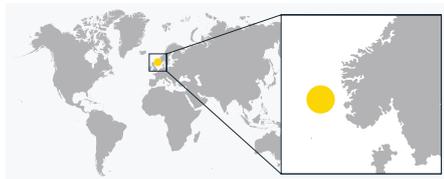


Archer's Plug and Perforate System Saves Major Operator Nearly \$3 Million, 11 Days' Rig Time



Region: North Sea

Customer: Major operator

Case benefits

- Saves nearly \$3 million
- Saves 11 days of rig time
- Perfect for deviated wells due to no need for weight below to set
- Plug & Perforate solutions provide full lateral isolation

Key capabilities

- ISO 14310 VO rated gas tight seal
- Easy, rapid set and retrieve
- No weight below to set
- Multiple sets without tripping
- Unrestricted 3" fullbore
- Ultra shallow, deep or Horizontal set 20m to 6550m
- Designed to be run with TCP guns

Typical Applications

- Temporary suspension
- Permanent abandonment
- Leak detection
- Storm contingency suspension that requires high hang off weight
- In-flow testing

Challenge

When drilling the well, the 9 5/8" casing became stuck and no circulation was possible through the shoe. The decision was made to plug and abandon (P&A) the wellbore, and facilitate a new side track.

The operator started recovering 4,577m of casing and achieved limited progress. They spent 21 days cutting and pulling 3,182m of the casing. The open hole fishing operation with a well profile of 73 degrees inclination proved to be challenging. The operator needed to explore an alternative technical solution to complete the P&A operation.

Solution

The solution was the Archer Plug and Perforate system. The Plug and Perforate system is built on the SPARTAN plug and Archer's own Tubing Conveyed Perforation (TCP).

A benefit with the SPARTAN plug is that it does not require any weight/tail pipe to set, making it a unique choice for deviated wells like this one. Another benefit is that it is designed to hang perforation guns below and the unique 3" ball valve enables activation balls for perforation guns to be dropped through the plug to fire the TCP guns. casing above the cut.

The first step of the operation was to run down and set a SPARTAN plug at 4,852 m to provide a path for the cement and to isolate the bottom of the hole. The SPARTAN was run through approximately 900 m of open hole before it entered the 9 5/8" casing fish. The plug was set according to plan and procedure, and running tool was pulled out of hole.

The second step was to run the second SPARTAN plug with TCP guns, then perforate the casing between 4,838m and 4,840m, with 12 spf 0.5 holes. Part of the job was to set the SPARTAN at 4824m and circulate the 9 5/8" casing annulus.

The third and last stage was to cement the 9 5/8" up to 4,342m through the SPARTAN ball valve and into the perforations and up. At the end of the cement displacement, the pressure was held inside the string. At that stage, the SPARTAN ball valve was closed to stop the cement from u tubing from the annulus. Two cement plugs were set inside the casing up to 4390m to complete the P&A operation.

Result

The result was a flawless P&A operation saving the customer 11 days of rig time vs the planned cut and pull operation. The cost saving was estimated to nearly \$3 million, providing a solid blueprint for future operations.

*Currency is in US dollars.

