Wellbore Integrity SOLUTIONS

Planning and Experience in Geothermal Operations in Indonesia Ensures Success

Two different operational examples highlight specific procedural requirements in geothermal applications.

CHALLENGE

To ensure operational success in geothermal applications, two examples are highlighted that include requirements to operate in a total fluid loss scenario. The second example also includes the additional challenge of milling in a high compressive strength formation.

SOLUTION

In both examples, a combination of thorough planning, customized procedures for geothermal applications, and experienced local personnel were instrumental in ensuring success.

RESULTS

Example 1

- The liner was successfully cut and retrieved while under total fluid losses.
- The customer continued to drill an open hole sidetrack and reach the desired reservoir target.

Example 2

- The cased hole sidetrack into a high compressive strength formation was delivered in one trip using the TrackMaster Select System.
- The well was successfully concluded.

Example 1: Cut and pull a 10¾ inch perforated liner to enable an Open Hole Sidetrack

As common in many geothermal operations, fluid losses and uncertainty in the annulus versus drillstring pressure regime is a significant challenge. In this particular example, a hydraulically activated pipe cutter was used to successfully cut a 10¾ perforated liner, despite the total fluid loss scenario in the wellbore. The local WIS team worked closely with the customer to tailor a specific operational procedure to ensure hydraulic optimization.

Prior to the deployment of the WIS cutting BHA, a conventional rotary BHA was used to simulate and quantify fluid losses in the wellbore. The cutting BHA was then deployed and successfully cut the liner at the required depth. The liner was subsequently retrieved as planned.

The customer then continued to perform an open hole sidetrack and reach the reservoir target depth.

Example 2: Conduct a successful sidetrack in 13⅜ casing with a high compressive strength formation in a total fluid loss scenario.

In addition to experiencing total fluid losses, this geothermal well required a sidetrack in a high compressive strength formation. For this example, the WIS team also prepared a customized operational procedure to ensure success. Due to uncertainty in the hydraulic flow regime, the TrackMaster Select* System was oriented to the desired position using a gyro to eliminate the risk of prematurely setting the anchor. A tri-mill configuration was also utilized to ensure that both the casing was milled and the rathole drilled in a high compressive strength formation.

The sidetrack was completed successfully in a single trip. The subsequent directional drilling BHA was then deployed to drill ahead as planned.

Both the above examples highlight the importance of planning, customized procedures, and local experience in Geothermal operations.

TrackMaster Select

- A HISTORY OF INNOVATION
- UNRIVALED EXPERIENCE
- GLOBAL PRESENCE