Adrilltech’s GeoFracture service allows fractures to be identified while drilling, providing valuable reservoir information without the costs and risks of downhole tools. This identification and characterisation helps assess the value of reserves in place and assists the driller in deciding how to manage pressure and losses effectively, eliminating lost time associated with LCM strategy uncertainty.

- Fractured reservoirs are increasingly important for the production of hydrocarbons
- The presence of natural fracture systems is critical to the success of many geothermal projects
- Accurate identification of the location, size and nature of fractures is critical to optimising stimulation and completion programs
- GeoFracture is able to identify and characterise the downhole fracture environment in real time during drilling operations
- Timely data allows stimulation and completion plans to be improved whilst drilling is ongoing

GeoFracture provides immediate identification of the presence and nature of fractures whilst drilling without downhole tools
Case History
Identification of Open Fractures in Real Time from surface measurements

Figure 1. The curve in black is the Delta Flow which matches the signature of a natural open fracture in Figure 3.

Figure 2. Imaging log confirming a large open fracture.

Figure 3. Fracture models used to compare responses in Delta Flow.

An open fracture was detected at 3086 m while drilling a carbonate reservoir section. Fracture signature in the black DeltaFlow curve (Figure 1) matches the characteristics of a natural open fracture (Figure 3).

The presence of the fracture was confirmed through the Image Log recorded at the end of the section as shown in Figure 2.

Technical Paper

References


Real Time Advanced Surface Flow Analysis for Detection of Open Fractures. SPE-154927 (EAGE, Copenhagen, June 2012)