Baker Hughes

Case study: Gulf of Mexico, United States

WellLink Assurance service saved GOM operator $40,000 USD

Pore pressure monitoring is used to determine the ideal casing point of a well. The process involves analyzing formation evaluation data gathered by logging-while-drilling tools and geological samples, comparing it against model data and, in some cases, updating the models to identify the casing point. This continuous, manual monitoring process can be time-consuming and tedious. It

can also result in poor and ineffective decision-making, especially when monitoring multiple wells.
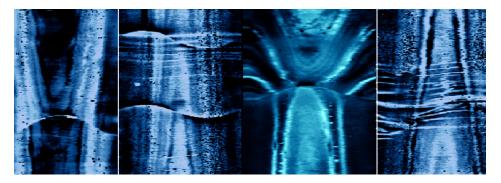
A Gulf of Mexico operator wanted to automate the process, make better decisions, and reduce rig down time during the critical phases of casing point detection. The operator consulted Baker Hughes for a solution. Baker Hughes Drilling Services and Remote Operations and Managed Services recommended the **WellLink™ Assurance service** because of its proven capability to use complex algorithms to detect problems.

The WellLink service is a web-based application using industry-standard wellsite information transfer standard

markup language (WITSML) protocol for automatic look-back analysis of data over different depth ranges. Several formation evaluation inputs, along with the static model data, were assigned a weighting factor and a cumulative percent was used based on the look-back analysis to determine if the cumulative threshold percent was green, yellow, or red based on the defined limits for each color category. The application analyzed the data in a sliding window of defined depth to continuously present a real-time threshold to indicate the probability of casing point.

Further, the task of generating reports through Excel was automated using the application for a one-click report.

The automated look-back analysis of the real-time data enabled automated monitoring of the pre-established real-time pore pressure conditions, resulting in better decision-making. It also eliminated the need for manual analysis, resulting in significant time saving of $40,000 USD in personnel costs.

Challenges

- Inefficient, time-consuming manual evaluation process costing rig time during the critical phases of casing point detection
- Ability to monitor several parameters in real-time to detect critical zones

Results

- Improved decision-making accuracy and efficiency
- Saved operator $40,000 USD by eliminating costs associated with manual analysis by an engineer

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