**FLAIR Service Identifies Hydrocarbon Zones for Successful Downhole Fluid Sampling in Tight Reservoir**

Advanced gas logging module provides quantitative measurements and improves selection of representative sampling targets in reservoir, offshore Abu Dhabi.

**CHALLENGE**
- Reduce uncertainties in reservoir fluid evaluation due to lack of representative offset data.
- Identify movable hydrocarbon zone in a reservoir and guide downhole sampling tool to collect a referential fluid sample.

**SOLUTION**
Use the FLAIR* real-time fluid logging and analysis service along with the Techlog* wellbore software platform to evaluate hydrocarbon zones before running downhole formation evaluation tools.

**RESULTS**
Successfully identified two zones within the reservoir for sampling and refined sampling stations and strategy.

**Gather high-resolution data to map tight, deep reservoir**
A target reservoir in the Gulf has a 20% porosity, but the presence of movable hydrocarbons have been reported from certain structures. Well B is the first of an appraisal-well drilling campaign in this deep and tight reservoir and was drilled to gather and evaluate reservoir potential. The nearest offset is Well A, drilled 35 years ago with limited logging tools.

**Deploy FLAIR service for versatile, advanced surface measurements**
Schlumberger recommended the FLAIR service to enable better appraisal of the target reservoir’s fluid characteristics and achieve more accurate downhole fluid sampling. This would deliver high-resolution data and nearly complete formation fluid coverage while drilling. Advance measurements include quantitative C₁ to C₅ hydrocarbons, qualitative C₆ to C₈ hydrocarbons, and C₇H₈, C₆H₆, and MCC₆ aromatics. The FLAIR service also measures CO₂ and helium qualitatively. Data gathered using the service were further analyzed using the Techlog platform.

**Identified two sampling zones using integrated service workflow**
When drilling Well B, the operator collected downhole fluid samples at two zones identified by the FLAIR service, which were marked as Peaks 46 and 47. Sample A was collected at Peak 46 and produced inconclusive PVT lab results. One month later, Sample B was collected, and laboratory analysis showed a close comparison to the previous FLAIR service quantitative composition, validating reservoir understanding.

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**CASE STUDY**
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**CASE STUDY:** FLAIR service provides successful downhole fluid sampling in HPHT reservoir, offshore Abu Dhabi

The FLAIR service helped achieve accurate and successful downhole fluid sampling where high-resolution data gathering was a major concern in thin and tight reservoir layers.

The use of the FLAIR service ahead of downhole formation evaluation enabled the operator to:

- prove the presence of movable hydrocarbon for better selection of downhole representative sampling zones
- perform accurate fluid typing (oil, gas, or water) and compositional analysis with lighter and heavier components
- optimize coverage of the sampling zone with continuous fluid logging
- combine formation evaluation, dynamic drilling information, and wireline logging to develop an efficient testing strategy.