Case Study

HydroFORM™ Centralizers

Efficiency of Strategic Centralizer Placement

Centralizer Placement Significantly Reduces Time to Reach Total Depth Time.

The Challenge

A North American based energy producer had been experiencing challenges running 4-1/2" liner in their extended reach horizontal wells in the Northern US Bakken formation, resulting in very inefficient and time consuming liner runs. Approximate details of these wells include a 25,000 ft. MD with a 10,000 ft. TVD and a 15,000 ft. horizontal section. The customer shared the following information about their previous liner runs:

- The composite rigid centralizers that had been previously utilized were being called into question when pieces of the centralizers where repeatedly found in the fluid returns at the shakers.
- Significant issues were being experienced during running (especially in the last 2,000 ft.), resulting in substantial amounts of additional time and effort needed to get the liner to Total Depth.

The Solution

The customer identified Volant's HydroFORM™ Centralizers as a viable solution for the next well due to their robustness. Volant's rigid centralizers are manufactured using a proprietary process that precision forms tubular steel, resulting in a smooth unit-body shape.

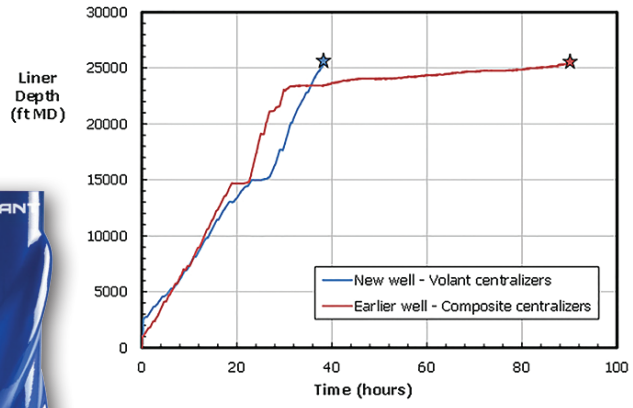
Part of Volant's response was to employ its inhouse applications engineering capabilities (a combined effort between the Volant Engineering Team and Volant's consulting subsidiary, Noetic Engineering) to determine the likelihood of the liner string experiencing running challenges associated with buckling-induced side loads.

Combining torque and drag analysis with a deep understanding of fundamental buckling mechanics, Volant was able to predict significant side loading resulting from buckling of the liner string in the heel section of the well; a common characteristic found in long reach horizontal wells.

Using proprietary centralizer placement strategies, Volant's approach was to mitigate the incremental running friction from this type of buckling by way of optimizing the placement of Volant HydroFORM™ Centralizers. The finalized centralizer placement strategy was determined through discussion between the customer's Drilling Engineer and Volant's Engineering Team. The end configuration saw a modest increase in the number of centralizers being recommended compared to previous wells of similar design, but with a more deliberate placement strategy.

The Results

The next available well was offset from the prior well and had a very similar configuration. Volant HydroFORM™ Centralizers were installed, freefloating with stop collars, at the recommended engineered intervals. Other than utilizing Volant centralizers and Volant's proprietary centralization placement program, no other changes were made to the liner running operation. TD was successfully reached in less than half the time it took for the previous run: 39 hours vs 91 hours, which is a substantial 57% reduction in run time. The customer was extremely pleased with the success of the placement strategy in combination with Volant HydroFORM™ Centralizers, noting that the centralizers had remained intact for the entire run.



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