

Case Study

Precision Cementing in SCOOP's Slim-Hole Wells

Location: SCOOP (South Central Oklahoma Oil Province)

CHALLENGE

An operator drilling in the SCOOP play faced significant challenges due to their slim-hole well designs. These wells, targeting the Devonian to Mississippian-aged Woodford Shale—a silica-rich, highly organic black shale formation—presented unique difficulties. The narrow wellbores made equivalent circulating density (ECD) and pumping pressures critical concerns during cementing. Compounding this, the frac gradients and pore pressures were relatively close, leaving very little margin for error during cementing operations.

SPINNAKER SOLUTION

To address these complexities, Spinnaker's Technical Team, in close collaboration with the operator's Drilling Engineering Team, developed a strategy to cement the production section underbalanced. This approach allowed for successful cement placement while minimizing formation stress.

EXECUTION

Key highlights of the operation included:

- Extensive lab testing of slurry systems, tailored to match downhole and top-of-cement (TOC) temperature profiles.
- Rheological and compatibility testing of spacers and mud recovery fluids to ensure seamless mixing and pumping of fluids.
- Accurate simulation and planning, ensuring optimal fluid volumes and pump rates.

RESULTS

The outcome was a series of highly successful cement jobs, with CBL (Cement Bond Log) results confirming excellent bonding and TOC consistently reaching or exceeding planned depths. The operator was extremely pleased with the results, deeming the entire operation both safe and efficient.

