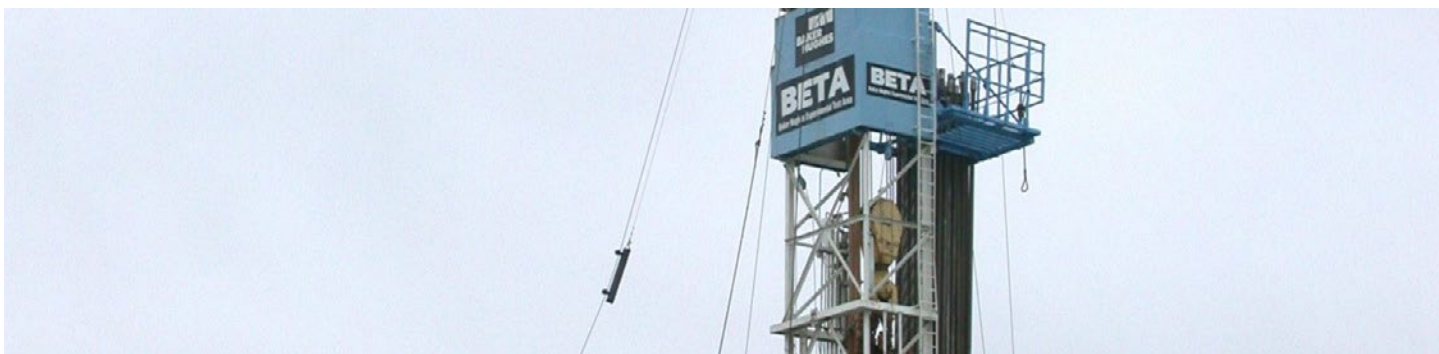


Case History: HydroPull™



Cement Milling with Tempress HydroPull™ Tool — Prudhoe Bay, Alaska

A major operator on the North Slope of Alaska was experiencing unwanted gas production in the heel of a well that was recently sidetracked.

The challenge was shutting off the gas producing perforations above, while preserving a 100 ft. section of perforations at the toe of the well. The solution was to isolate the toe and squeeze the gas producing perforations, and then mill the plug allowing production from the toe. After drifting the wellbore to PBTD, a composite bridge plug was set approximately 180 ft. above the perforations at the toe of the well, at 11,420 ft. MD. A gel and cement treatment was pumped to shut off the gas producing perforations prior to removing the cement and composite bridge plug using a Baker Hughes 1 $\frac{11}{16}$ -in. Xtreme motor and a 1 $\frac{11}{16}$ -in. Tempress HydroPull™ tool.

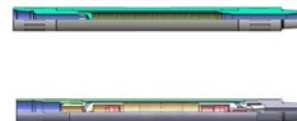
Job Summary:

All facets of the plug and cementing operations went as planned; however, when milling operations ensued following the cement squeeze there was noticeable weight transfer issues while attempting to mill cement with just the 1 $\frac{11}{16}$ -in. Xtreme motor. A common theory was that the mill (BHA) was being hydraulically lifted off the cement plug due to the small annular area between the 1.995-in. ID liner and 1.69-in. OD tools string, resulting in an inability to get weight to the mill, therefore, dramatically reducing ROP.

When the decision was made to pick up a Tempress HydroPull™ tool, a 1 $\frac{11}{16}$ -in. tool was flown up to Prudhoe Bay in less than 48 hours from the initial phone call to the Tempress team. The Tempress HydroPull™ tool was selected to run in conjunction with the Baker Hughes 1 $\frac{11}{16}$ -in. Xtreme motor BHA to mill the remaining cement and the composite plug.

The milling BHA consisted of an HCC Diamond Parabolic Mill(1.75-in. OD), Baker Hughes Xtreme motor, Tempress HydroPull™ tool, Circulating Sub, Disconnect, Jars, Back Pressure Valve, Dimple-on Coil Tubing connector, and 1 $\frac{1}{2}$ -in. OD coil tubing. Once on bottom milling, the remaining 220 ft. of cement was milled up, as well as, the Composite Bridge Plug. Although a number of stalls were encountered during the operation, consistent weight on bit was achieved throughout the milling process. The Tempress HydroPull™ was instrumental in completing the job and the customer was extremely satisfied with the result.

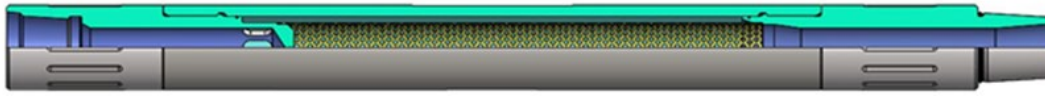
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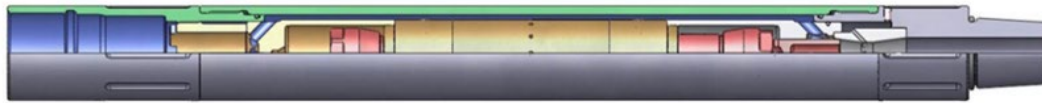
TEMPRESS®

OIL STATES Energy Services

Cement Milling with Tempress HydroPull™ Tool — Prudhoe Bay, Alaska



Tempress Screen Sub



Tempress HydroPull™ Tool