

Bottomhole Circulating Temperatures - Validation

CHALLENGE

Verify circulating temperature modeling with experimental results.

SOLUTION

Compare CTEMP's results with a technical paper's presented experimental results.

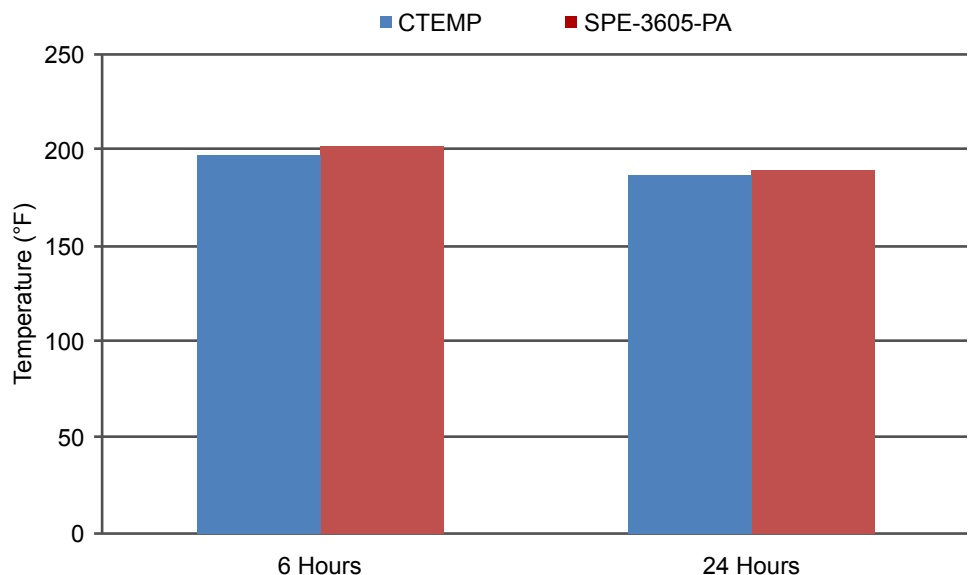
RESULTS

Bottom hole and return temperatures calculated at both six and 24 hours matched within 3 deg F.

As a routine part of the validation process for software calculations, CTEMP was compared with another temperature modeling software (Software B) and the results presented in "Temperature Distribution in Circulating Mud Columns" by H.H.Keller^[1]. The comparison between CTEMP and software B showed very similar results, as did the model set to mimic the results presented in the paper.

Comparing CTEMP with Keller's paper required a separate model to replicate the setup for those results. Temperatures were calculated at six and 24 hours circulation time, both at the bottom of the hole and in the return lines. Bottom hole circulation showed 197 and 200 deg F at six hours and 187 and 189 deg F at 24 hours, for CTEMP and Keller's paper, respectively.

The comparison between CTEMP and Keller's paper, as well as with software B, show closely matching results. Having run similar comparisons and researching other temperature modeling software, Pegasus Vertex, Inc. is confident of the reliability of CTEMP's calculations and the superiority of both its sophistication and ease of use.



Bottomhole Temperature Comparison