CASE HISTORY
HIGH-TEMPERATURE POST-FRAC LINER EVALUATION

APPLICATION
Cased Hole Logging
Well Integrity

TECHNOLOGY
Cased Hole Services
+ Vulcan™ MFT-24

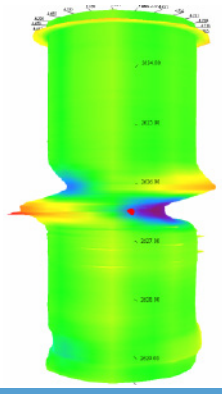
LOCATION
Australasia

CLIENT CHALLENGE
A client's frac operations in two wells (one completed with 5 $^{1}/_{2}$" liner and the other 4 $^{1}/_{2}$") resulted in suspected liner deformation. With a maximum well temperature of 165°C (330˚F), standard logging tools would likely encounter problems.

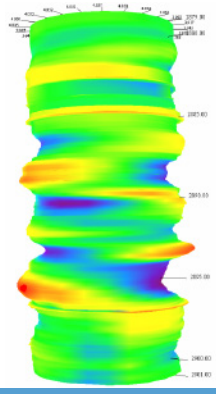
The client's objective was to attain accurate and comprehensive data and visuals of the deformation without jeopardizing the tool's integrity due to exposure to high temperatures.

SCIENTIFIC SOLUTION
Scientific Drilling offered a fit-for-purpose solution with the Vulcan™ MFT-24 caliper. The Vulcan™ MFT-24's pervasive track record in high-temperature applications gave the client confidence that their data acquisition requirements would be met.

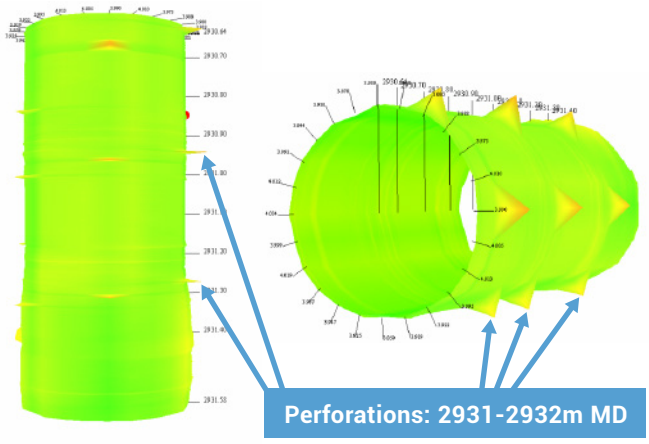
A time-in-flask simulation was conducted prior to the run to inform the maximum possible run duration before the tool's maximum internal temperature would be reached. The simulation showed that logging could be performed across the interval of interest at 6m/min, equating to a vertical resolution of 0.036" thanks to the fast sampling rate of 100/sec.



5 $^{1}/_{2}$" liner shear buckling



4 $^{1}/_{2}$" liner helical buckling



Perforations: 2931-2932m MD

CLIENT VALUE
With the Vulcan™ MFT-24, the client made no compromise on the quality and quantity of the data acquisition. The alternative option of deploying standard temperature tools would have very likely resulted in lower resolution data, requiring logging to be conducted at faster speeds to limit high-temperate exposure. A standard tool may have significantly impaired the ability to capture the quality of data required to produce the 3D images in the figures.

The data delivered by Scientific Drilling provided the client with the insight required to plan subsequent well interventions and remedial operations safely and efficiently.

Updated July 2023