

# CASE HISTORY

## MPNN FRAC EVALUATION

### APPLICATION

Reservoir frac evaluation

### TECHNOLOGY

MPNN

### LOCATION

Asia Pacific

### CUSTOMER CHALLENGE

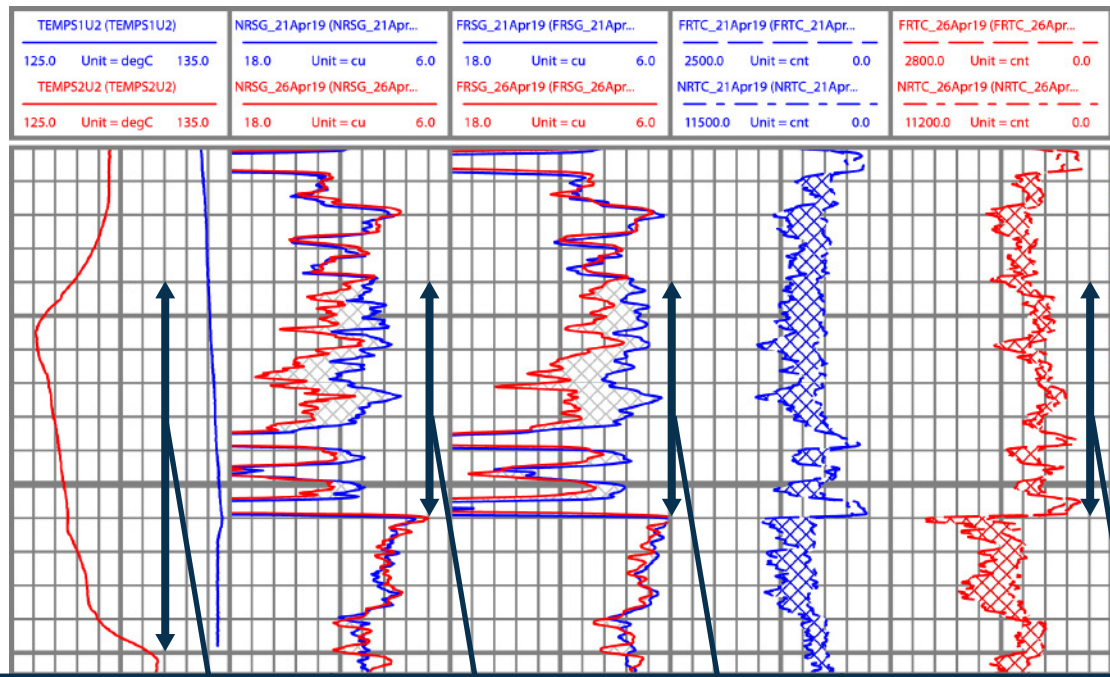
The customer's gas reservoir required hydraulic fracturing in order to stimulate production. To evaluate the resultant fracturing of the formation, inert, (high capture cross-section) ceramic frac proppant was deployed. However, in order to detect the inert tracer, the customer sought pulsed neutron technology that could be conveyed in memory mode.

### SCIENTIFIC SOLUTION

Scientific Drilling's Memory Pulsed Neutron-Neutron (MPNN) technology was the perfect solution for the application. The MPNN was logged before and after the frac operation inside 4-1/2" tubing, with two passes completed on both runs. The output Sigma data and Near/Far Total count separation clearly identified the frac'd zone thanks to the high capture cross-section of the proppant used.

### CUSTOMER VALUE

The MPNN helped avoid the need for hazardous radioactive tracers, vastly improving the HSE factor of the project. In addition, the ability to convey the MPNN on slickline eliminated any requirement for electric-line with its associated pressure control burden, and the environmental implications of grease injection. The reliability and accuracy of the MPNN provided unambiguous detection of the frac height and the efficacy of the frac operation was confirmed.



Temperature cooler across indicated interval.  
**Pre-FraC & Post-FraC**

Increase in Near & Far formation Sigma (NRSG & FRSG) across indicated interval.  
**Pre-FraC & Post-FraC**

Decreased separation between Near and Total Counts (NRTC) & Far Total Counts (FRTC) across indicated interval.  
**Pre-FraC & Post-FraC**