

Case Study

& technology showcase

Antenna Sub – Saskatchewan



the challenge

- To provide an Antenna Sub that can be used to drill a well plan which includes aggressive build rates.
- Do comparison testing between the Arrival Antenna Sub and the competitor's gap subs to see if there is an opportunity to build a more reliable tool.
- To prove that the design of Arrival's Antenna Sub is rugged enough to survive back reaming on wiper trips in conditions where the competitor's gap subs have failed.

the solution

- Arrival provided a 4-7/8" Antenna Sub to the customer who was contracted to drill a project containing a number of similar high build rate wells in Saskatchewan. All of the wells are monobore and have surface casing set to 100m and are drilled to an average measured depth of 1500m.
- The behavior of each of the subs was measured by tracking the raw signal strength (in AC millivolts) with relation to depth.

measured success, real value

- The signal strength from the Arrival Antenna Sub was 622mV at 110m depth and indicated a very strong efficiency of the transmitter output to the surface.
- In the two runs that the Arrival Antenna Sub was used, the Arrival sub performed better in the curve in comparison to the competitor's designs. The insulation of competitor's gap sub #2 was found to be shorted on surface after the run and had to be sent to the manufacturer for repair.
- Both the Arrival Antenna Sub and the competitor's gap sub were subjected to similarly high doglegs. The Arrival Antenna Sub successfully survived the run; the competitor's gap sub failed. The rig used a top drive and the Arrival Antenna Sub was subjected to back reaming on wiper trips throughout the build section (16 hours for run #1, and 31 hours for run #2).
- The survivability of the Arrival Antenna Sub through these tortuous conditions is a testament to the rugged design. Signal strength and efficiencies for competitor's gap subs may be comparable to Arrival's Antenna Sub at the start of a run however the Arrival Sub provides a more consistent, stable signal response with time and under tough drilling conditions.



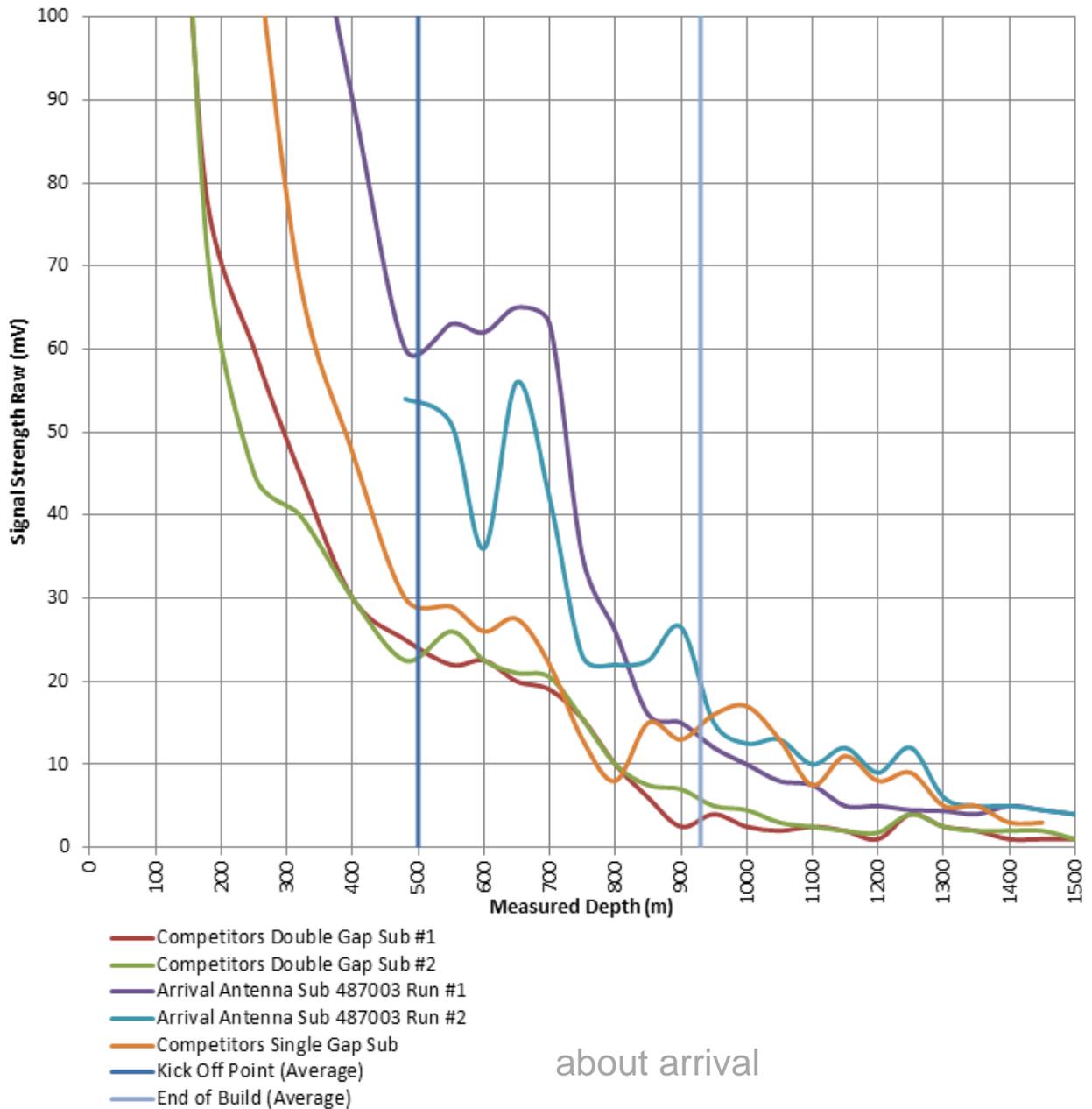
Arrival Oil Tools Inc.

Innovative engineering. Downhole excellence.

946 55 Avenue N.E.
Calgary, Alberta
Canada T2E 6Y4
403.730.6660

www.arrivaloiltools.com

Antenna Sub Performance Comparison



about arrival

Arrival Oil Tools engineers and manufactures innovative downhole drilling tools for the oil and gas industry.

Powered by skilled and experienced people with a shared desire to enable operators to push the envelope in both downhole capability and performance, Arrival is quickly becoming one of the industry's leading solution providers.



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