

VectorZIEL Rotary Steerable System

VectorZIEL successfully completes 8” batch drilling deployment in US application

Technology

NOV’s VectorZIEL™ rotary steerable system (RSS) features inclination, azimuth, and gamma ray capabilities within 5 feet of the bit along with an integrated pulser that produces near-bit survey and continuous measurements. VectorZIEL is available to independent directional drillers and operators world-wide.

Challenge

Redeploy the 8” VectorZIEL 800 (VZ800) on subsequent well in a batch drilling application to complete a 12-1/4” intermediate section with tangent in two runs for an application in Oklahoma, USA. This challenging application required that the motor-assisted rotary steerable system be capable of drilling out the surface casing shoe at 1,500’ MD, building a nudge at 1,800’ MD with 2-deg DLS to an inclination of 2.5-deg, and holding the tangent for more than 8,500’ MD to complete the section.

Results

The VectorZIEL 800 successfully completed the section in two runs on its second deployment in the US. The tool successfully built the nudge and held the 2.5-deg INC tangent. After kicking off the nudge, the directional provider wanted to gradually come back to the target line and finish the hole section ahead and to the left of line. At section TD of 10,539’ MD, the VZ800 run ended 7.7’ ahead and 11.2’ left of plan. For both runs, the same VZ800 tool was used. Once at surface, the tool was inspected and had minimal wear after two runs through aggressive drilling parameters and many challenging formations.

	Run 1	Run 2	Total
Drill Hrs	59.91	25.33	85.24
Circ Hrs	14.67	13.67	28.34
Tot Hrs	74.58	39.00	113.58
Below Rot. Hrs	93.67	55.83	149.50
Depth In, ft	1,518	8,218	1,518
Depth Out, ft	8,218	10,539	10,539
Footage, ft	6,700	2,321	9,021
ROP	111.8	91.6	105.8
GPM	550-900	700	550-900
MW, ppg	8.9 WBM	9.4 WBM	8.9-9.4 WBM
Bit RPM	90-181	103	90-181
WOB, klbs	15-50	40-50	15-50



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