



WWT Silencer Helps Reduce Vibration and Improve Bit Life

Executive Summary

- Drilling through the abrasive formations in the Permian’s 2nd Bone Spring has caused numerous downhole MWD and drill bit failures due to high levels of vibrations. WWT Silencer Non-Rotating Sub assembly was utilized in the BHA to mitigate downhole vibrations, which resulted in improved drilling performance.

Accomplishments

- Drilled 1 mile in 24 hours using conventional steerable BHA.
- Drilled the entire 2 mile lateral with one BHA.
- 42% Increase in average ROP.

2 Well Pad: one with WWT Silencer, one without.

- Both wells had were adjacent to each other, in the same formation, and used similar BHAs.
- Without Silencer, 2 BHAs to drill the lateral, with severe wear to both drill bits.
- WWT Silencer: One BHA, almost no bit wear.



Grading Structure	Abbreviation	Standard BHA		Standard BHA		Silenced BHA	
		Lateral Run 1 Grade	Grade Description	Lateral Run 2 Grade	Grade Description	Lateral Run 1 Grade	Lateral Run 1 Grade
Inner Rows	I	8	Linear Scale*	1	Linear Scale*	1	Linear Scale*
Outer Rows	O	6	Linear Scale*	3	Linear Scale*	1	Linear Scale*
Dull Characteristics	D	RO	Ring Out	BT	Broken Cutters	NO	No Dull Characteristics
Location	L	N	Nose	G	Gauge	A	All Areas
Bearing/Seals	B	X	X	X	X	X	X
Gauge	G	6	3/8" Out of Gauge	1	1/16" Out of Gauge	0	In Gauge
Other Dull Characteristics	O	NR	Not Rerunnable	PN	Plugged Nozzle /Flow Passage	NO	No Dull Characteristics
Reason Pulled or Run Terminated	R	PR	Penetration Rate	TD	Total Depth	TD	Total Depth

Linear Scale* 0 - 8 : 0 – No lost, worn and/or broken cutting structures | 8 – All of cutting structures lost, worn and/or broken