

# Reduced Vibration and Torque after Installing WWT NRPs

## High Torque and Vibration on ERD

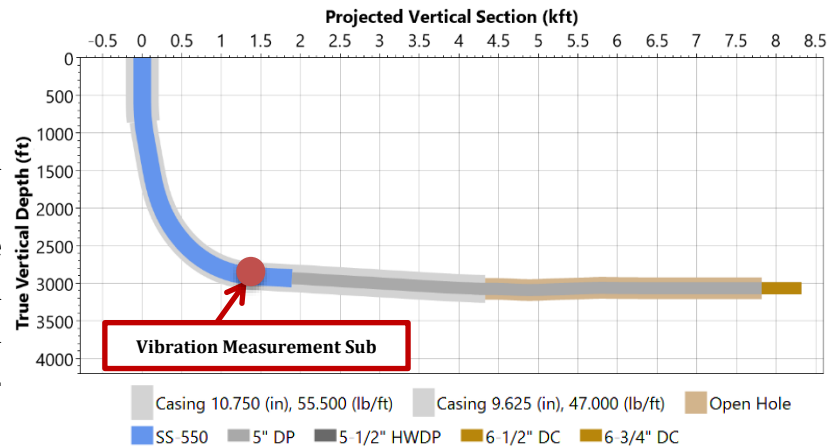
An operator drilling an ERD well encountered high torque and vibration while drilling the 8-1/2" section. A vibration measurement sub was installed on the second run. For the third run the decision was made to install WWT NRPs, covering from surface to the end of the build for torque reduction and mitigation of vibration effects.



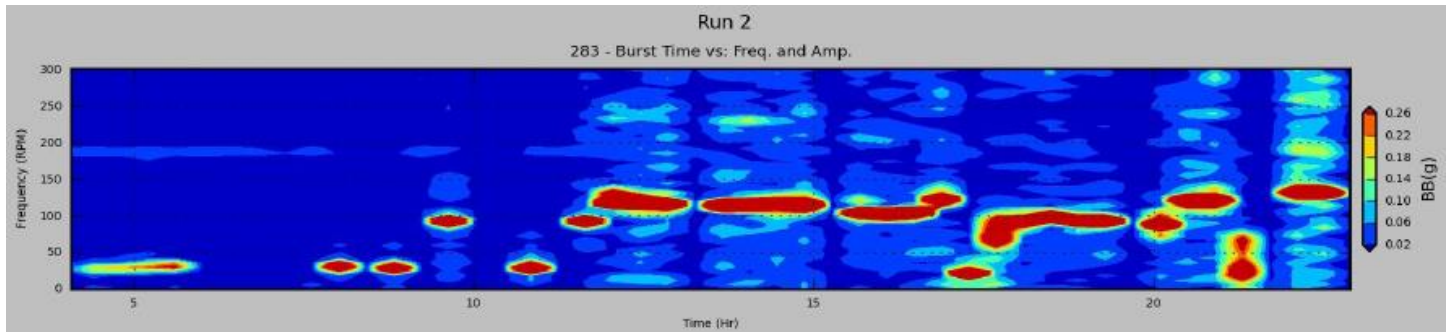
**Location: Europe**  
**Well Type: Horizontal ERD**  
**Objective: Torque Reduction**  
**Solution: SS-550**  
**Benefit Seen: 40% Torque Reduction; Reduced Vibrations**

## WWT NRPs Installed: Torque Decreased by 40% with Reduced Vibrations

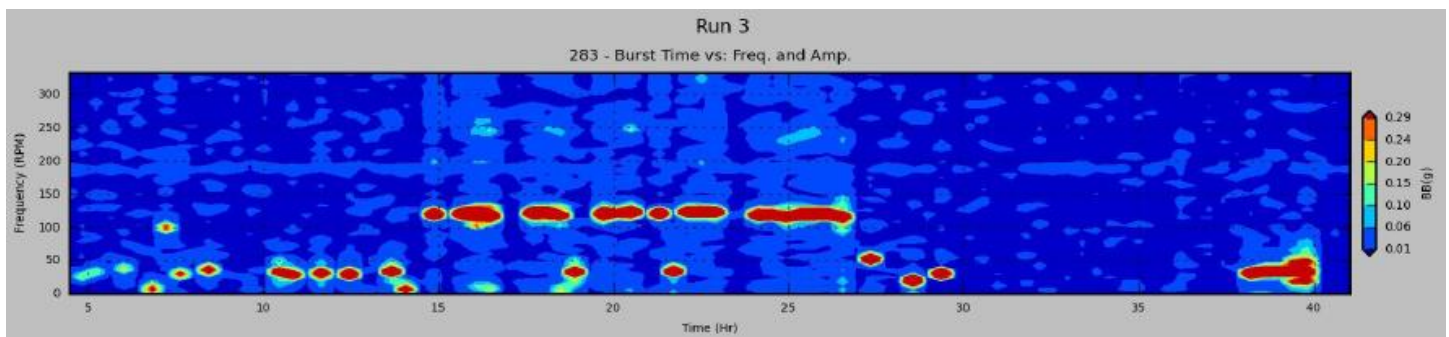
WWT NRPs model SS-550 were installed on drill pipe and HWDP as shown in the adjacent figure. At TD, torque reached 20kft-lbs, 40% less than the simulated 35.5kft-lbs based on torque trends from Run 2. Vibration measurements also showed significantly less severe readings as shown below.



## Run 2 vibration without WWT NRPs



## Run 3 vibration with WWT NRPs



WWT Non-Rotating Protectors  
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