

Torque Reduced By 23% After Installing WWT NRPs

High Torque While Drilling Ahead

Operator wanted to reduce the chances of high torque while drilling.

NRP Recommendation

WWT Non-Rotating Protectors (NRPs) were recommended with the goal of reducing the drilling torque. A total of 75 SS3-578 NRPs was installed at a frequency of one per joint on every joint. The figure on the right shows the recommended placement, where the shaded blue area represents the NRP placement at TD.

Estimated 23% Torque Reduction

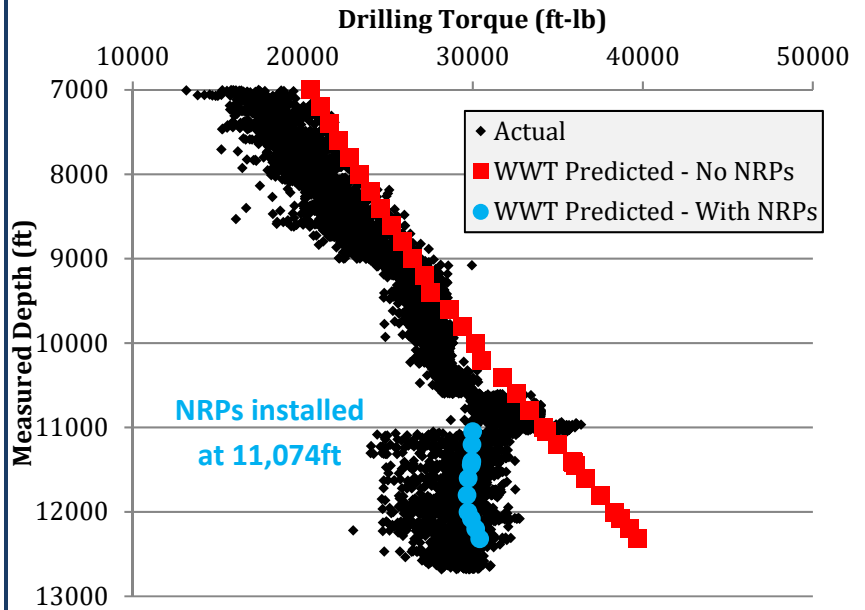
A trip was made to install 75 NRPs to finish drilling the section to 12,680ft. After installation, the drilling torque immediately was reduced by 16% to 30kft-lbs.

WWT's torque predictions were made with drilling parameters provided by the customer. Friction factors of 0.40 cased-hole, 0.50 open-hole with 25klbs WOB were used in the analysis. While these friction factors are high, they do represent this well accurately.

The drilling torque plot, shows the actual drilling torque received from the customer as well as WWT's predicted torque with and without NRPs. These data indicate the NRPs provided a 23% torque reduction at TD.



Location: Latin America
Well Type: S- Shaped
Objective: Torque Reduction
Solution: WWT SS3-578
Results: 23% Torque Reduction



Contact Force / Protector Placement Graph / Fuerza de Contacto y Posicionamiento de los Protectores

Area of Concern	Placement MD: Start of Run			Placement MD: End Of Run			Protectors Per Joint	Protector Quantity	Model
	Zone	Top	Bottom	Top	Bottom	Joints			
A	0	1561	44	541	3194	75	1	75	SS3-578

