

Predictive Drilling Improves Average ROP by 17%, Saves 1.5 Days in Rig Time

Nabors & Corva have jointly developed an innovative solution for closed-loop drilling automation using an AI-based ROP Optimizer, named Predictive Drilling, along with the SmartROS Rig Operating System. This combination enables remote control of rig site Auto Driller setpoints through a seamless cloud-to-cloud connection, without the need for any additional rig devices.

Overview

An Operator in the Williston Basin sought to use the newly developed Artificial Intelligence-based ROP Optimizer, Predictive Drilling, to optimize weight-on-bit, RPM, and differential pressure set points within a user defined ROP objective for six wells. Predictive Drilling leverages a rotary drilling optimized ML model to analyze drilling parameters in real time and recommend optimal set points considering min/max thresholds. The resulting setpoints are executed automatically via the integration with SmartROS®, allowing for continuous control and optimization without requiring thousands of manual changes by the driller.

Case Study Facts

LOCATION: Williston Basin

CUSTOMER: Operator

TIME FRAME: Sept - Dec 2023

Results

Leveraging Predictive Drilling with SmartROS, the Williston Operator safely accelerated ROP while extending bit life for the six wells, resulting in:

- **17%** Improvement in Average ROP
- **78%** Average Utilization
- **5 of 6** Laterals were Drilled with a Single Bit
- **36 Hours** Saved in Total Rig Time