

Nabors' MPD-Ready® EXPRESS automation enables well completion 12.2 days ahead of schedule

Challenge

Deploy the MPD-Ready® EXPRESS system and train drillers to operate equipment efficiently through automation. Operator sought to maintain wellbore stability and mitigate produced gas by applying Surface Back Pressure (SBP) to increase Bottom Hole Pressure (BHP) at the base of the curve.

Solution

The MPD-Ready® EXPRESS system was installed and enabled through the SmartROS™ rig controls system. Integrating the mud pump controls within the MPD-Ready® software enabled automated pump ramps and contingency reactions reducing required training for onsite personnel. Mud weight was reduced, and the system's automated BHP control mode was successfully applied to maintain BHP at the base of the curve with the drillers adjusting controller parameters.

Results

- 12.2 days saved versus previous well (Table 1)
- Footage per day improved by 29% (Table 1)
- No losses encountered vs offset well.
- 0 hours of NPT attributed to stuck pipe incidents versus 34 hours in offset well (Table 1)
- Reduction in mud weight contributed to an increase in drilling and sliding ROP (Table 1)

Case Study Facts

LOCATION: Jackson Parish, LA

CUSTOMER: Confidential Operator

TIMEFRAME: 08/2020 -09/2020

CUSTOMER VALUE:

Nabors MPD-Ready® Express automation allowed for training personnel to be released after a week of training, **saving \$63,000** in personnel charges.

Utilization of MPD to reduce Mud Weight prevented losses and a stuck pipe event while allowing for increased ROP.

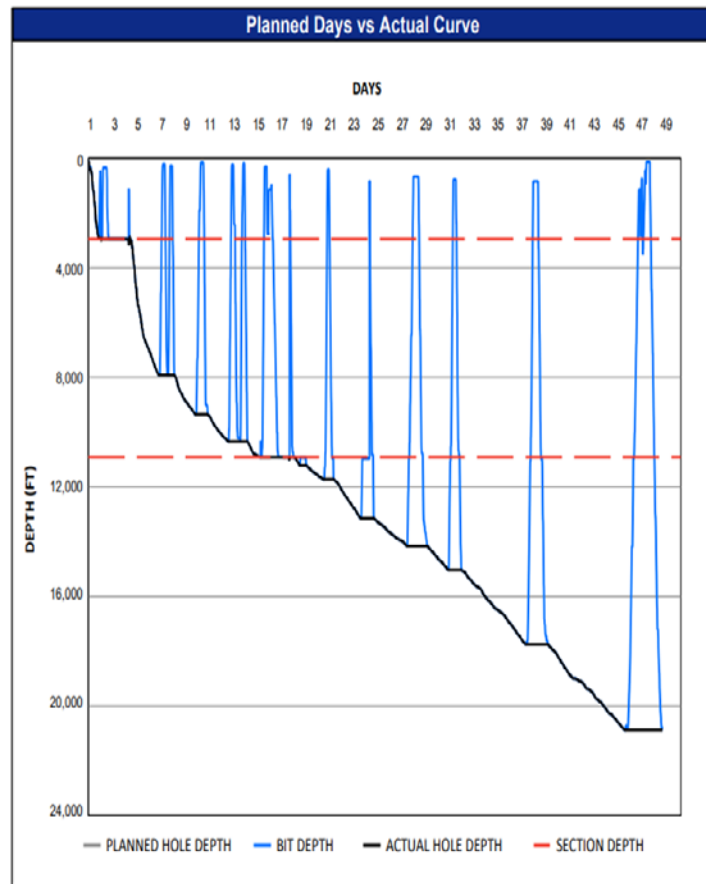
Drilling Performance KPIs

Table 1

Well Name	Total Well Depth (ft)	Spud to Rig Release (days)	Mud Weight @ TD (ppg)	Stuck Pipe NPT (hrs)	Drilling ROP Average (ft/hr)	Sliding ROP Average (ft/hr)
Offset Well	20,047	63.0	13.8	34	15	13.5
MPD-Ready® EXPRESS Well	20,865	50.8	12.3	0	46	15.1

Planned Days vs. Actual Curve

Figure 1



Compared to the previous well drilled in Jackson Parish, deployment of the Nabors MPD-Ready® EXPRESS system exceeded operator’s expectations of planned days versus actual curve.

Effective planning and training enabled MPD automation to complete drilling of the well hydrostatically underbalanced. By drilling hydrostatically underbalanced and utilizing MPD to maintain overbalance, fluid losses and stuck pipe events were avoided. The reduction in mud weight led to an increase in ROP.

OF RIH TRIPS - CASED HOLE - 19 # OF POOH TRIPS - CASED HOLE - 13
 # OF RIH TRIPS - OPEN HOLE - 9 # OF POOH TRIPS - OPEN HOLE - 9

SECTION DEPTH 1: 2,948 FT
 SECTION DEPTH 2: 10,908 FT