

Nabors' efficient operations and performance automation significantly reduce days on well in the Vaca Muerta Formation

Challenge

Safely reduce days on well and operating costs. Operator sought to eliminate geomechanics challenges, wellbore stability issues and reduce connection times by more than 50%.

Solution

Implement the MPD-Ready fully automated dual choke system to mitigate geomechanics challenges and wellbore stability issues. Deploy full stand automation through SmartDRILL to reduce connection times, unplanned trips and ensure execution of operator-defined best drilling practices to reduce days on well.

Results

- Well completed in 31 days versus operator target of 45 days
- Drilling connection average time savings totaled 8.69 minutes, or a 56% reduction. Connection time improvement was driven by MPD-Ready® maintaining Surface Back Pressure (SBP) successfully and SmartDRILL automation of connection sequences (Figure 1)
- Saved an average of 5 days in the production (curve & lateral) sections (Figure 2)
- Rotary ROP increased by 83% and slide ROP increased by 62% (Table 1)

Case Study Facts

LOCATION: BAJO DEL CHOIQUE, ARG

CUSTOMER: Confidential Operator

TIMEFRAME: 04/2021 - 07/2021

CUSTOMER VALUE:

31% reduction in operating costs driven by a **14-day reduction** in well completion.



Drilling Performance KPIs

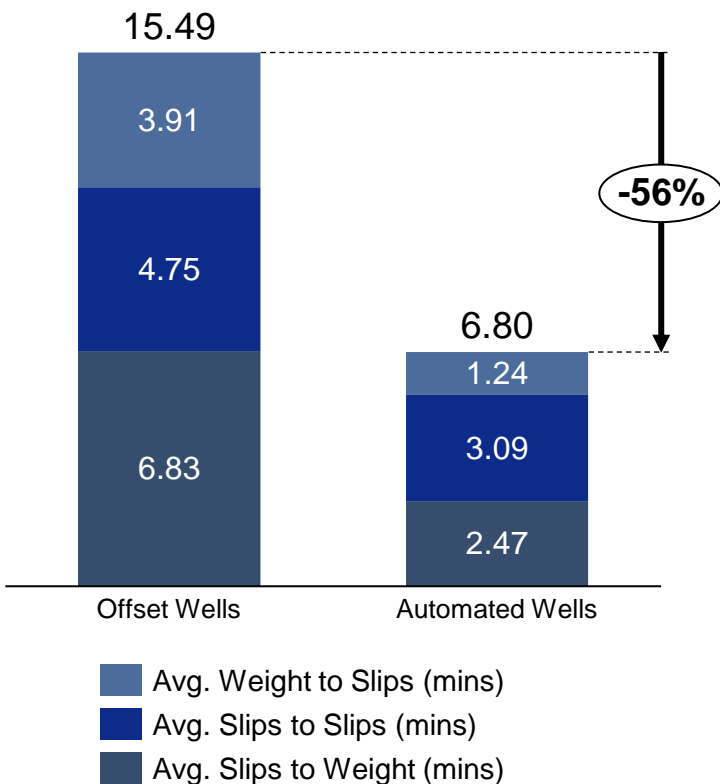
Table 1

Well Name	Avg. Slips to Weight (mins)	Avg. Slips to Slips (mins)	Avg. Weight to Slips (mins)	Avg. POOH Trip Speed – OPEN (ft/hr)	Avg. OPEN Hole Trip Speed (ft/hr)	Avg. Rotary ROP (ft/hr)	Avg. Sliding ROP (ft/hr)
Offset Wells	6.83	4.75	3.91	1,451	1,847	100	45
MPD-Ready + SmartDRILL Wells	2.47	3.09	1.24	1,541	1,980	183	73

The Nabors' MPD-Ready system with hydraulic modeling and SmartDRILL process automation enabled the operator to increase trip speeds, reduce connection times and improve ROP resulting in faster well delivery. The use of automation ensures that the improvements in efficiency did not compromise safety.

Reduction in Drilling Connections Time

Figure 1



Planned Curve + Lateral Drilling Days vs. Actual

Figure 2

