



## CHALLENGES

To use AlphaAutomation to drive performance efficiency and consistency in pad well batch drilling operations in the Montney

## SOLUTIONS

A detailed study of non-automated offset pad drilling performance resulting in optimized drilling parameter roadmaps and AlphaAutomation recommendations as well as continued monitoring, analysis, and updating throughout the drilling program

## RESULTS

- A 27% improvement in drilling productivity for the Alpha pad drilling program versus non-Alpha performance corresponding to approximately \$165K in savings per well
- 3 back-to-back record wells for the operator
- Area benchmark with 50.8 ft/hr on-bottom rate of penetration

## *Alpha™ Technology Sets New Benchmark Performance in the Montney*

### **Montney Case Study**

### **OVERVIEW OF CASE STUDY**

An operator in the Montney engaged Precision Drilling to improve performance on their Montney pad drilling program using Alpha Apps and Alpha Automation.

The operator worked closely with a Precision Drilling Optimization Engineer who conducted a detailed offset well analysis to develop an appropriate drilling parameter roadmap for realizing the greatest value while using Alpha. In addition to parameter set points and operating ranges, 12 Alpha Apps were recommended to the operator. In execution, 8 of these apps were engaged 100% of the time and 4 of which were used as required.

### **ALPHA AUTOMATION PERFORMANCE HIGHLIGHTS**

AlphaAutomation delivered several improvements that resulted in overall increased productivity from spud to rig release with an average of 456 m/day for wells on the Alpha pad compared to an average of 360 m/day on the operator's previous non-Alpha pads in the area (Figure 1). This performance represents a 27% improvement while using Alpha Automation and includes 3 back-to-back record wells for the operator and a pacesetter well for the area (Figure 2).

To achieve these results, the Precision Drilling Optimization Engineer provided real-time analysis and recommendations for adjusting the drilling parameters to continually improve Alpha performance throughout this batch drilling operation. Highlights of the improvements delivered by AlphaAutomation as compared to offset wells include:

- Reduced number of connections reamed from 99% to 20%
- 22% reduction in trip out rates for production section
- Surface section flat time reduced by 50%
- Production section flat time reduced to under 3 hours

Highlights of continuous improvement while drilling on the Alpha pad include:

- Surface section: 47% improvement in ROP
- Main section (build & lateral): 23% improvement in ROP
- Highest daily meterage in the lateral section: 1424 m/day (Figure 2, Well 4)

### **CONCLUSION**

The use of AlphaApps and Automation in conjunction with optimization inputs contributed to significant performance efficiencies resulting in faster ROP, reduced flat time and a benchmark well performance for the area.

## RATE OF PENETRATION

27%

Improvement over  
area offsets

## AUTOMATION EFFICIENCY

20%

Connections reamed vs  
99% on offset pads

## BENCHMARK PERFORMANCE

79%

Reduction in  
connection reamed

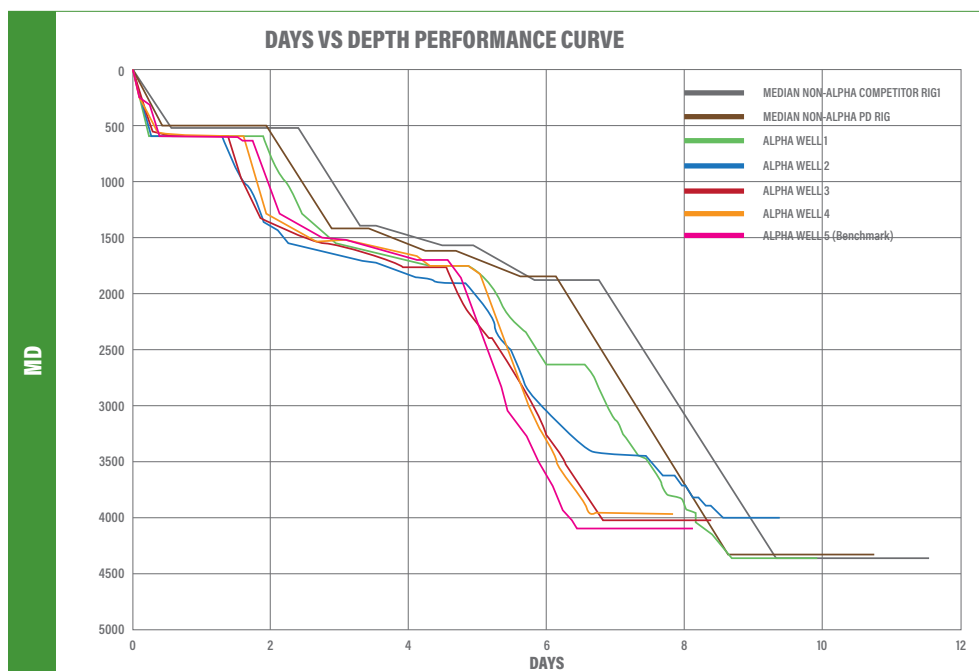
FIGURE 1

Fig 1 compares the average drilling productivity from the operator's two previous non-Alpha pad drilling programs to that of the pad drilled using Alpha. The non-Alpha pads achieved a drilling productivity rate of 360 m/day whereas the Alpha pad showed a marked increase to 456 m/day. All three pads are located in the same general area and target the Montney formation.



FIGURE 2

Fig 2 shows that the performance for the wells drilled using Alpha technology outpaces the median offset well performance by both a competitor rig and a non-Alpha Precision rig. The Alpha wells demonstrate the well-to-well consistency that can be achieved using automation in the surface and intermediate sections, as well as the progressive gains that were attained in the lateral section.



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