Montney Formation
CANADA - ONSHORE
CASE STUDY

Alpha™

CHALLENGE

Evaluating a performing incumbent vs. a low day rate offer

SOLUTION

Evaluate overall project cost including switching costs

RESULTS

Operational Excellence, Technology, Lessons Learned & Incumbency makes a huge difference

Day rate is an unreliable way to evaluate cost of change

Development Drilling in the Montney - Managing Switching Cost

Montney Case Study

MONTNEY FORMATION

For any operator, drilling wells in the Montney formation in North Eastern British Columbia can be a particularly challenging project. These wells in the Canadian Foothills, target formations that are deep, hard, abrasive, and abnormally pressured. Further complexities include unexpected fractures, lost circulation zones, and coal seams. These drilling challenges can cause a significant increase in expected drilling times (slow ROP and NPT) and resulting AFE (authority for expenditure) overruns. Successful navigation though these drilling challenges in this area is one of the top priorites of drilling departments in every operator's organization. It requires translating learnings into consistent and efficient execution, to deliver well to well and pad to pad savings throughout the development program.

CAMPAIGN AND COMMERCIAL ASPECTS

Typical Montney drilling campaigns drill for around 250 days every year, with about 25-30 wells drilled per rig in that time frame. Most of these development drilling programs require 2 or more rigs. There are some smaller duration campaigns spanning only 90 days with 8-10 wells delivered over that time.

These wells have a typical Approval For Expenditure (AFE) of 8.5 - 11.5 days for well depths ranging between 4300 mts - 5700 mts. Average operator spread cost for these wells is about $70k to $100k per day (depending on casing design), and average well construction costs between $800k to $1.2M per well.

As an operator, a development drilling campaign is all about responsibly executing safety and environmental aspects, drilling performance of 500mts-700mts drilled per day and delivering every well within the AFE.

CASE STUDY PREFACE

Typically, campaign durations dictate the length of the rig contracts. Rig costs are the highest ticket item for well construction in the variable cost component of these projects. For this reason, every operator and especially in Montney, the critical project success decision is the selection of most economical rig contractor. Some of the main factors driving every operator's decision are, rig availability with the appropriate specifications within the immediate drilling area to minimize mobilization and demobilization costs. In addition an operator also vets a track record of bringing consistent well cost savings, experience in the area, competent people and dependable technology during evaluation.

This case study is about an operator's cost of change evaluation through a tender. In the previous campaign Precision Drilling was incumbent, and another drilling contractor significantly lowered their day rate to improve their market share position in this strategic area.

Though the cheaper per day rate proposal looked very interesting at first glance, this operator's straightforward analysis of the overall well cost, including switching costs, portrayed a completely different picture. Switching cost consists of incumbent rig efficiency, well construction efficiency through lessons learned, use of technology, and the associated mobilization and demobilization costs.

SWITCHING COST
250-DAY CONTRACT

FIG 1-SWITCHING COST

SWITCHING COST
90-DAY CONTRACT

SWITCHING COST

This Montney operator had a 250 day drilling campaign. Through the tendering process they selected two vendors, incumbent Precision Drilling and another drilling contractor. On evaluating a pure day rate comparison, Precision Drilling's existing rate was 28%- 30% higher than the other drilling contractor's offer (refer to fig-1, 2019- 2020 competitor offer price).

The operator then proceeded to do an overall cost impact for the project AFE. This overall cost impact evaluation included the switching costs. These costs included; Cost savings derived from Alpha technology (Alpha automation, Apps and Analytics), operational excellence in areas of flat time and drilling time.

Mobilization and demobilization cost, which consists of trucking averaging 55 loads per mobilization or demobilization, 2 cranes with max loads averaging 275 tons to 135 tons, and third-party personnel including truck and crane supervisors.

In addition, the operator assigned a cost to any new contractor having to go thought a learning curve, as can be seen in below (fig 2 learning curve). Even assuming a like for like technology offering, the new contractor would have to start at the top of the learning curve negating most of the previous gains.

All these costs once properly accounted for totaled $1.1M for the project, which had to be added to the second vendor bid for proper project cost comparison, (refer to chart for breakdown of cost).

In this particular case, the operator awarded the incumbent, Precision Drilling that contract with a 24% higher day rate price than the alternate bid (refer to chart 2019-2020 offer price).

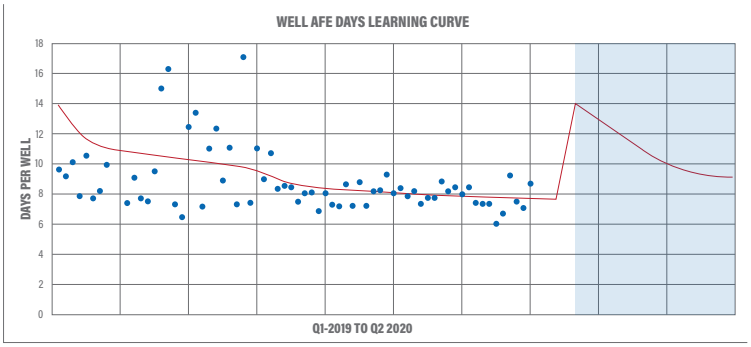

FIG 2-LEARNING CURVE

SWITCHING COST

Most sophisticated operators do not evaluate drilling contractors on day rate pricing but on the overall project cost impact. For an operator, an execution track record of technology driven consistency and efficiency and switching costs are the critical factors to keep or change out rig contracts.

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