

SRVmax™ - Optimized Resource Recovery

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Business Needs

Our customer had been operating in the Montney region for several years before learning of the SRVmax method of designing both their wellbore and fracture spacing. This customer had drilled dozens of wells within the formation straddling the British Columbia/Alberta border in the Western Canadian Sedimentary Basin, experimenting with a variety of wellbore spacing and fracture numbers and sizes. The low price of natural gas made it particularly important to find efficiencies within their operations. They knew they had to come up with a more precise means of completing their wells in order to optimize the economics of their natural gas resource play.

Trican Solution

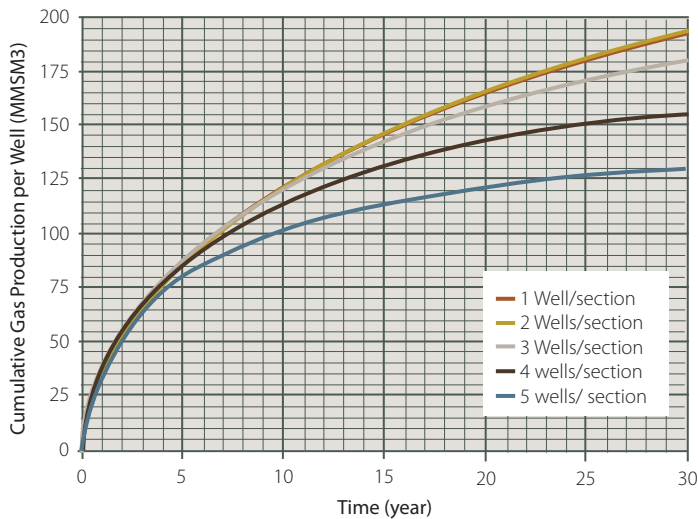
SRVmax is Trican's integrated process for optimizing the recovery of oil and/or gas in a resource play. The process includes a number of stages that bring into focus the preferred method of planning and producing the reservoir. For its Montney play, the customer started with microseismic fracture mapping. This involved monitoring from an observation well the microseismic activity – fracture locations, geometry and orientations – being generated from a treatment being pumped. Microseismic mapping helped them understand the fracture geometry that was particular to their formation. The microseismic data was then input into a Reservoir Simulator that had been matched with two and a half years of production history, for more precise calibration.

The customer employed reservoir characterization as well in order to understand the core characteristics of its reservoir, evidenced in rock properties. Knowing that production from the Montney comes not only from free gas, but also from adsorbed gas, they were able to quantify the amount likely to originate from each source. The customer also provided reservoir data from its own analysis to further constrain the reservoir model. All this information was used to help make the production history matching more accurate, and the simulator more reliable.

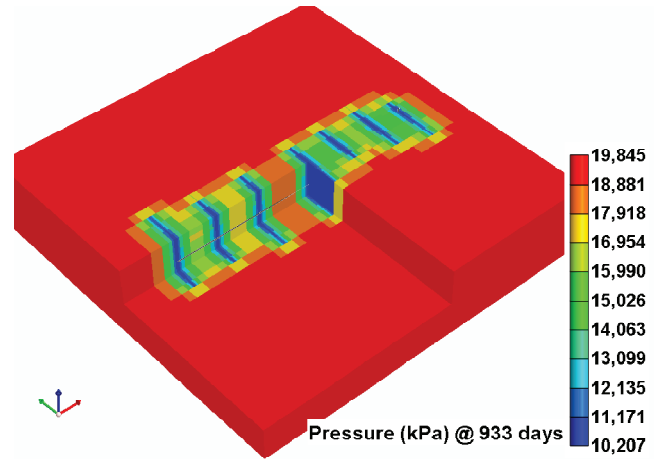
Once calibrated, the Reservoir Simulator was able to run a multitude of scenarios demonstrating how the reservoir would respond to adding or subtracting intervals and treatments, and to the spacing of wellbores.

The Trican Advantage

Because they were able to model various scenarios and compare how the reservoir responded within the simulator, the customer was able to make informed decisions on optimizing their resource play. Trican's SRVmax study led to many new understandings for the customer. For example, the study showed that by simply increasing the number of frac stages by two within a horizontal span, they could increase their production by 22 percent within five years. It also showed that with only two wells in a section, they would leave much of the resource unrecovered, and they adjusted accordingly.



SPE 136700
Productivity comparison for fracture spacing at 150m over a 30-year time period



SPE 136700
Matched drainage area around the 7 fractures in the wellbore

Case Study Snapshot

Date: 2010 **Customer:** Calgary-based energy company **Location:** Basal Doig/Upper Montney **Service Line:** Reservoir Engineering **Product:** SRVmax™

Challenges:

- The industry was in a period of low gas prices. Efficiencies needed to be found in the producing gas wells.
- The customer needed to find a better way to design wellbore and fracture spacing in order to optimize production.

Trican Innovation:

- Trican's Stimulated Reservoir Volume process (SRVmax™) applied to unconventional reservoirs.
- Employing a calibrated reservoir simulator to plot advantageous wellbore/fracture spacing and design.

Results:

- The customer was able to analyze an increase in wellbores and compare that with resulting recovery factors and costs, in order to come up with an optimal design.
- The customer was able to validate increasing the number of wellbores to at least three per section, while decreasing fracture spacing.
- For more detail on this SRVmax study and its results, see SPE 136700



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