

**DEEPA for deep matrix acidizing: 250% production boost in wells in a carbonate formation, Canada**



“DEEPA is very well suited to the stimulation applications in our part of Canada. The proof lies in that extraordinary production improvement of 250%. DEEPA doesn’t let us down.”

**VP Operations & Technology, Stimulation Company, Calgary**

**DEEPA for deep matrix acidizing treatment delivered up to 250% oil production increases in mature vertical wells in Canada. Impressively, the wells showing greatest production improvements were on water flood, yet showed no increase in water cut. In fact in most cases the water cut actually fell. Overall, DEEPA performed much better than HCl treatments used in the same wells or other wells in the field.**

**The challenge**

The task was to increase oil production from mature vertical wells in the carbonate Swan Hills Formation. The operator believed the way forward was to increase the matrix permeability of the rock, and remediate any near wellbore damage.

**The solution**

DEEPA’s success all over the world is achieved by delivering organic acid deep into the rock matrix by employing in-situ acid generation. This increases matrix permeability and removes many types of near wellbore damage – critical contributors to production rates.

DEEPA matrix acidizing treatments provide excellent uniform acidizing throughout the zone and highly effective matrix stimulation. Some customers have had such success with the standard DEEPA dose rate that they have gone on to use larger volume DEEPA treatment on their vertical wells and are considering significantly larger treatments on horizontal wells.

## DEEPA for deep matrix acidizing in action

A DEEPA treatment was formulated, suitable for a bottom hole static temperature of 90-110°C, and selectively squeezed at up to 1m<sup>3</sup> per metre of perforations. It was shut in to allow uniform production of organic acid. The wells were then returned to production.

### The result

Production performance in the DEEPA treated wells was excellent with increases ranging between 200% and 250%. DEEPA's results were significantly more impressive than competitor treatments using the same volume of hydrochloric acid (HCl) which only increased production by 50%-60%.

Wells treated with DEEPA also avoided the sludges and emulsions typically experienced in this formation when treating wells with HCl.



## DEEPA's performance record at Swan Hills Formation

Well	Treatment volume	Pre-stimulation production	Production after treatment	Increase in oil production
A (50 years old)	1.0 m <sup>3</sup> /m of existing perforations	1.5 m <sup>3</sup> oil & 8 m <sup>3</sup> water/day average	8 m <sup>3</sup> oil & 12 m <sup>3</sup> water for the first month, followed by 8 months of 5 m <sup>3</sup> oil & 8 m <sup>3</sup> water/day average	<b>A sustained 230% increase</b>
B	1.0 m <sup>3</sup> /m of existing perforations	1 m <sup>3</sup> oil & 1 m <sup>3</sup> water/day average	5 m <sup>3</sup> oil & 2 m <sup>3</sup> water for the first few weeks, followed by 6 months of 3 m <sup>3</sup> oil & 1 m <sup>3</sup> water/day average	<b>A sustained 200% increase</b>
C	0.72 m <sup>3</sup> /m of existing perforations	1.5 m <sup>3</sup> oil and 7.5 m <sup>3</sup> water/day average	5.5 m <sup>3</sup> oil and 6.5 m <sup>3</sup> water/day average for first 5 months	<b>A sustained 250% increase</b>

Similar DEEPA deep matrix acidizing treatments are being carried out on other wells in the same field and in other carbonate formations in Canada.

### Get in touch

Cleansorb has a team of DEEPA specialists to advise you on the best strategy for your circumstances. Please e-mail [contact@cleansorb.com](mailto:contact@cleansorb.com) for more information.