

CO₂ Re-Stimulation in the Michigan Basin: A Second Chance for the Prairie Du Chien, James T. Edwards, BJ Services Co., Dunbar, WV 25064, james_edwards@bjservices.com; and J.W. Crafton, Performance Sciences, Evergreen, CO 80437, jcrafton@performancesciences.com

The Michigan Basin is viewed by many as only having mature reservoirs with limited availability for new treatment designs. The latest re-stimulation program using CO₂ might give rise to opportunity of enhanced production in Michigan as well as the benefit for new completions.

Simulation treatment designs in the Prairie Du Chien (AKA PDC) over the past two decades since initial drilling have been marked by vast differences in natural gas productions numbers from wells within the same field. Re-stimulation treatments have included cross-linked fluid or nitrogen foam that have provided mixed results in terms of their success rate. Problems such as excessive surface treating pressure, limited downhole sand concentration, early screen outs, and water retention have been seen in the aforementioned stimulations. Many existing wells within established PDC fields have declining production numbers despite reasonable reservoir pressure still present.

The advantages of the CO₂ treatment design marked with increased fluid recovery capabilities by gas assist along with the hydrostatic advantages will be expanded upon. Treatment design details with pressure response along with production results from the first set of wells will be included.

This presentation will expand re-stimulation ideas as well as spur a desire for further investigation into the use of CO₂ in the Prairie Du Chien. It also hopes to change the perception of the Michigan Basin to that of a still viable and rediscovered source of natural gas in the ever tightening world supply.