

**Society of Petroleum Engineers  
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**Fracturing Without a Drop of Water - Lessons Learned Fracturing With LPG**

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**Abstract**

The practice of hydraulic fracturing has come under increased scrutiny in recent years for a number of reasons. One technology developed to address the technical inefficiencies of fracturing also answered many of the environmental concerns. In 2008, fracturing with gelled LPG as an alternative to water was introduced to the industry to enhance well performance. LPG offered a non-damaging fluid which originally came from the reservoir itself. Due to its favorable viscosity, miscible, surface tension, and phase behavior properties, longer effective fracture lengths and fluid recoveries approaching 100% were envisioned. Furthermore, it eliminated the use of water and the related water handling costs and long term disposal issues.

Today this technology/service is no longer available to the industry as the sole provider has left the market. This presentation will review the hypothesis of why LPG is an ideal fracturing fluid and share historical successes, failures, and lessons learned along with ongoing efforts to advance the next generation of light hydrocarbon fracturing. Ideally members will take away a greater appreciation of the successes associated with LPG fracturing and an understanding that the business failure was not due to the technology but to its misunderstanding and misapplications.

**Biography**

Robert is a petroleum engineer with 32 years of industry experience. He currently serves as the CTO for eCorp International. He co-invented the LPG Fracturing technology and worked at GasFrac as their CTO. He spent 22 ½ years at Chevron working in the areas of fracturing, artificial lift, completions, and well operations. He holds 5 patents and has additional patents pending. He previously served on the BOD of the Petroleum Technology Transfer Council, the US DOE Oil Shale Ad Hoc Group, ICoTA US Chapter President, and the advisory board of the University of Utah Institute for Clean and Secure Energy.