

SPE Lunch and Learn Abstract:

Managed Pressure Flowback in Unconventional Reservoirs: A Permian Case Study

Flowback programs on multi-stage horizontal wells (MSHW) in unconventional reservoirs are too often completed without a sufficient understanding of how the flowback could affect the long term performance of the well. High initial production is a common performance indicator that drives flowback practices to focus primarily on flowing back the well as fast as possible to get it on production. Operators are becoming more aware of how extremely sensitive unconventional completions and formations can be to aggressive flowback practices used to increase initial production. To date, collection and analysis of the data gathered during flowbacks has been infrequent and without much understanding of its inherent value. If data is collected, it is usually low quality and unreliable.

This discussion will focus the specific type of damage that can be created by aggressive flowback practices and mitigated by effectively monitoring and controlling initial rates and pressures. A Permian Basin case study is examined to demonstrate the benefits of optimizing choke schedules to effectively manage drawdown pressure to reduce damage to fractures and increase cumulative production. Specialized diagnostic plots are used to demonstrate the consequences that conventional flowback practices can have on well deliverability. Additionally, the added value in utilizing high resolution surface pressure recorders and how that data can be used to optimize choke schedules is also shown.

Darryl Tompkins Bio:

Darryl Tompkins has over 10 years of oil and gas industry experience concentrating most of his time on unconventional reservoir engineering. He is currently the Reservoir Evaluations Technical Advisor for the SPIDR Team within Halliburton's Testing and Subsea Product Service Line where he works on advancing testing technology globally in conventional and unconventional reservoirs. Prior to his current role Darryl worked in Production Enhancement for Halliburton in Canada performing hydraulic fracturing. He has previously held positions in Operations Engineering for mature fields and Reservoir Engineering for gas storage. He is a registered Professional Engineer in the Province of Ontario, Canada and holds a B.Sc. in Mechanical Engineering from the University of Windsor, Canada.