

Optimization in U.S. Shale Plays: Emerging New Techniques and Technologies

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Abstract

In times of oil price instability and low gas prices, the capital-intensive technologies that made shale plays possible must be re-evaluated to see if there are ways to reconceptualize them to make the plays economic. This presentation emphasizes reservoir optimization, and the application of new technologies and techniques to reduce costs and to improve recoverability of hydrocarbons to improve ultimate recoverable reserves. It specifically addresses issues of decline curves, stranded pay between laterals, stacked pay logistics, and pad drilling. In addition, the presentation looks at sweet spot optimization, effective investments, hydraulic fracturing, and geomechanics. Finally, it presents an overview of some of the emerging best practices in North American shale plays, and the results of new optimization-focused technologies and techniques, including refracturing, whipstocking, geochemistry, and integrated imaging.