Extracting Formation Properties from Hydraulically Induced Microseisms, Seismic Attributes, and Impedance Inversion

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Abstract

Compositional and structural characteristics of unconventional plays can be analyzed at different scales for a more successful development. Regional rock property analysis can be used to identify hydrocarbon-bearing zones using seismic inversion, and neural networks. Localized frequency-cy-broadened seismic data can increase accuracy when delineating target zones. Small scale induced microseisms analysis can provide a priori knowledge of fracture network development through seismic attributes and rock physics volumes. Proper integration of unconventional data from different scales can significantly reduce costs, high-grade assets, and improve overall chances of successful play development.