

## **Production Focused Seismic: Applying 3D Seismic to Well Productivity Analysis and Completion Optimization**

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### **Abstract**

Seismic is often considered a luxury or a “nice-to-have” item. For its cost, customers often feel that they do not get full value or “bang-for-the buck”. In Unconventional plays, which are driven by fast and dense drilling and completion engineering, this can be especially true. However, with advanced processing and analysis, a few innovative work-flows, and some creative-thinking, 3D Seismic and Microseismic can be applied to everyday well performance and asset development issues. In this talk we will present examples from the Eagle Ford and Wolfcamp in which 3D Seismic and Microseismic provide practical insights into:

- the affect of faults and fractures on well performance
- the cumulative effect of the subtle interplay of static and dynamic reservoir characteristics
- understanding and predicting unwanted water production
- the effective vertical placement of horizontal wells
- the placement and spacing of wells and frac stages

It is important for geoscientists to remember that while important reservoir characteristics (both static and dynamic) can be derived from seismic and microseismic attributes, this information and understanding is only truly useful if it can be integrated and calibrated with engineering and production data. In fact, to be truly practical, seismic and microseismic must provide predictive information, in a 3D earth model, which can then be proactively applied by engineers to their development plans, well plans, and completion designs.