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## Sub-Regional Pore Pressure Prediction in Deep Water Turbidite Setting

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### Summary

Pore pressure prediction (PPP) plays an important role in regional exploration, well design and drilling wells in safe and effective manner. In this paper, we present sub-regional pore pressure prediction study, that includes a novel approach of integrating pressure cells with regional geology, to help predict sub-regional pressure seals, understand overpressure mechanisms and provide an integrated PPP model for sub-regional exploration and appraisal as part of integrated DRHI study for a deepwater turbidite field.

Pore pressure prediction for this sub-regional project was conducted in three phases. In the first phase, well data modeling was performed to analyze overpressure generation mechanisms, derive and interpret log-based overpressure profiles at key wells, and generate a regional velocity ( $V_{pshale}$ ) vs. vertical effective stress (VES) transform to be used for seismic based pore pressure prediction. In the second phase, a sub-regional pressure cell framework was developed as an alternative to the seismic based pore pressure model and for QC purposes. In the third phase, 3D pore pressure volumes were estimated from seismic velocities using a  $V_{pshale}$  vs. VES transform derived from log based analysis. The seismic velocity-based pore pressure model was QC'ed and integrated with pressure cell model results providing a robust pressure model to be used for sub-regional exploration and appraisal studies.

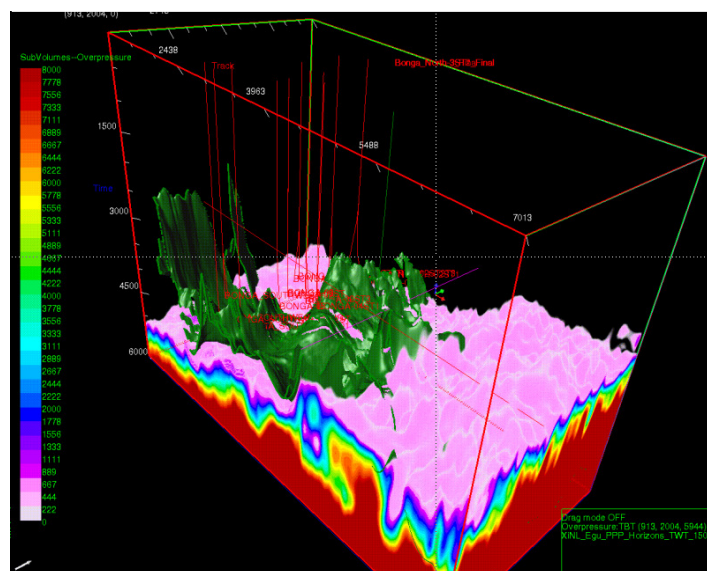


Figure: A sub-regional 3D overpressure volume generated from conditioned seismic velocities