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## **Borehole Stability and Sand Production Risk Assessment for Horizontal Openhole Completions, White Rose Project**

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The feasibility of openhole (barefoot) horizontal well completions in Avalon Formation sandstones has been investigated in a laboratory and geomechanical modeling study. This presentation will begin by describing some of the advantages and risks associated with openhole horizontal completions in the offshore. High quality rock mechanics testing and detailed log analysis were undertaken to characterize on the in-situ stresses and rock properties in the setting. The risk of openhole collapse and sand production under drawdown conditions was assessed using the 2D elastoplastic model in STABView™ and a numerical geomechanical simulator. STABView is a state-of-the-art well planning software package, developed by Advanced Geotechnology for assessing borehole stability and lost circulation risks while drilling, completing, stimulating or producing.

A variety of loading conditions that develop throughout the life of a horizontal well have been assessed to predict the volumes of sand that will be produced. Sensitivities to well orientation, rock mechanical properties, reservoir depletion, and formation damage due to drilled solids invasion are described. Recommendations for future risk assessments of this type and the design of openhole completions will be discussed.

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