

Intro

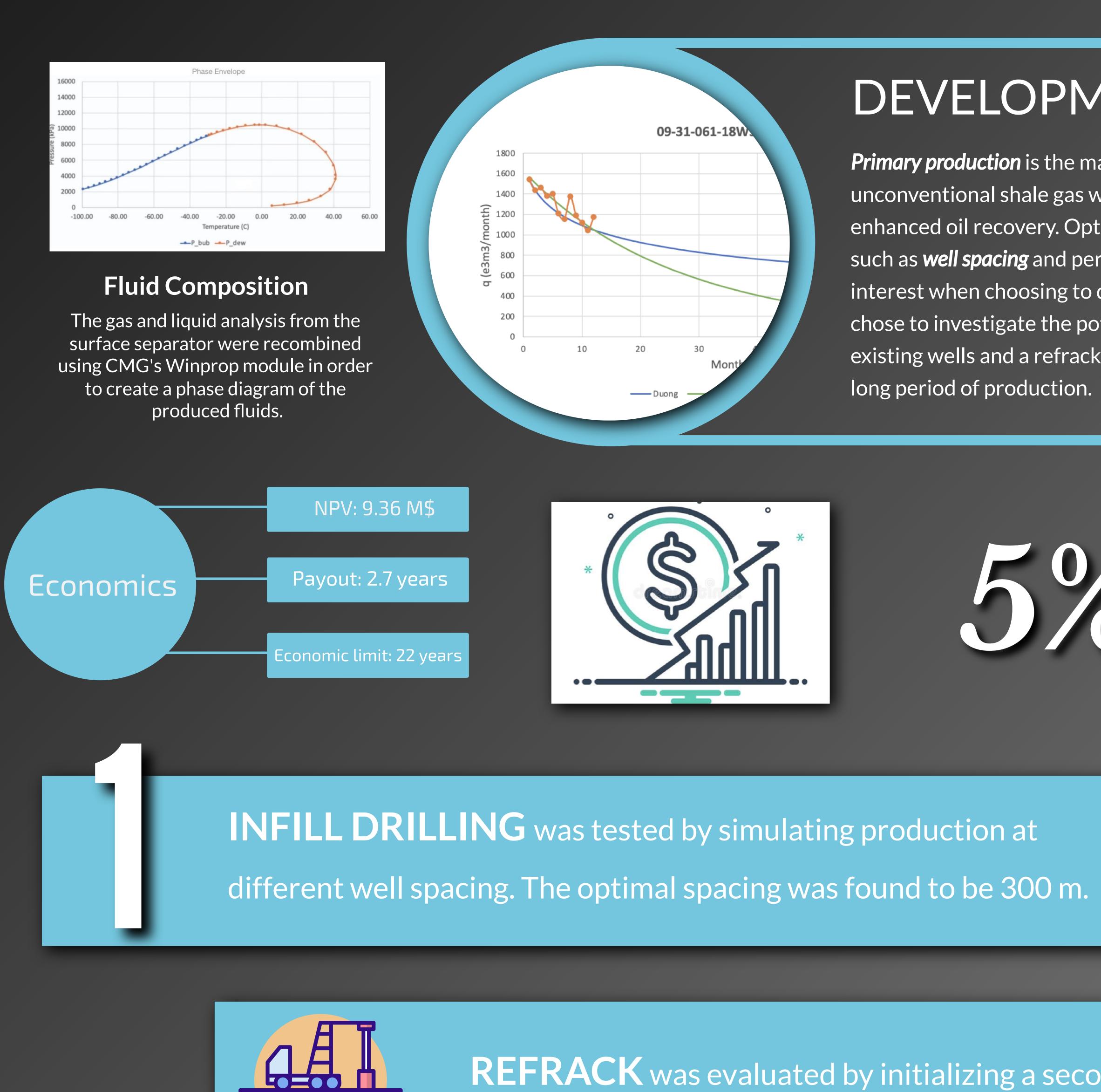
The 15-01 Pad operated by Chevron near Fox Creek producing from the Duvernay was analyzed using wireline logs from the nearest 7 vertical wells.

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SINULATION

A reservoir simulation was generated using CMG to build a model of the seven horizontal wells intersecting the formation. The 14 identified stratigraphic layers were characterized by using vertically isotropic permeability and porosity maps. A total of 70 maps were created using kriging interpolation and used as inputs along with the fluid composition, theoretical fracture model, and completions design to initialize the reservoir model.

A history match was done using the gas and condensate production with an attempt to quantify the bottomhole pressures using a *pressure traverse calculation* in order to have an extra fitting parameter. Once the model was history matched we were able to test out various development strategies to simulate how future production would look like.



REFRACK was evaluated by initializing a second fracture completions. This was shown to increase recovery factor but under uneconomical costs.

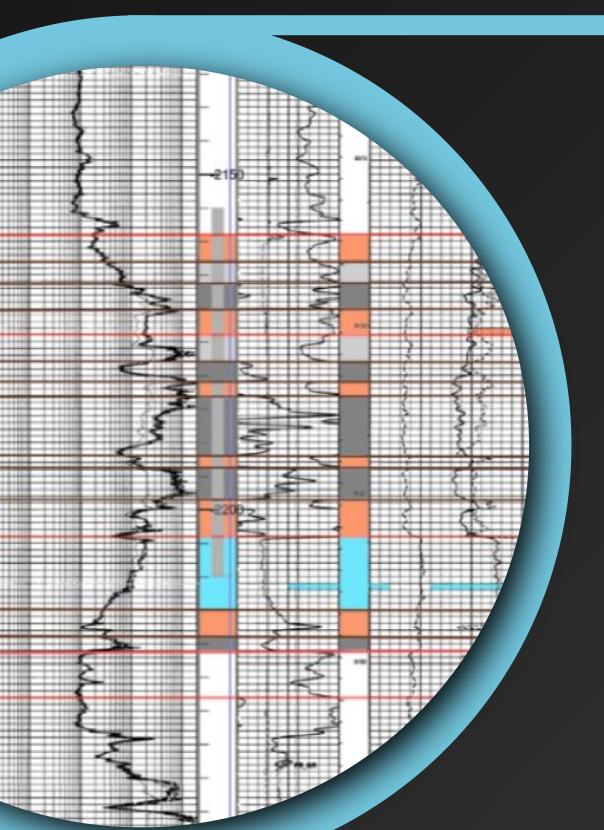






EVALUATION AND DEVELOPMENT OF THE **DUVERNAY FORMATION** Moosa Bakhtari

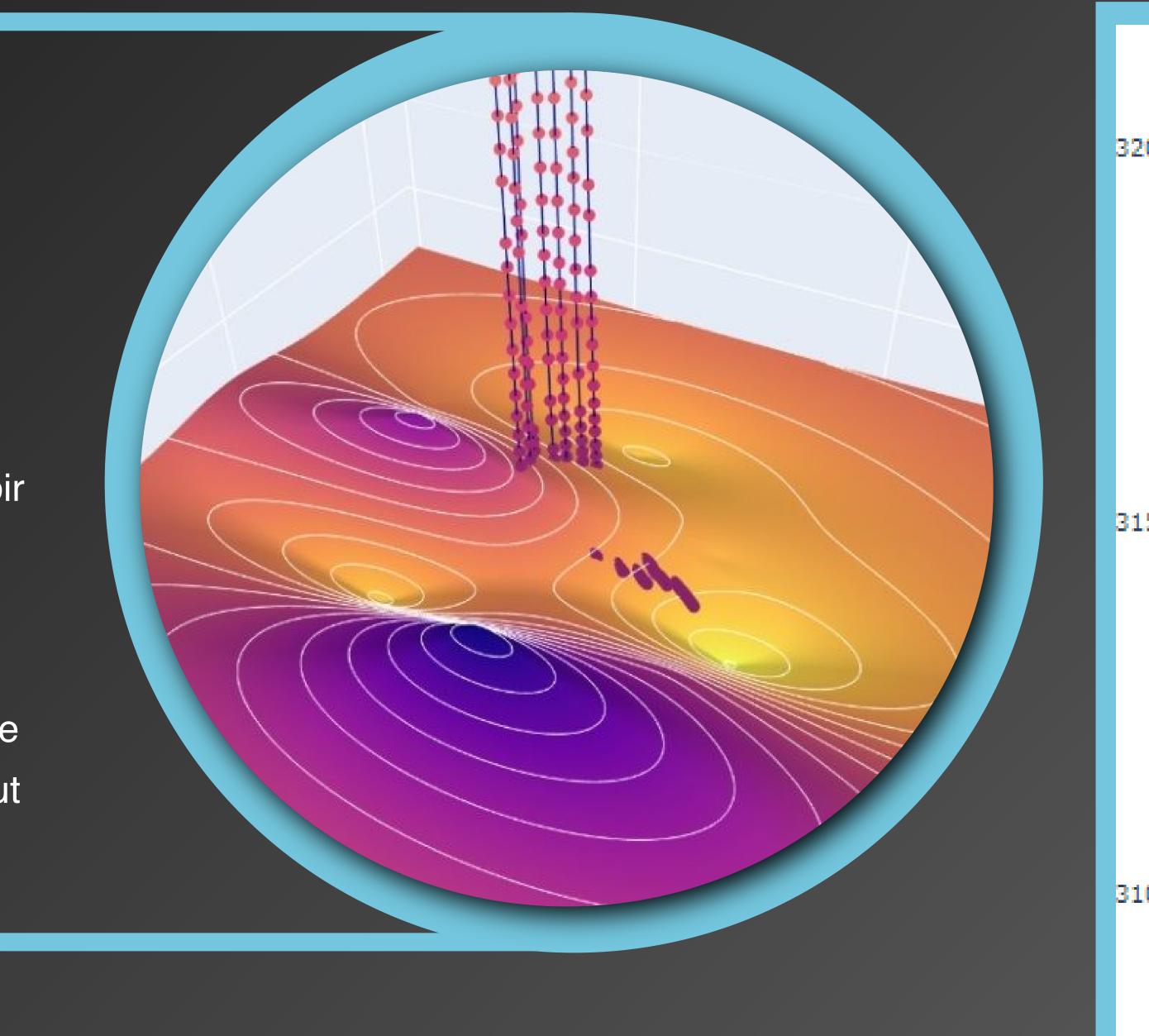
Michael Svoboda | Juan Garzon | Zongkai Xu |



GEOLOGY MODEL

- 14 geological layers were identified - 70 maps were generated using python - Porosity, Permeability, isopach, water saturation, formation tops

- Frack Model was created using **KDG** *method* for fracture characterization



DEVELOPMENTSTRATEGY

Primary production is the main development strategy for unconventional shale gas wells, and there are few options for enhanced oil recovery. Optimizing completions parameters such as well spacing and perforation intervals is of high interest when choosing to develop a new pad. Our group chose to investigate the potential for *infill drilling* between the existing wells and a refrack option to reopen fractures after a long period of production.



Primary recovery factor, being produced mostly from the induced fracture system, with a little contribution from desorption.

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