



## EXECUTIVE SUMMARY

Tight gas reservoirs, defined as those exhibiting subeconomic reservoir quality by normal production standards, are widespread throughout northeastern British Columbia. Although most commonly associated with the Deep Basin area, they occur also in the Foothills, and in the Plains north of the Peace River Block.

In this report, we describe tight gas reservoirs, production, and potential in fifteen distinct stratigraphic intervals. Large-scale production currently takes place from three major play areas:

- **Deep Basin** – stacked Mesozoic clastic reservoirs, each regionally extensive and gas-saturated, produce from isolated stratigraphic “sweet spots”, featuring conventional reservoir quality.
- **Foothills** – carbonate and clastic reservoirs in the deep Foothills at Bullmoose-Sukunka, and in the outer Foothills to the north, in the Beg-Jedney-Bubbles areas, produce prolifically where natural fractures enhance deliverability from tight- to moderate-quality rocks.
- **Northern Plains** – regionally-extensive Devonian carbonates are naturally fractured to a relatively minor degree, but produce economically with modern drilling and completion techniques.

Exploitation of tight gas reservoirs is far more advanced in the United States than it is in Canada. Case histories from analogue basins, particularly in Cretaceous strata of various U.S. Rocky Mountain Basins, are useful in developing exploitation strategies for tight gas reservoirs in B.C. There are two important exploration/exploitation strategies which can be pursued more systematically in B.C.:

- Pursuit of extremely thick basin-centered gas sandstones
- Detection and exploitation of natural fracture “sweet spots” in settings with little structural deformation

Application of cutting-edge drilling and completions technologies is also critical to successfully exploiting tight gas reservoirs. Key strategies that are being used now, but which offer additional upside, include:

- Directional and horizontal drilling
- Underbalanced drilling
- Advanced fracture stimulation.