

# Potential for Northeast B.C. Unconventional Gas

**Supply Potential of British Columbia Conventional  
Gas, Horn River Shale, and Montney Tight Gas**

# NORTHEAST B.C. GAS OUTLOOK - A Multi-Client Study

## Background

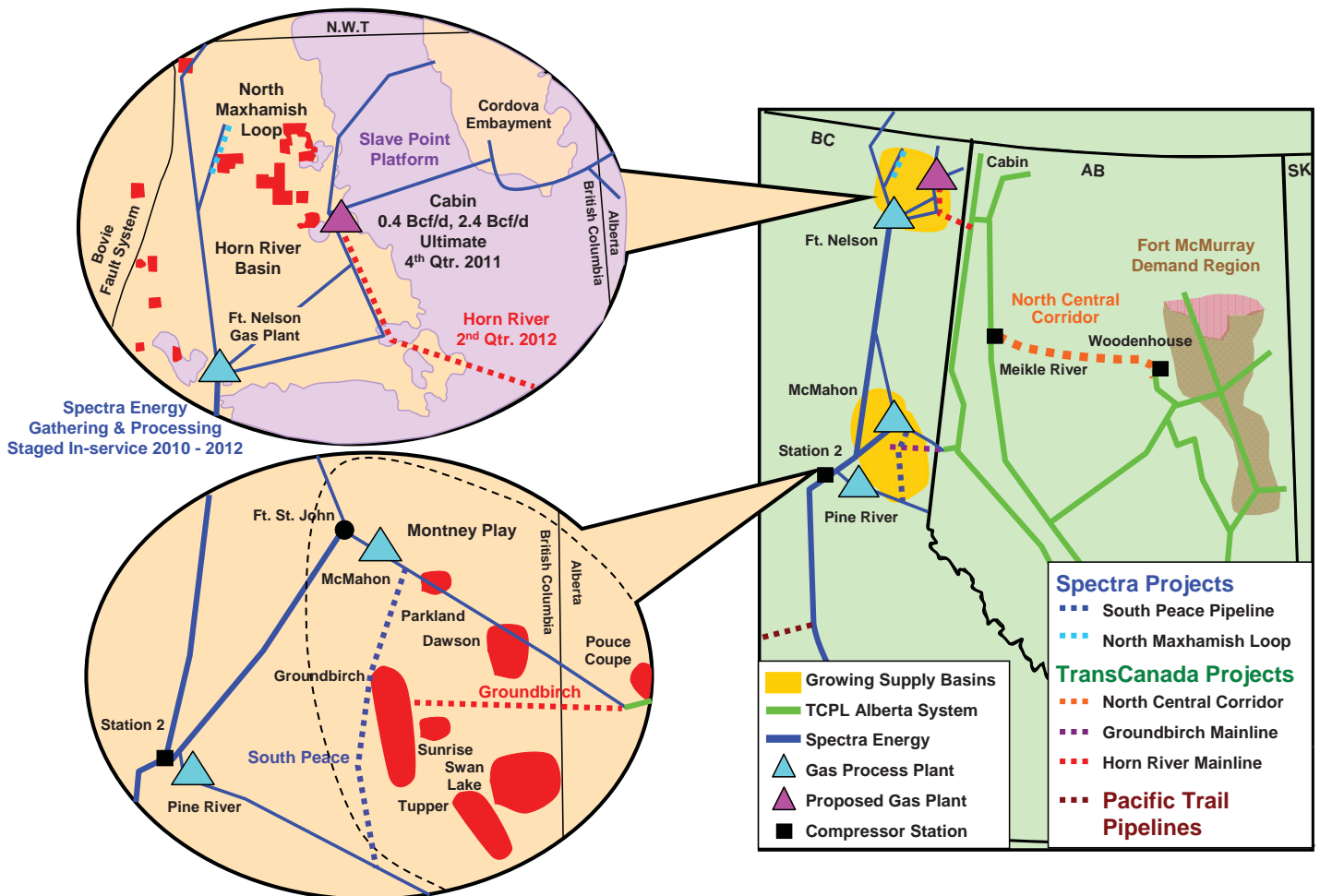
Northeast B.C. gas is often considered a high risk / high reward play. The risk to producers is not whether gas can be recovered (it can), rather that the play needs significant investment before producers can be confident of commercial success.

## Study Objectives

This new Ziff Energy study helps prospective producers and investors better understand the fundamental economic, commercial, and regulatory issues driving Northeast BC's unconventional gas plays, including:

- how much unconventional gas is there in Northeast BC?
- what are the full cycle costs of gas production?
- where will the best markets be for the new gas?
- what are the infrastructure requirements to process and transport BC gas?
- what are the regulatory issues impacting development of Northeast BC gas.

## Northeast BC Gas Pipelines & Facilities



# Study Highlights:

- complete analysis and forecast of B.C. gas supply to 2035
- full cycle economics and production forecast for Horn River Shale and Montney plays
- demand analysis for: eastern and western gas flows, oil sands, and Kitimat LNG
- pipeline and processing facility implications
- impact of Alaska, Mackenzie Delta, and Ruby pipeline projects
- examination of provincial policy, aboriginal relations, and environmental concerns.

# Supply Potential / Cost

Ziff Energy will provide forward expectations for British Columbia gas drilling, initial gas well productivities, gas well declines, and gas production.

Full cycle gas cost economics of British Columbia gas will be illustrated using Ziff Energy’s proprietary databases and modeling expertise.

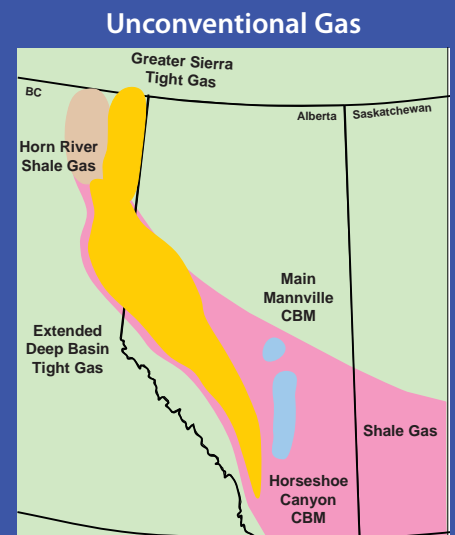
# Benefits of the Study:

1. provides area specific Unconventional Gas information
2. insight on the pace of Northeast BC development, timing, and opportunities
3. clear and concise strategy which will provide a directional baseline for future activity.

## Alberta – British Columbia Gas Demand Requirements:

Importance of the Alberta Oil Sands as a source of pinpoint gas demand, potential for Nuclear power, and future residential and commercial market needs will be discussed and forecast.

- Kitimat
- Pipelines and Infrastructure
- Tolls Forecast
- Environmental and Socio-Economic Factors
- Forecast Pipeline Flows
- Ruby Pipeline
- Northern Gas as a Factor
- Expansion of TCPL TBO



## Timetable

- Execution February / March to June 2010
- Delivery End of June
- Client Debriefings to be scheduled

## Project Team



**W.P. (Bill) Gwozd, P.Eng. – Vice President, Gas Services**, has over three decades of natural gas experience. He oversees the North American Gas Strategies Retainer Service, which focuses on forecast assessments, semi-annual client debriefings, and leads our expert witness testimony service offerings. Customized consulting assignments include long-term natural gas price outlooks, pipeline acquisitions, regional changes in gas markets, North American gas supply and demand forecasts, testimony, gas storage development, and transportation. Mr. Gwozd is a frequent contributor to TV, radio, and print media.



**Edward Kallio, B.A. – Director, Gas Consulting**, has over a quarter century of gas industry experience in trading, marketing, portfolio management, supply, forecasting and policy analysis in the private and public sectors. His experience includes analysis of pipeline rate applications, economic analysis of major domestic and cross-border gas transactions and contracts, and negotiation of storage, transportation and supply arrangements. He has traded, and managed production and supply portfolios throughout North America.



**Simon Mauger, P.Geol. – Director, Gas Services**, has three decades of experience in the upstream oil and gas industry as an exploration and development geologist in the Western Canadian Sedimentary Basin and other locations. Mr. Mauger planned, evaluated and economically modeled gas resources for a leading international exploration and production company; prepared and optimized long term gas supply plans for growing gas markets; and developed the regional exploration component of the North American integrated natural gas strategy.



**Cameron Gingrich, B.Sc., B.A. – Manager, Gas Services**, has a decade of natural gas experience at Ziff Energy. He is primarily responsible for analytical support and in-depth customized data analysis, trending, and modeling for the Gas Services team. His efforts toward the North American Gas Strategies Retainer Service, multi-client studies, and custom consulting projects include: analysis of pipeline tolls, gas supply/storage load duration modeling, gas demand outlooks, and gas price modeling.

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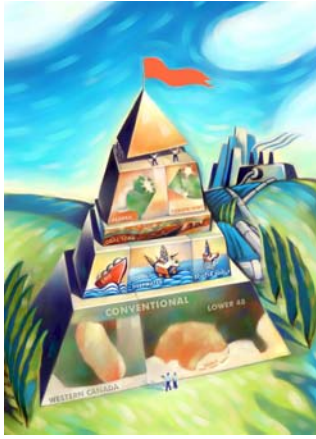
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## A Multi-Client Study

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**July 2010**

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# POTENTIAL FOR NORTHEAST B.C. UNCONVENTIONAL GAS

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