



# MUSKWA GEOCHEMICAL STUDY 1 - Hamburg



## DATA AVAILABLE NOW

CBM Solutions and Trican Well Service Ltd. are pleased to announce the availability of our Muskwa geochemical Study 1 (Hamburg).

### General:

Continuing north from the successful Duvernay Study areas (released in summer and fall 2010), **Muskwa Study 1 : HAMBURG** helps the client explore the geochemistry of the Muskwa Formation north of the Peace River Arch. Excellent results from the richly organic Muskwa Shales are available with this study. Detailed mapping of the kerogen maturity and bulk mineralogy can be obtained from this data set.

157 wells have been analyzed using cuttings to provide a geochemical data set for the explorer of the Hamburg/Chinchaga area. In addition, 1 core has also been sampled to show the downcore variation within the Muskwa Formation. Note: Three upcoming landsales in this area occur on March 9, 23 and April 6, 2011. A total of 400 Source Rock Analyses (SRA - TOC, maturity and organic matter typing) and 400 mineralogical analyses by X-ray diffraction will be included in the study. The focus of the study is the light hydrocarbon potential of the Muskwa shales. A minimum of one sample per well location has been tested. All data included is **NEW** and has been recently generated by CBM Solutions. Samples have been hand-picked by CBM Solutions geologists from archived cuttings and core. Quality assessment made on each analysis by CBM Solutions Technical Advisors. Two hard copy reports and hard copy maps of Muskwa thickness, TOC and Tmax variation are included.

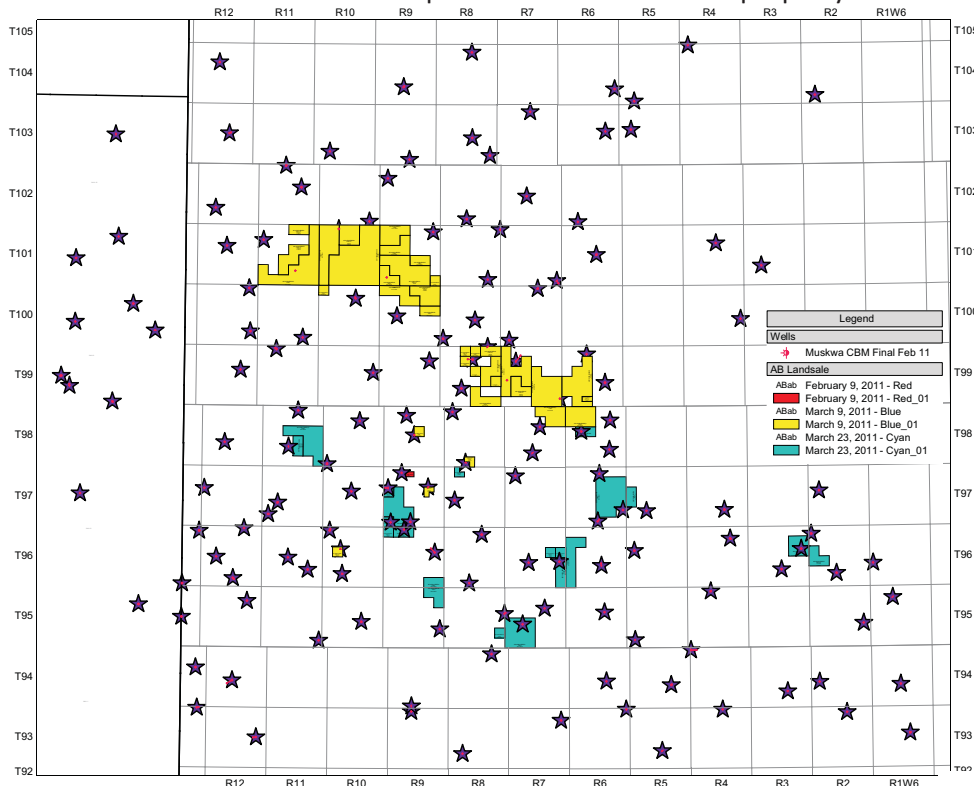
### Terms:

Only six (6)subscriptions will be sold prior to March 9, 2011. **Price is \$52,500 + GST.**  
Unlimited number of subscriptions will be available March 10, 2011. **Price is \$41,500 + GST.**  
**\*\*IF DESIRED, ALL PURCHASES CAN BE MADE THROUGH A LAND BROKER\*\***

### Conditions:

A confidentiality agreement will be required to restrict transfer of data to outside parties. Data remains the property of Trican Well Services Ltd.

**Contact:**  
[ron.brezovski@cbmsol.com](mailto:ron.brezovski@cbmsol.com)  
403-510-8154  
or  
[brent.nassichuk@cbmsol.com](mailto:brent.nassichuk@cbmsol.com)  
403-703-1908



## Deliverables:

**The combined analyses represent a value of over \$220,000**

***SRA analyses: why? Where is the Muskwa relative to NGL's and the oil window? Do these shales have the potential capability to produce and store light hydrocarbons or dry gas? Which lands have the greatest potential based on the geochemistry? Where is the total organic carbon distributed? In what amount?***

SRA analyses provides:

Tmax (thermal maturity) - indicates the level of maturity with respect to the oil window

TOC (Total Organic Carbon) - weight percent of organic carbon

Kerogen Type - crossplots of hydrogen and oxygen indices indicate the presence of Type I, II or III kerogen

***XRD Analyses: Why? What is the mineralogy of the Muskwa? How is the quartz distributed and what is the relationship to TOC? What is the relationship between the TOC and the bulk mineralogy? Does this provide a high-grading of the landsale blocks?***

XRD analysis and calculated quantitative Rietveld data:

Bulk Mineralogy - indicates the total mineral assemblage

Quantitative Mineralogy - Rietveld analysis is used to determine relative weight percent of each mineral

Mineral Trends - indicates relationships between various minerals and the relationships between organic carbon and various minerals

***Sorption capacity & TOGIP modeling: Why? What are the hydrocarbon resources per section? What variables are important?***

Unpublished Bustin et. al. adsorption isotherms from the Muskwa have been integrated into this study to determine gas capacities.

Various runs modeling total gas including, free, sorbed and solution gas variables using CBM Solutions proprietary analytical software are included to evaluate the light hydrocarbon potential. Variables included are ranges in porosity, reservoir temperature & pressure, gas compositions, and sorption capacity.

## ***Final Data***

Final data reporting includes Excel tables of all data and an interpreted report displaying trends in maturity, organic content, mineralogy and TOGIP (total original gas in place). Maps include an isopach of the Muskwa Formation as well as geographic distribution and variation of TOC and Tmax.

## ***Data Releases:***

First release on February 17, 2011 will include approximately 300 maturity and TOC (SRA) data points.

Second release on February 22, 2011

Final release on March 3, 2011 will include all data include SRA, XRD, TOGIP modelling and maps