



## **The Utica – An Emerging Canadian Shale Gas Play**

By Richard (Rick) Mills

As a general rule, the most successful man in life is the man who has the best information

Shale gas is natural gas that has been generated and trapped within the natural pores and fractures of shale. This natural gas has been accumulating because of the breakdown of high levels of organic carbon or kerogen within the shale. The right temperature, pressure and a lot of time – over millions of years - is needed to produce gas. Shale plays can hold enormous amounts of gas and once production has been stabilized gas wells from shales tend to have low decline rates and long production lives.

Recent developments in both horizontal drilling techniques and the multi-stage hydraulic fracturing of horizontal wells have turned shale plays from being marginal or un-economic to being the “darling” of the industry and the future of gas development in North America.

Vertical wells are first drilled to better understand the potential resource areas specific characteristics. After the best areas are found for development horizontal wells are drilled and “fraced” for commercial production.

By drilling horizontal wells, where the drill bit is steered along a horizontal trajectory, the well bore is exposed to as much of the shale and potential gas reservoir as possible. Hydraulic fracturing involves sending fluid down the well at high pressure and blowing it out into the reservoir rock to create cracks and channels through which the gas can flow to the well bore. These two technologies, used in tandem, can create many kilometers of contact area for natural gas to flow into a well. Even though these wells can cost more than twice as much as a vertical well, initial production rates can be many times that of a conventional well giving the operator payback in a very short period of time.

Multi stage fracing video:

<http://www.oerb.com/Default.aspx?tabid=242>

Rex Tillerson, Exxon's chief executive officer said, “Natural gas is expected to be the fastest growing of the major energy sources; it's going to grow at a substantially faster rate than oil or coal.” Exxon Mobil Corp is buying XTO Energy Inc for \$30 billion in stock to get its shale gas assets in the US.

French oil company Total SA announced on January 3, 2010 that they will pay \$800-million in cash for a 25% stake in Chesapeake's Barnett Shale assets. The French company will also pay an additional \$1.45 billion to help fund 60% of Chesapeake's

share of drilling and completion expenses. In a recent Bloomberg article regarding the Total SA / Chesapeake Energy Corp. deal Chesapeake stated “We have agreed to discuss with Total an Eagle Ford joint venture as well as joint ventures covering several Canadian natural gas shale plays in which Total has shown interest.” Remember Total pursued a potentially similar plan when they first became involved in Canada’s oilsands. They bought 50% of Conoco’s Surmont pilot project, then, after they had acquired the necessary expertise to operate an oilsands show, they bought Deer Creek Energy and the Joslyn oilsands lease.

While there is no current large-scale commercial production of Canadian shale gas there are significant shale plays – the Montney & Horn River in Western Canada, the Utica in Quebec and the Horton Bluff Shale in New Brunswick and Nova Scotia – under development.

### **The Utica**

The Utica is Canada’s newest shale play and has relatively few players. The Utica shale gas play covers an area of approximately 5,000 square kilometers and runs along Quebec Canada’s St. Lawrence River shoreline in the St. Lawrence Lowlands. The heart of the Utica Shale trend in Quebec is massive, bounded by the Yamaska Fault to the north-east, which roughly follows the St. Lawrence river through this area, and the Logans Line fault system to the south-west. The plays Fairway extends along the St. Lawrence from roughly Montreal to Quebec City covering an area of over 1.1 million acres or roughly 2,400 square miles. Drilling depths vary from 800 to 2,500 meters with shale thickness ranging between 75 and 300 meters.

Industry experts peg total recoverable resources from 5 to 25 trillion cubic feet (TCF). Forest Oil believes there is upwards of 4 TCF of potential recoverable resources on just their lands - average gas-in-place is 93 billion cubic feet (BCF) per section, a recovery factor of 15% (this number could grow with advancements in drilling and fracturing technology) would yield 14 BCF of recoverable gas per square mile.

Current proved Canadian natural gas reserves are 58 TCF – so the Utica play could hold between 10 – 30% of Canada’s gas reserves. Obviously the Utica Shale gas play has the potential to develop into something very special.

But it’s not yet clear that the Utica is an economic gas play. Fortunately major players like Forest Oil Corporation (FST-NYSE) and Talisman Energy Inc. (TLMT – NYSE) are now committing large amounts of money to find out if it is. Market confidence - in regards to the commercial viability of this play - could increase dramatically in the coming months. This author believes the work commitment by the major players in the area warrants investors paying closer attention to this still young, early days gas play - the prize at stake in Quebec’s St. Lawrence Lowlands is enormous - if Utica shale gas is proven commercially viable then the Utica has the potential to be one of the largest resource plays in Canada.

The Utica shale gas play has a lot going for it:

- Shallow depth of the shale
- Proven fracturability
- High production rates - up to 1 million cubic feet a day (mmcf/d) in vertical tests
- Rock properties are comparable to other more established shale plays - right mineralogy, porosity and maturity
- High-quality natural gas with minimal impurities - 88% to 97% methane, less than one per cent inert gases and 1,027-1,136 British Thermal Unit (Btu) content. Gas is pipeline ready – no H<sub>2</sub>S, no CO<sub>2</sub>, no nitrogen extraction.
- Infrastructure in place with nearby access to major pipelines
- Premium natural gas pricing to NYMEX helps make the economics compelling. New York City Gate pricing typically averages US\$1 above NYMEX Henry Hub, making the pricing environment attractive for producers.
- Low initial acreage costs with low carrying costs.
- Quebec Canada is one of the best areas in the world to explore for and develop a resource.

In addition to all the above listed advantages consider: rising gas prices, constantly improving technology and constantly growing shale gas expertise.

Consider also that Utica gas is within 400 miles of the New York City Market – unused export capacity to the US on TransCanada Corp's pipeline system is 200 – 400 mmcf a day, and Quebec uses 500 billion cubic feet per year of natural gas, all of it coming from Alberta.

The best leverage for investors could lie with those junior oil and gas companies who have amassed large exploration permits in the St Lawrence Lowlands right in the heart of the Utica fairway.

**Altai Resources Inc.** ATI – TSX.v 100% owner of the Sorel-Trois Rivières natural gas property, 114,344 hectares (282,544 acres). Altai also retains a 15% gross royalty in the adjoining permit of 13,290 hectares (32,840 acres) held by Talisman Energy Canada.

**Canadian Quantum Energy Corp.** CQM – TSX.v has interests in four key permits comprising approximately 170,000 gross acres / 35,000 net acres in the heart of the identified Utica's Fairway. CQM participated with its' partners, Talisman Energy and Questerre Energy, in the recent, very significant Gentilly discovery well and is participating in the drilling of the Gentilly #2HZ well. CQM also has 50% partnership and joint operations with Junex on the 54,600 acre Nicolet Permit, also in the heart of the Utica Fairway.

In November of 2009 the company obtained shareholder and regulatory approval to effect a 4 x 1 forward split of its shares which resulted in there now being 24,581,776 shares being issued and outstanding, 57% insider ownership.

Netherland, Sewell and Associates Inc., a world renowned Texas based engineering firm, are preparing an engineering report, due the end of January 2010, that will cover Canadian Quantum's 50% interest in the Nicolet Permit. Netherland Sewell was previously commissioned to do an engineering report on Questerre's Utica Shale properties.

**Epsilon Energy Ltd.** EPS – TSX Has an elective participating interest of up to 25% in a portion of Gastem, Inc.'s (TSXV: GMR) leasehold acreage in the St. Lawrence Lowlands (covering Utica shale and Trenton-Black River targets). EPS went non-consent on the first two exploratory wells drilled within the Yamaska project but has decided to participate in the next well.

**Gastem Inc.** GMR – TSX.v Holds exploration, storage permits and rights to 3,135 km<sup>2</sup> in the St. Lawrence Lowlands, the Gaspé Peninsula and the Magdalen Islands in Quebec as well as rights and interests in New York State and in Appalachia.

**Junex Inc.** JNX – TSX.v Holds rights for more than 6 million acres under exploration permits located in the Appalachian Basins in Quebec. These rights are shared out between the St-Lawrence Lowlands and Gaspésie areas and includes some licenses in which Junex only holds a royalty on the future production of hydrocarbons. Junex holds more than 1.1 million net acres in the Utica region.

**Petrolympic Ltd.** PCQ-TSX.v Holdings in the St. Lawrence Lowlands include a 30% interest in 673,021 acres (272,362 hectares). This is through a joint venture with Ressource & Energie Squatex Inc.

**Questerre Energy Corp.** QEC – TSX Over 1 million gross acres (0.34 million net) in the Utica/Lorraine shale gas play.

## **Conclusion**

There is a lot of work being done today, in the Utica, to answer the question - are the all-in costs of drilling, completing and fracing horizontal wells going to be economic/will the upcoming results support further development of this play? If upcoming results indicate robust economics then ladies and gentlemen we just might have one of the largest resource plays in Canada happening in the most perfectly situated place for one to happen.

Quebec's Utica shale gas play should be on investors radar screens for all the right reasons, is it on yours?

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