

Squeezing oil from stones

There are vast reserves of oil trapped within Alberta's rockbed - the trick is getting it out

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Globe and Mail

August 22, 2007

CALGARY -- OSUM Oil Sands Corp. believes it might have the answer to one of the oil patch's most perplexing problems - extracting the billions of barrels of crude trapped in Alberta's limestone deposits.

To date, energy companies have largely concentrated on producing crude from Alberta's oil sands, where tar-like bitumen is extracted from sandstone and dirt using either mining or steam-assisted extraction. While the province's limestone deposits - or carbonates - also hold vast amounts of crude, the reserves are too deep for mining and are frequently perceived as being incompatible with steam-assisted extraction, preventing easy recovery.

Nevertheless, the uncertainty over extraction hasn't stopped some enterprising firms from snapping up leases in regions such as Alberta's Grosmont formation. Last year, Royal Dutch Shell PLC paid \$465-million for 10 parcels of land in the carbonate region, by far the biggest outlay for staking any exploration claim anywhere in the oil sands, while Husky Energy Inc. also holds substantial acreage in the area.

The only other company to own holdings in the region is the far smaller, privately held OSUM, which used to offer technological and service solutions to other firms before deciding to acquire a slice of the oil sands itself, paying just over \$20-million last August for leases that could hold 840 million barrels of recoverable crude.

Not only does the Calgary-based company believe the land can support a project ultimately capable of producing 75,000 barrels of crude a day, it believes the carbonates could be the way forward for Canada's oil patch.

"The carbonates are a stupendous resource, and when they are cracked at a commercial level, that's a material step-change for the industry," OSUM chief operating officer Peter Putnam said in a recent interview.

"Shell didn't spend all that money in the region to get hold of a big science experiment - they're looking for a major project."

So far, Shell and Husky have been tightlipped about exactly how they will produce crude from the carbonates, although Husky has tentatively outlined plans for a 200,000-barrel-a-day project at its Saleski holdings. Industry observers have speculated that the companies could use electrical wires to heat the limestone resource, although such a process would likely be expensive and need a large energy source.

While OSUM isn't giving away its technical secrets either, it says the answer to extracting the crude is far less esoteric than the industry seems to believe, with experiments carried out in Alberta in the 1970s already proving that crude can be extracted from the limestone reservoirs with thermal recovery methods.

"Producing barrels out of the carbonates is not an issue, and we actually think these reservoirs are better than those in Fort McMurray," Mr. Putnam said.

"Most people who work in the oil sands only know about sand - they don't understand these reservoirs and they don't have experience with them."

In conjunction with privately held partner Laricina Energy, OSUM is now pressing ahead with plans for a 10,000-b/d pilot project at Saleski -

recently securing \$56-million of financing - and expects to file a regulatory application next year.

As well as the carbonate plans, OSUM is also moving forward another project that appears technically challenging - extracting crude from under Marie Lake, in eastern Alberta.

That project will use so-called shaft and tunnel technology to reach the region's crude, with wells drilled from below the reservoir, rather than from above.

While planning for the 30,000-b/d project is in an early stage, OSUM believes the shaft and tunnel system, which requires less drilling and less steam, will lead to substantial cost savings and a smaller environmental footprint.

Alberta regulators gave approval to OSUM to conduct seismic testing at the site earlier this month, despite objections from residents concerned about how the project might affect Marie Lake.

OSUM chief executive officer Richard Todd said seismic testing carried out on lakes elsewhere in Alberta hadn't caused any problems, and that the company was determined to address any community concerns and carry out its program with sensitivity.

"Hopefully, at the end the residents will applaud our approach," he said. "I think people will come to see the whole package as a step forward [from conventional oil sands operations]."