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Commercial SAGD Project To Burn Bitumen Emulsion, Says Quadrise

By Pat Roche

A thermal oil project scheduled for start-up in 2008 will heat its steam boilers by burning bitumen emulsion rather than natural gas.

The operator of the planned 10,000-bbl-a-day steam-assisted gravity drainage (SAGD) project, which is expandable to 40,000 bbls a day, is the first company so far to sign on the dotted line for commercial application of the new fuel, said **Alfred Fischer**, chief executive of **Quadrise Canada Fuel Systems Inc.**

Quadrise manufactures, supplies and operates a bitumen emulsion fuel system called MSAR, which stands for Multiphase Superfine Atomized Residue. MSAR consists of very fine oil droplets suspended in water. The emulsion fuel (about 30% water and 70% bitumen and specialized chemicals) is manufactured on site.

The smallest MSAR unit available -- which can make 3,000 bbls a day of the fuel -- will be installed at the SAGD project sometime in 2008, said Fischer.

He said the project -- to be built "right in the heart of" Alberta's SAGD country -- will probably begin steam injection in late 2008.

He declined to identify the operator of the planned SAGD project, saying the oil company will make its own announcement within a few months.

Fischer made the comments during an interview and in a presentation at an **IQPC** oilsands conference last week in Calgary.

The capital cost of a 3,000-bbl-a-day MSAR fuel mill is only about \$3 million -- a miniscule part of commercial SAGD projects' capital budgets, which typically start in the hundreds of millions of dollars.

One big difference between burning natural gas and an oil-based fuel is the latter requires flue gas desulphurization.

Burning bitumen produces sulphur dioxide, so bitumen burners must have scrubbers to meet emissions standards.

Fischer said the capital cost of the flue gas treatment is in the \$70 million to \$100 million range, but it would pay for itself many times over because the cost of burning produced bitumen would be a fraction of the cost of buying natural gas.

Faced with spiraling natural gas costs in recent years, Alberta's oilsands producers have been looking for cheaper alternatives.

Last year, four companies -- **Deer Creek Energy Limited** (now part of **Total SA**), **Petro-Canada**, **ConocoPhillips Canada** and **Paramount Resources Ltd.** -- tested MSAR on the site of Total's Joslyn project in northeastern Alberta.

Bitumen was trucked in from Dover, also in northeastern Alberta, because oil treatment facilities hadn't yet been installed at the Joslyn project, which at the time was still in pilot phase.

Meanwhile, Quadrise is currently working with "a couple of companies" to refit existing commercial-scale boilers to burn the bitumen emulsion fuel, Fischer said.

Quadrise hopes this SAGD application -- involving roughly 200-mmBtu-an-hour boilers -- will proceed next summer.

Fischer said equipment has been ordered for this commercial-scale pilot test, but installation hasn't begun and no formal announcement will be made until the legal agreements have been finalized, which is expected to take roughly two or three months.

He declined to reveal the size of the SAGD project as this would narrow down the SAGD operators' identities, which won't be announced until final legal agreements have been signed.

On a separate topic, Fischer said there are two ways MSAR could help a bitumen producer eliminate the need for diluent.

One indirect role would be if a bitumen producer installed a very rudimentary partial upgrader on site, Quadrise's process could use the asphaltenes byproduct as fuel -- thereby producing cheap energy and disposing of what would otherwise be a waste product.

He said another possibility would be to run the entire bitumen stream through Quadrise's plant to convert it to MSAR. Once converted to MSAR, the tiny oil droplets remain suspended in water. From a viscosity standpoint, this emulsion would be pipelineable as long as it didn't freeze. However, it would require a dedicated pipeline because oil pipeline operators don't want water in their systems.

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