



## Government Relations

### **ENERGY - Saskatchewan may be sitting on oil bonanza; Estimates peg latest find at up to 100 billion barrels of light crude**

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<http://www.uofaweb.ualberta.ca/govrel/news.cfm?story=70478>

Saskatchewan could be sitting on 25 billion to 100 billion barrels of sweet, light crude oil in the Bakken formation in the southeast part of the province, according to industry and government estimates.

By comparison, the heavy oil resource in west-central Saskatchewan, which is considered to have the greatest potential for future production, is estimated at 25 billion barrels of oil in place.

The huge potential of the Bakken play has industry and government officials gushing with superlatives.

"We're excited about it," said Ed Dancsok of Saskatchewan Energy and Resources. "It's probably the biggest oil find in Saskatchewan since the 1950s."

"The Bakken is the hottest play in Western Canada," said Trent Stangl, manager of marketing and investor relations for Crescent Point Energy Trust of Calgary, one of the top three players in the Bakken in Saskatchewan.

Gregg Smith, vice-president of Canadian operations for Petrobank Energy and Resources, another Calgary company that has a large land position in southeastern Sask., goes further. "It's fair to say, the Bakken play is the hottest play in North America," he said.

What has government and industry observers so excited is the sheer magnitude of the Bakken formation, which is found in the Williston Basin underlying much of North Dakota, eastern Montana, southeastern Saskatchewan and southwestern Manitoba.

The Bakken is a geological formation of siltstone and sandstone about 300 metres below the Mississippian formation, where most Saskatchewan light oil production comes from. Bakken wells tend to be highly productive (200 barrels a day or more), producing sweet, light crude oil with 41 degree gravity, basically the highest grade of crude oil you can find anywhere.

While relatively new in Canada, Bakken exploration has been underway in the U.S. since 2000 and has increased dramatically in recent years. According to the U.S. Geological Survey, the Bakken formation could

contain a mind-boggling 413 billion barrels of oil in place.

Exactly how much of that Bakken oil in place is in Sask. is a matter of some conjecture.

Fifteen years ago, the then-department of energy and mines estimated there were roughly 100 billion barrels of oil in place in the Bakken formation throughout the entire Williston Basin.

Dancsok, who co-authored the 1991 study, said the prevailing view in the geoscience community at the time was that "the potential of the Bakken was immense, but the price of oil in 1991 was not such that people wanted to risk (exploration and development dollars).'

More recently, a North Dakota geologist reported that the Bakken formation could contain 200 billion barrels in the Williston Basin. Compared with the USGS report estimating more than 400 billion barrels in the Bakken, the earlier estimates of 100 billion to 200 billion barrels are seen as conservative.

Dancsok estimated roughly 25 per cent of the Williston Basin, which covers some 518,000 square kilometres, is located in Saskatchewan. Based on that simple arithmetic, the estimate of Bakken oil in the province could range from 25 billion barrels to 100 billion barrels of oil in place.

But how much of the Bakken oil in place is recoverable using today's technology? Based on conventional production methods, perhaps only 10 per cent. But horizontal drilling, combined with a new production technique, known as hydraulic fracturing, has increased recovery rates by another five per cent.

"What's cracked the nut on this play is the new fracturing system that they're using,' Cody Kwong, a geologist with First Energy Capital in Calgary, said. In layman's terms, hydraulic fracturing involves injecting a slurry of water, chemicals and sand into the formation, breaking or fracturing the reservoir and increasing the permeability of the reservoir. "You get further access to the reservoir by getting these fractures that give you more pathways to the wellbore.'

Smith said Petrobank, which pioneered the use of hydraulic fracturing in the Bakken play in Sask., has seen production from its Bakken wells increase to 300 barrels per day from 200 barrels per day, in some cases. "We pioneered a different way to 'frac' our Bakken wells that really resulted in less water being produced and more oil being produced.'

While current technology will be able to extract about 15 per cent of the oil in place, Smith believes new techniques will be able to increase recovery rates well beyond that.

"The Bakken is going to be the gift that keeps on giving. There's going to be a lot of brilliant minds working on the Bakken play, trying to figure out how do you get more of that oil out.'