



## TAR SANDS SHOWDOWN – THE BASICS

- Alberta's tar sands contains between 1.7 and 2.5 trillion barrels of oil. Of this, 185-200 billion barrels are considered recoverable based on current technologies. With further advances in technology, the Canadian Association of Petroleum Producers estimates that 315 billion barrels could be recovered.
- The tar sands are located in three major regions, the largest of which is the Athabasca, followed by Cold Lake and the Peace River. Development is already starting across the border in Saskatchewan where further deposits lie.
- There are also large tar sands deposits located in the Orinoco oil belt in Venezuela, and smaller deposits in the United States, the Middle East, and Africa.
- There are over 3200 tar sands lease agreements in place right now in Alberta, covering an area larger than Vancouver Island. An area double the size of New Brunswick could eventually be leased (an area of almost 150,000 km<sup>2</sup>)
- Currently, over almost three million barrels of oil (bpd) are produced from the tar sands every day, with a goal of 5.3 million bpd by 2020. Currently, close to 60% of oil produced from the tar sands is exported to the United States.
- Through the Security and Prosperity Partnership, The United States had said that they hoped to import up to 6 million bpd of tar sands oil, and expects to be able to import 3.1 million bpd by 2015. Whether this will change under the leadership of Barack Obama remains to be seen.
- Tar sands oil is found in the ground in the form of bitumen; which is a high hydrocarbon that is solid at normal temperatures and mixed in with sand, clay and water. Bitumen usually makes up 10-12% of the mixture.
- Bitumen is found just below the surface where it can be extracted using giant open pit mining techniques, and far below the surface which requires high pressure steam injection (in-situ) technology to reach it.
- Surface mining requires the trees and muskeg to be stripped away along the top layers of the earth to expose the bitumen beneath it. Two tonnes of matter is removed for every one barrel of oil produced. This process destroys local ecosystems, leaving gaping open pit mines 75 meters deep littering the physical locale.
- In-situ extraction is the technique needed to reach 90% of bitumen underground. It requires injecting high pressure steam underground to increase its viscosity and separate the oil from the sand. The melted oil is then piped to the surface. Heating the water to produce steam requires large quantities of natural gas.
- Tar Sands development causes air to become polluted with toxic chemicals such as nitrogen oxides and sulphur dioxide, and toxic chemicals are leaked into the surrounding water system.
- Previously, tar sands oil was not considered financially viable because of extraction costs. Tar sands development now costs as little as \$25 dollars a barrel when infrastructure is completed. It is \$62 a barrel if the facility is not completed. With high oil prices in the past few years the number of new projects have risen dramatically. Still, with the downturn in the economy, many developments have been delayed or cancelled.
- Now is not the time to back off of the tar sands industry. Canada is seen as a political stability region compared with many oil rich areas in the world. As a result, pressure must persist in both Canada and the United States to prevent further development.

For more information, or to get involved visit <http://www.tarsandswatch.org>

<http://www.oilsandswatch.org>, <http://www.oilsandstruth.org>, <http://www.canadians.org/energy>, <http://www.ienearth.org>

## Excerpt from author Tony Clarke's Book "Tar Sands Showdown"



...The end of cheap whale oil marked the beginning of the age of black gold. From its humble beginning as fuel for lamps, oil became the energy source of the twentieth century. Although coal produced more total energy over the century, and generated a huge share for heat and power, it was oil that fuelled the new modes of transportation — the automobile, railways, ships and airlines — that shaped much of the century. These developments, in turn, led to a myriad of new oil-based products, from plastics to synthetic rubber,

which further reinforced the demand for oil and its increasing value as a form of energy. In short, oil became the lifeblood of industrial civilization and remains the black gold of the twenty-first century.

Although US historians generally claim that it was Edwin L. Drake who drilled the first oil well, on August 27, 1859, in the town of Titusville, Pennsylvania, the beginning of commercial oil production is essentially a Canadian story. A year earlier, in the summer of 1858, a carriage maker by the name of James Miller Williams drilled an oil well fifteen metres down into the oil gum beds near Black Creek in Lambton County, southwestern Ontario. Williams's well marked the start of the first black-gold rush, which lasted three decades. The area surrounding Black Creek (later renamed Oil Springs) was stripped of its wetlands and forests to make way for some 1,600 oil-drilling rigs. Dozens of oil companies (including Imperial Oil) and refineries sprang up during this period, thereby giving birth to Canada's oil and gas industry. Over the next 120 years, as the demand for oil grew, other major oil deposits were discovered and tapped, including at Leduc, near Edmonton, and at Weyburn in southern Saskatchewan in 1947, and finally, towards the end of the discovery of major deposits of conventional oil on dry land in Canada, offshore discoveries were made at Sable Island in Nova Scotia in 1970 and at Hibernia in Newfoundland in 1979.

Now, 150 years later, Canada is at the centre of another major black-gold rush, this time in the Athabasca tar sands of Alberta. However, this is not what has become known over the past century and a half as conventional oil production, i.e., pumping crude oil out of the ground. Much of the earth's oil that lies close to the surface has already been used up and discoveries of new oil that is cheaply accessible have become fewer and fewer. Instead, the oil industry is now having to turn its attention more and more to the harder-to-get-at oil deposits that lie deeper within the earth's crust, in deposits that are more difficult to extract and forms that require more processing, such as in the Alberta tar sands, or under the sea. This unconventional oil production requires new technologies and is more expensive to produce. But the rapid rise in world oil prices in recent years (more than doubling between June 2007 and June 2008) has made the development of the Alberta tar sands a very lucrative business...