

*"This is not oil drilling. It's not even mining. It is terrestrial skinning. Vast, vivid landscapes are being gutted, left monochromatic gray."* —NAOMI KLEIN

## Into the Muskeg Swamps of Northern Alberta: A Brief Ideological History of the Tar Sands

For those who are familiar with pictures of mountaintop removal sites, imagine a mine that looks the same only not constrained by the topography. Tar sands mines in Canada stretch from horizon to horizon leaving the land a veritable moonscape specked with the worlds largest earth-moving trucks and shovels, dots of yellow compared to the totality of the mine itself, meandering slowly about picking at the muck.



*Northern Rockies Rising Tide & supporters protest Conoco Shipments, Missoula MT, March 10, 2011*

BY NICKLE

Herman Kahn, Born 1922 in the United States, was a preeminent futurist of the later half of 20th century. Futurology is a not-so-well-known corner in the arena of probability where scientists and academics attempt to systematically predict the future through a combination of basic assumptions regarding human nature and current political dramas. Herman Kahn was a major player in this field in the 60s and 70s.

At the time, Kahn was known for taking an unsavory tack in the field, delving into the realm of the unthinkable. For instance, post-nuclear war scenarios and human reactions took the form of a logistical game for Kahn. In such a circumstance, he posited, nuclear fallout would just be one of life's general unpleasanties, the much feared rise in birth defects would be negligible since they wouldn't happen to everybody, and radioactive food could be fed to the elderly because they would die anyway before the onset of cancer. Because of his willingness to engage with the distasteful, Kahn was admired by nuclear arms disarmament activists, such as Bertrand Russell, for this descriptive analysis of what the future might hold, and hated by others who thought that positing the consequences of nuclear war and fallout made the possibility that much more likely.

However, there is a certain kind of shortsightedness in Kahn's line of reasoning; one specific element which also appears, over and over again, in US

policy decisions regarding foreign affairs, the economy, and, specifically, the future of energy development. It was his visions for the future which were always ones of a certain kind of unending hopefulness, of overcoming, of the indefatigable nature of the human race to plow through whatever problem arose. Man would never die because he would always adapt, create, and thrive. However, Khan believed we would do this regardless of how bad we may make the circumstances for living, and that therefore consequences of decisions could in some ways be ideologically circumvented. For Kahn, fears regarding possible human and environmental consequences of actions, when held up against short term gain, became negligible. Today, this ideology seems to be a bedrock for resource development, especially oil development, worldwide. It doesn't matter what we do today, what irreparable damage we commit, there will always be a way around it in the future.

Kahn took a note from another visionary, this time from the oil industry. M. King Hubbert worked for Shell and was the first to predict the peak and eventual decline of US oil production in the 1950s. Hubberts work later became the basis for a number of peak-oil scenarios. In the 1950s Texas oil rodeo, any thought of wells running dry was downright laughable. Hubbert was almost run offstage, but by the early 1970s it was hard to argue anything other than the demise of US preeminence in the field of oil resource production. Texas Oil had peaked and

the US was currently importing almost one third of its oil from OPEC countries.

In 1973, the US was recoiling from the oil embargo presented by OPEC which led to high prices, oil shortages, and lines of cars stretching for blocks bleating at each other for their turn at the pump. Thus, ideologically armed, in 1973 Kahn flew to Montreal to propose that Canada delve into the tar sands.

The Alberta Tar Sands already held a strip mine and upgrader located on the banks of the Athabaska River, erected by oil visionary J. Howard Pew (of the future Pew foundation). Pew's enterprise had been losing money for decades by mining and refining the most expensive oil in the world. The gamble that Pew had made, and that Kahn was urging the Canadian and US Governments to take in a larger degree, was based on the notion that as future oil reserves would run out, the harder-to-refine and more expensive forms of petroleum would take center stage, revamping the world energy economy and placing Canada and the US back in a central position. Kahn's predictions regarding the future of the industry would prove correct. The only thing off was his timing. The future boom in the tar sands wouldn't happen for another 30 years, but when it finally hit, it would prove to be something that even Khan couldn't have imagined.

### **You say oil, we say tar**

Tar Sands are a thick, black, mucky mixture of water, clay, sand, and hydrocarbons, hard as a hockey puck, and good for patching a canoe. The eventual product, after rolling up the forest, exhuming the earth, mixing it with water, heating it, skimming it, upgrading it, mixing it again (this time with light crude), piping it, refining it and finally shipping it, is oil.

Well, kind of. Oil is generally conceived of as having come from light or heavy crude. Think Texas oil fields slooshing black rain and striking it rich. Technically speaking, tar sands are bitumen. Bitumen is, basically, the lowest grade oil product on the world shelf. It takes huge amounts of energy to refine to something that is relatively useful. Refining bitumen means huge amounts of water consumed, natural gas burned, and a carbon footprint that can be seen from space, along with the tailings ponds, strip mines, roads, and clearcuts through the northeast quarter of Alberta.

Even though most of the focus regarding tar sands mining is in Canada, there are tar sand deposits else-



*Delicate Arch, Arches National Park, Utah*

where in the world; Hugo Chavez, boasting the second largest pocket. Utah, Russia, Congo, and Madagascar all contain smaller but significant deposits. However, barrel for barrel, the individual holdings of both Canada and Venezuela contain more oil than Saudi or Iraqi reserves. In Canada, the tar sands cover an area the size of the UK; Venezuela holds deposits about a third of

that size. In all, tar sands represent about two thirds of the remaining oil reserves in the world.

Tar sands mining around the world belongs to the same burgeoning, bottom of the barrel, once-this-is-gone-there'll-be-nothing-left field of the energy industry as fracking, extremely deep sea drilling, and polar pursuits. The term "unconventional oils" hardly begins to describe them. For the tar sands, the process of separating the bitumen from the sand and clay can only be described as brute force. In general, the ratio of energy input to barrel output in normal light crude operations is about 1:100, meaning the energy contained in one barrel of oil will produce 100 new barrels during extraction and processing. For tar sands, that ratio drops to about 1:3.

In Canada, water is used in such extreme quantities that tar sands production accounts for about 65 percent of water withdrawals from the Athabaska River. This water is then heated by huge amounts of natural gas, mixed with the tar sands and other chemicals, and shaken about to separate the oil for skimming. The leftover water is then returned to tailings ponds that boast the largest earthen dams in the world. That condensed oil/water/chemical slurry then leaks from the ponds back into the Athabaska River at about a rate of one billion gallons of toxic water per year, resulting in unfathomable rates of arsenic in food supplies and rare forms of cancer in downriver First Nations communities. The water leakage from the tailings ponds could go up to about 6.6 billion gallons per year if future projections regarding development are true.

In other parts of the world, the risks associated with tar sands mining are compounded by the usually devastating relationship between oil giants and European banks to developing countries. In Madagascar, for instance, the multinational French company Total S.A., one of the six "supermajor" oil powers in the world, has been accused of overthrowing the democratically elected government because of its lack of support for tar sands operations. In the Congo, the Italian oil company Eni signed a deal in 2008 that combined both tar

Photo By Ashley Anderson

sands production and the largest palm oil project on the planet. The size of the project is 1790 km square (1,113 miles), and even though Eni claims no rainforest or areas of high biodiversity will fall within the proposed zone, privately their estimates show that 50 to 70 percent of the tar sands covers these highly sensitive areas.

### Boomtown or Bust

Much of the focus and the history of tar sands mining lies in Canada. In some ways, the history of Canada's tar sands can be seen as a road map that any area slated for future development would probably follow. Kahn's vision of the future of tar sands development included what he saw as a rush and boom of the resource, along with some unavoidable consequences. What Kahn's vision didn't contain was the level of destruction that mining the Alberta fields would cause and just how far the tentacles of big oil would reach.

Fort McMurray today is a boom town the likes of which only our great-grandparents would remember, and it comes with all the social hallmarks of such a place. Workers are flooding into Alberta from all corners of the world to work short stints in the oil fields. The thousands of homes needed to accept them can't be built quickly enough, many are flown in and out from not so nearby cities.

Work camps, those bastions of company-paid "living quarters," spot the area surrounding Fort McMurray. Company officials have made a policy of keeping the accommodations poor, lonely, and boring in order to prevent workers from skipping work. The influx of immigrant workers means that companies can exploit cheaper labor while visiting workers wait the two years before receiving their landed immigrant status. Women working in the oil fields have an especially hard time, facing severe sexual harassment, lower wages, and issues with gouging landlords and domestic abuse.

Downstream, the consequences of the mines take on a different and more deadly tone. Canada's First Nations communities have been facing inflated rates of rare forms of cancer. Fish pulled from the river for food are often covered with cancerous sores and sometimes boast two mouths. Arsenic levels in moose meat were once claimed to have been 300 times the normal safe standard for human consumption. When the Alberta government got a hold of this data and conducted their own study, they found that levels were only 33 times the normal safe limit.

In 2007, Dr. John O'Connor, a community health provider in the First Nations community of Ft. Chipewyan, was accused of "causing undue alarm" when he drew the connection between rare cancers in the community and the leaking mines just to the north. Officials found O'Connor's conduct as a "whistleblower" unacceptable. His license was suspended, pending an

investigation by the Alberta College of Physicians and Surgeons, and even though three years later he did return to practicing medicine, the take home story is this: *where the mines and money go, all must follow lock-step, health concerns be damned.*

The reach of tar sands production in Canada defies conventional reason. Proposals on the table for a series of huge pipelines to be built carrying oil and natural gas makes the analogy to an octopus, both metaphorical and visual. Of major concern is the Northern Gateway pipeline to be built from Alberta to the British Columbia coast. Pumping tar sands to the coast and from there taking it south or west, would result in the lifting of a ten-year ban on oil shipping that was originally imposed because of the consequences of the Exxon Valdez spill. Leaking oil pipelines in the US would span the shallow Ogallala Aquifer, the largest in the world.

### A Vision for the Future

Today Alberta has a booming petroified economy. The Boreal forest is being scraped to it's core. The rivers are being poisoned and what is happening to First Nations peoples is tantamount to genocide. In many ways, it's all just beginning. In the last few years, permits for tar sands mines in Alberta have skyrocketed, to the extent that health and regulatory agencies don't have the resources to keep up and surrounding communities are being silenced.

There is a common assumption that rising oil prices will provide an incentive for cleaner development and that the industry will take care of itself somehow. In reality, the future looks a lot more pessimistic. In the end, the problem isn't so much the lack of oil in the world, but the abundance of the remaining dirty fuels; coal, gas, shale, tar sands, to name a few. Unless we change something big, we may continue to follow Kahn's trajectory toward an unthinkable future.



Locals protest first Conoco/Phillips Megaload shipment in Lewiston, Idaho

Photo by Northern Rockies EPI