



North Dakota's explosive Bakken oil: The story behind a troubling crude

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The massive columns of smoke in North Dakota this week turned the afternoon sky to midnight, and the ground shook with each blast.

In November, an explosion in rural Alabama sent a huge ball of fire 100 metres into the sky, and scorched the swampy earth around it.

And in July, emergency crews battled four days to extinguish the flames in Lac-Mégantic, Que. It would take longer for the dead to be counted.

Each of these accidents shared a key ingredient: Trains carrying hundreds of thousands of barrels of crude oil from North Dakota derailed on their way to refineries in Canada and the United States, and the cargo exploded in ways that no one had previously thought possible.

Until Lac-Mégantic, crude oil was known to be flammable. But no one – not government regulators or oil shippers – thought it was explosive.

Until Alabama, the Lac-Mégantic disaster was thought to have been a freak accident that would likely not reoccur.

And before Monday's fiery derailment of an oil train near Casselton, N.D., which caused the evacuation of nearly 3,000 people, the North Dakota government was commissioning a study that would show it was safe to move massive amounts of oil on 100-car trains. The report, when finished, would try to dispel the negative press the state's oil industry was getting since 47 people were killed in Lac-Mégantic.

With the practice of moving crude oil by rail now under scrutiny, North Dakota has a lot at stake. The state sits squarely atop one of the biggest oil booms North America has seen in recent memory. The Bakken formation, a layer of oil that lies beneath North Dakota and parts of Manitoba and Saskatchewan, is rich with crude.

Billions of dollars' worth of oil is now being pulled from the ground each year. There are jobs. Impoverished reservations now have money. They all have the oil to thank.

However, Bakken crude is not like other oil.

It's not the kind of crude most people associate with the movies or TV: the licorice-coloured bubblin' crude that seeped from the ground during the opening credits of *The Beverly Hillbillies*.

Before I ever set eyes on Bakken crude for the first time, I was warned it would look different.

Soon after the oil train explosion in Lac-Mégantic, I travelled to the heart of North Dakota's oil boom to see where the oil that erupted so violently came from.

After driving an hour and a half from Minot, N.D., into the barren prairie, I pulled a rental car to a stop at a plywood cabin, a makeshift office that had been hastily constructed to serve as a headquarters for one of the many oil companies flocking to the Bakken in search of profit. Pump jacks dotted the horizon in every direction, pulling oil from three kilometres beneath the earth.

A man in a white hard hat and steel-toed boots greeted me and, after a few pleasantries, ducked into another room. He returned carrying a Mason jar and placed it on the table. As far as crude oil goes, the stuff in the jar was fresh – right out of the ground.

If most oil looks like a pint of Guinness when it comes out of the earth, people say Bakken oil is more like Miller Lite. It's a joke people in these parts like to tell.

But it's true: the crude looks more like gasoline than it does oil. This is also where it gets its explosive properties.

Heavy oil, like the tarry bitumen mined in Northern Alberta, is filled with solids that must be refined out of the oil to make it usable. Bakken crude lives at the other end of the spectrum: it is so-called "light oil." It takes minimal refining, which is what makes it so attractive to oil companies. This stuff is as close to gasoline as you're going to get.

"Some guys around here," the man in the hard hat tells me. "Pour it directly in their trucks."

That sounds apocryphal. He insists it's true. I am reluctant to experiment with the rental car.

The man has asked that I not use his name or identify him in any way. Letting a reporter inside to see this oil could very well cost him his job. After all, Bakken oil is now at the heart of an international investigation, as regulators from Canada and the United States try to figure out whether the oil is safe to transport by rail. In the wake of the Lac-Mégantic explosions, Canada's Transportation Safety Board simply said the way the crude blew up was "unusual."

Dozens of samples of Bakken oil like this are now an exhibit in the multibillion-dollar lawsuits expected to flow from the Lac-Mégantic disaster.

On close examination, the oil has a chameleon-like quality.

Hold it up to the light and yellow-green hues emerge. In the shadows it appears dusty brown. Stick a finger in it, and it emerges orange.

The oil is many things to many people. Those in Lac-Mégantic know it as a killer. It is the crude that burned their town, killed their neighbours, and has seeped into the ground leaving dangerous residues such as benzene and other contaminants behind, that will threaten water, air quality and soil for years to come.

In North Dakota, Bakken crude means new life for a state that was in tatters a decade ago. Even in the immediate aftermath of the Lac-Mégantic disaster, locals fret about what will happen if the oil stops moving.

As recently as 2002, the state's population was in decline, unemployment was rising and vast tracts of land were being abandoned as the farming economy withered. Things were so dire that, in 2003, a geographer named Frank Popper proposed turning vast sections of North Dakota land back over to the buffalo, as a way to revive the bison herd.

The idea never caught on, but it showed how worthless much of North Dakota's rural real estate was. By 2006, railway traffic through the state dwindled to the point that local government began preparing to tear up track beds and replace them with bike paths.

Then everything changed for North Dakota. An oil boom happened. Suddenly, those same rail lines were needed to ship oil to market because pipelines were in short supply.

But with this week's train derailment in Casselton, N.D., has again changed the narrative.

The danger of moving Bakken crude by rail has now landed on North Dakota's doorstep. It is no longer a problem in far-off Quebec or Alabama.

Before handing the Mason jar of oil back to the man in the white hard hat, I held it up to my nose and took a breath. Seeing me do this, he joked: smells like gasoline, doesn't it?

It did. Which is why Bakken crude is now under closer investigation.

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