



# Enbridge's Tar Sands Pipeline Plan: All Pain and No Gain for Ontario

**Ontarians are being told that Enbridge Inc.'s plan to reverse the flow of oil through one of its pipelines that crosses the province will benefit them. But, the reality is that Enbridge's plan exposes them to greater risk from oil spills as tar sands oil flows through.**

This oil is like hot liquid sandpaper that damages pipelines. And it's another example of our environment and economy being turned over to powerful oil interests. In this case, so tar sands oil can eventually end up going through Quebec and New England for export.

The proposal is currently before the National Energy Board. But the decision will have a big impact on Ontario's energy future: more dirty energy, and the risk of oil spills and air pollution it brings, a higher dollar that will cost good jobs—plus the global warming pollution created by tar sands oil.

The good news is there are better, cleaner choices Ontario can make like renewable energy and efficiency, which create good jobs, fight global warming and clean our air.

But good decisions will be harder to make if more infrastructure is turned over to serve the tar sands, because the more dirty tar sands oil we use the fewer solutions we will embrace.

## The Plan to Pump Tar Sands Through Central Canada and New England



## About Trailbreaker

Enbridge's Ontario pipeline plan is part of a larger project, called Trailbreaker, which could eventually transport tar sands oil through some of the most important natural and cultural landscapes in central Canada and New England. It would reverse the direction of oil flowing through two major pipelines—Enbridge's Line 9 and the Portland/Montreal pipeline.

If powerful oil interests get their way, the pipelines wouldn't carry normal oil, but tar sands oil—the dirtiest oil on the planet—along an approximately 1,200km route. This route runs east through Ontario and Quebec, then down to the New England seacoast, finally ending in Casco Bay in Portland, Maine for export.

In August 2011, Enbridge asked for permission to reverse the direction of about one quarter of Line 9's length—from Sarnia, Ontario, to the Westover Oil Terminal, outside of Hamilton—a project they call "Line 9 Reversal Phase I". When challenged about the full scope of the plan, the company repeatedly insisted that it was a standalone project, not part of a larger scheme to get more tar sands oil to the Atlantic.

You might ask why call it phase one, then, if there are no future phases. And you'd be right to wonder.

On the eve of public hearings into phase one, Enbridge pulled a bait and switch by announcing plans to reverse Line 9 the rest of the way to Montreal, bringing tar sands oil into Quebec for the first time. Rather than face public scrutiny over the economic and environmental impacts of this bigger project, Enbridge opted to break it up into pieces.

## Ontario at risk from oil spills

Raw tar sands oil is thick and gooey, and needs to be mixed with lighter petroleum products like natural gas, benzene, toluene and xylene to be pushed through a pipeline. This mixture is usually called diluted bitumen. It also needs to be hot and pumped at high pressure to move. Getting raw tar sands oil through pipelines is like moving hot, liquid sandpaper that grinds and burns its way along, increasing the chance that weakened pipelines will rupture.

Raw tar sands oil creates a greater risk of oil spills because:

- It's acidic. It has organic acid concentrations up to 20 times higher than normal oil, and contains up to 10 times more sulfur.<sup>1</sup>
- It's hot. It creates friction, which raises the material's temperature and increases corrosion.<sup>2</sup> An accepted industry standard is that corrosion rates double with every 10-degree Celsius increase in temperature.<sup>3</sup>
- It's abrasive. The mixture includes abrasive materials like quartz and pyrite sand particles.<sup>4</sup>

- It's viscous. It is 40 to 70 times more viscous than North American conventional crude oil.<sup>5</sup> This high viscosity requires tar sands pipelines to operate at higher pressures than conventional pipelines.<sup>6</sup>

Older pipelines weren't built with raw tar sands oil in mind. In the U.S., the pipelines that have the longest history of transporting tar sands in North Dakota, Minnesota, Wisconsin and Michigan spilled almost three times as much crude oil per mile of pipeline between 2007 and 2010 compared to the U.S. national average.<sup>7</sup>

Line 9 was built in 1975, long before the boom in tar sands production. Enbridge originally claimed that a reversed Line 9 would carry light oil in documents filed with the National Energy Board<sup>8</sup>, then stated in the media that it would ship diluted bitumen or raw tar sands oil.<sup>9</sup> And because tar sands production is going up but Alberta's refining capacity is nearly maxed out, Line 9 is likely to increasingly see raw tar sands oil flowing through.

The people living along the pipeline route will have virtually no say, and possibly even no knowledge, of what's being pumped through their lands if Enbridge is given the green light. But their water and land could be at greater risk of an oil spill.

## **Tar sands oil spills are harder to clean up**

Not only are people living near Line 9 more at risk of oil spills from raw tar sands oil, but the damage can be more severe when a spill does happen. A tar sands oil spill is much more difficult to clean up, and the fallout is often more damaging to both the environment and human health than a normal oil spill. There are several reasons why:

- The lighter petroleum product used to dilute tar sands oil increases the risk that an oil spill will explode if it comes in contact with high heat, sparks, static electricity, or lightning.<sup>10</sup>
- Exposure to toxins used to dilute the tar sands like benzene, n-hexane, and polycyclic aromatic hydrocarbons can affect the human central nervous system.<sup>11</sup>
- If tar sands are spilled into a body of water, the lighter petroleum products used to dilute it can quickly evaporate, leaving the heavy raw tar sands to sink to the bottom.<sup>12</sup> So cleaning it up requires dredging the bottom of the water body, stirring up the toxic settlements that have landed there.

Enbridge itself knows how costly and hard to clean up these tar sands oil spills are.

On July 26, 2010, an Enbridge pipeline near Marshall, Michigan, burst open, spewing more than 3 million litres of raw tar sands oil from a large gash in a black pipe.<sup>13</sup> The spill started in an open field, but the oil eventually flowed into Talmadge Creek, then spread down a roughly 50km stretch of the Kalamazoo River and contaminated a lake.<sup>14</sup> Despite multiple alarms and warning signals, operators didn't shut down the pipeline until almost 12 hours after the spill began.<sup>15</sup> The Michigan governor called Enbridge's initial spill response "anemic."<sup>16</sup>

Shortly afterwards, people in the vicinity began reporting "strong, noxious odors

and associated health symptoms.”<sup>17</sup> According to a 2010 report by the Michigan Department of Community Health, in the weeks after the spill, health officials identified 145 patients who reported illness or symptoms associated with the leak.<sup>18</sup> A door-to-door survey of 550 people showed that 58 percent of those contacted suffered from adverse health effects, most commonly headaches, respiratory problems, and nausea.<sup>19</sup>

As well as these health problems, the local real estate market has been hurt. After the spill, Enbridge instituted a home buyout program for residents living directly along Talmadge Creek and the Kalamazoo River. It has purchased at least 130 homes, leading some residents to express concerns over how the spill itself and the resulting buyback program will affect real estate prices.<sup>20</sup>

Today, over 20 months later, the cleanup of what is the most costly oil spill in U.S. history continues. It is expected to cost at least \$725 million.<sup>21</sup> It is now clear that tar sands spills cost 18 times more per litre spilled to clean up as conventional oil.<sup>22</sup>

And it’s not the only spill Enbridge knows. Not by a long shot. According to the company’s own data, between 1999 and 2010 there were 804 spills that dumped 161,000 barrels of fossil fuels across its pipelines.<sup>23</sup>



**Above:** The ruptured section of Enbridge’s failed pipeline in Michigan, excavated following the July 2010 spill.

## Who’s cleaning up?

When an oil spill happens, speed counts. The longer a response takes, the higher the chance of people or ecosystems being hurt. The slow response was a major criticism of Enbridge during the Kalamazoo spill.<sup>24</sup>

But, at the same time Enbridge’s plan could expose Ontarians to an elevated risk of oil spills, the federal government is shutting the Toronto office tasked with responding to oil spill emergencies. If a spill happens, the closest federal emergency response workers will be in Quebec.<sup>25</sup> Enbridge considers its emergency response plan “confidential” and “proprietary”, meaning that the public has no opportunity to see if it’s any good.<sup>26</sup>

## Special places at risk

Line 9 spans Ontario, from Sarnia in the west to near Cornwall in east, crossing countless farms, communities and waterways. But areas directly near the pipeline aren't alone in being at risk. Oil moves, and once in rivers and streams, it can pollute the water for a long distance. Towns and farmland tens of kilometres away from the actual pipeline are not safe from the toxic oil.

Some of the special places that at risk in Ontario include:



E. Green

### THE GRAND RIVER

A designated Canadian Heritage River, the Grand River is recognized for its natural and cultural attributes of national stature and as home to more than 215 species designated at-risk or endangered species. One species under pressure from water pollution is the pugnose shiner, one of the rarest minnows in North America. It lives in bays in ponds and lakes, and in clear, slow-moving streams. Over the past 50 years the species has disappeared from two Ontario sites.<sup>27</sup> Line 9 crosses the Grand River near Cambridge, and any spill near here could put added pressure on populations already under threat.



Friends of the Greenbelt Foundation

### THE NIAGARA ESCARPMENT

The Niagara Escarpment is a ridge of fossil-rich sedimentary rock with geologic origins dating back 450 million years. The escarpment spans 725-kilometres, from Niagara to Tobermory. A mosaic of forests, fields, cliffs, streams, wetlands and historic sites, it has been designated a UNESCO World Biosphere Reserve.<sup>28</sup> Endangered species include the red-shouldered hawk and the Jefferson's salamander, which are most often seen in woodland ponds during spring breeding season.<sup>29</sup> Line 9 crosses the escarpment near Campbellsville.



V. Litvinov

### **ROUGE RIVER PARK**

The lower Rouge River is home to endangered species like the redbreasted dace. In addition to providing habitat for this rare minnow, Rouge River is home to the first urban national park. The pipeline crosses the Rouge watershed upstream from the park area, threatening delicate ecosystems, valued recreation areas and Lake Ontario.



Gene Wilburn

### **LAKE ONTARIO**

Lake Ontario is the last in the Great Lakes chain, draining into the Atlantic Ocean through the Saint Lawrence River. Its health is important to major population centres along the lake's shoreline, including Toronto and Hamilton. Line 9 crosses directly underneath numerous waterways just before they flow into Lake Ontario, including the Humber, Trent, and Rouge rivers. A spill into the lake would threaten countless bird and fish species, and severely impact the millions of people who live along the lake on both sides of the border.



Peter Harding

### **THE THAMES RIVER**

The Thames River is home to many native species that are found almost nowhere else in Canada. A number of these are species at risk. The river and its many tributaries are rich in aquatic life, with approximately 90 species of fish, 30 species of freshwater mussels and 30 species of reptiles and amphibians. Line 9 crosses the Thames River just north of London, Ontario.<sup>30</sup> The river flows into the Great Lakes.

## Increased health risks from air pollution

As tar sands oil production expands, so do the negative impacts associated with the refining process—including smog, increased greenhouse gas emissions and severe public health problems like cancer. Enbridge’s plan is likely to result in cities like Sarnia and Montreal refining more tar sands oil, either through the construction of new refineries or the retrofitting of old ones.<sup>31</sup>

Sarnia already has the worst air quality in Canada, and Montreal isn’t far behind.<sup>32</sup> Sarnia is home to dozens of chemical plants and large oil refineries. In Montreal, studies have shown that refinery emissions can be linked to high asthma rates.<sup>33</sup>

Refining more low-quality fuels in communities near oil refineries can worsen already serious environmental health risks.<sup>34</sup> Tar sands oil processing releases significant amounts of sulfur dioxide, nitrogen oxide, hydrogen sulfide, mercury, cadmium, and lead.<sup>35</sup> Pollutants like these have been linked to increased rates of cancer, heart disease, reproductive disorders, and respiratory diseases.<sup>36</sup>

Refining tar sands oil also harms the environment. It is predicted that switching from refining lighter crude oils to heavier tar sands crude oils could double or even triple refinery emissions of greenhouse gasses.<sup>37</sup>

## A bad deal for Ontario

While Enbridge and other supporters have made claims about the economic benefits of bringing Alberta tar sands oil to Ontario, they have failed to provide good information to back them up. They point to price difference between the imported oil that currently gets to Ontario’s refineries and the cheaper oil that would replace it.

It’s true that Ontario does send lots of money out of province each year to buy oil, roughly \$20 billion or the same amount as Ontario’s entire education budget. Yet already, 60% of Ontario oil comes from western Canada.<sup>38</sup> Enbridge’s plan would cut off access to imported oil, which makes up the other 40% of oil used now, but this doesn’t necessarily mean cheaper gas in Ontarians’ gas tanks. And so far, Enbridge has failed to provide detailed information on the economic impacts of its plans.

First, it limits options by forcing Ontario to rely solely on oil from the west. Having two sources is better than one, especially when it comes to volatile oil markets and old pipelines. Pipelines need to be shut down for repairs, making options essential. Following the spill into the Kalamazoo River, Enbridge was forced to shut down its Line 6B pipeline for several months, which created the risk of regional gas shortages and job losses at refineries supplied by that pipeline.<sup>39</sup>

Second, the motivation for oil producers to ship oil east and to the Gulf coast is to gain access to markets where they can fetch more money per barrel of tar sands oil. This was a key factor for TransCanada’s proposed Keystone XL pipeline.<sup>40</sup> As tar sands oil gains more access to markets other than the U.S. Midwest, the price per barrel will likely go up.

The problem is that Enbridge hasn’t provided a thorough study of what this all means for Ontario’s refineries and gas prices in the province. The project is driven by the demand to get more tar sands oil to the U.S., not by the needs of Ontario. It warrants

a comprehensive look at the pros and cons of this project for jobs and Ontario's economy especially given the higher risks of a tar sands oil spill, which could create major economic headaches for local communities. As it stands, Ontarians are being expected to blindly believe that it will be good with no data to back that up. They deserve better.

## The choice: oil spills or clean energy

Ontarians are being asked to accept the risk of more polluting oil spills with no clear benefit to the province, all in the name of getting more tar sands oil to the U.S. But Ontario is already a leader in clean energy, shutting down smog-causing coal plans and spurring clean renewable energy like solar and wind. Cities like London and Hamilton, where manufacturing has been hard hit by a soaring petro-dollar, are benefitting from new jobs building clean energy products.

Instead of allowing Ontario to become a corridor for dirty energy, it can create more green jobs, send less money out of province for oil, and build a more sustainable transportation system. This could include building more public transit and becoming a leader in electric cars, and harnessing the jobs that come along with fueling transportation with energy made in the province. There are solutions that work today to fight global warming by using less oil.

Enbridge's plan would drive us to use more oil, no matter the risks of spills or global warming. That's the wrong choice, and the Line 9 pipeline should not be reversed.



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