

## Enbridge Pipeline Information

### *Kalamazoo River Disaster*



In 2010, a tar sands pipeline owned and operated by Enbridge, Inc, ruptured near Marshall, Michigan, spilling over one million gallons of oil into a tributary of the Kalamazoo River.

### Kalamazoo River Oil Spill



Oil sheen near Ceresco Dam

[Wikimedia](#) | © [OpenStreetMap](#)

<b>Location</b>	<u>Talmadge Creek and Kalamazoo River</u> , Calhoun County, near <u>Marshall, Michigan</u>
<b>Coordinates</b>	 <u>42.25743°N 84.99307°W</u> Coordinates:  <u>42.25743°N 84.99307°W</u>
<b>Date</b>	July 26, 2010
<b>Cause</b>	Ruptured pipeline
<b>Operator</b>	<u>Enbridge Energy</u>

Spill characteristics	
Volume	877,000 to 1,000,000 US gal (3,320 to 3,790 m <sup>3</sup> )
Shoreline impacted	approx. 25 mi (40 km)

The Kalamazoo River oil spill occurred in July 2010 when a pipeline operated by Enbridge (Line 6B) burst and flowed into Talmadge Creek, a tributary of the Kalamazoo River. A 6-foot (1.8 m) break in the pipeline resulted in one of the largest inland oil spills in U.S. history (the largest was the 1991 spill near Grand Rapids, Minnesota). The pipeline carries diluted bitumen (dilbit), a heavy crude oil from Canada's Athabasca oil sands to the United States.[1] Cleanup took five years.[2] Following the spill, the volatile hydrocarbon diluents evaporated, leaving the heavier bitumen to sink in the water column. Thirty-five miles (56 km) of the Kalamazoo River were closed for clean-up until June 2012, when portions of the river were re-opened. On March 14, 2013, the Environmental Protection Agency (EPA) ordered Enbridge to return to dredge portions of the river to remove submerged oil and oil-contaminated sediment.

### ***The Spill***



Cleanup crews remove oil and contaminated materials from the Talmadge Creek stream bank near Marshall, Michigan. On Sunday, July 25, 2010, at about 5:58 p.m. EDT, a 40-foot (12 m) pipe segment in Line 6B, located approximately 0.6 miles (1.0 km) downstream of the Marshall, Michigan pump station, ruptured.[3] The rupture in the Enbridge Energy pipeline caused a spill of diluted bitumen or heavy crude oil originating from Canada (Alberta and Saskatchewan) into Talmadge Creek in Calhoun County, Michigan, which flows into the Kalamazoo River. The US Environmental Protection Agency (EPA) later estimated the spill to be in excess of 1 million US gallons (3,800 m<sup>3</sup>).[4] On 29 July 2010, the Calhoun County Health Department asked 30 to 50 households to evacuate, and twice as many were advised not to drink their water.[5] Though alarms sounded in Enbridge's Edmonton headquarters at the time of the rupture, it was eighteen hours before a Michigan utilities employee reported oil spilling and the pipeline company learned of the spill. Meanwhile, pipeline operators had thought the alarms were possibly caused by a bubble in the pipeline and, while for some

time it was shut down, they also increased pressure for periods of hours to try to clear the possible blockage, spilling more oil.[6] The oil was contained to a 25-mile (40 km) stretch of the Kalamazoo River as several hundred workers took part in the cleanup.[7] Regional EPA Director Susan Hedman estimated that it would take weeks to remove the bulk of the oil from the river, several months to clear oil from the flood plains, and several more months to clean the oil out of the marsh where the spill originated. However, a year later, a 35-mile stretch of the river remained closed.[8] Originally estimated at US\$5 million,[9] by September 2011, cleanup costs passed \$585 million and were expected to rise by 20 percent.[8] The cleanup expense by summer 2012 had totalled \$765 million.[6] By November 2014, the total had risen to \$1.21 billion, with an estimated \$219 million in costs yet to be paid.[10]

### ***Aftermath***

In June, 2012, authorities reopened most of the 35 miles (56 km) of the river that had been closed to recreation after the spill. Part of the river at the Morrow Lake delta remained closed and other sections of the river remain restricted because of the ongoing cleanup of the oil sands product called diluted bitumen (dilbit) oil the pipeline had been transporting.[11] The United States Department of Transportation summer 2012 "fined Enbridge \$3.7 million dollars and as part of that fine they listed 22 probable violations that happened relating to the spill. And several of those [violations] are about what happened in the [Edmonton] control room".[6] Though alarms sounded in Enbridge's Edmonton headquarters at the time of the rupture, it was eighteen hours before a Michigan utilities employee reported oil spilling and the pipeline company learned of the spill. Meanwhile, pipeline operators had thought the alarms were possibly caused by a bubble in the pipeline and, while for some time it was shut down, they also increased pressure for periods of hours to try to clear the possible blockage, spilling more oil.[6] The oil was contained to a 25-mile (40 km) stretch of the Kalamazoo River as several hundred workers took part in the cleanup.[7] Regional EPA Director Susan Hedman estimated that it would take weeks to remove the bulk of the oil from the river, several months to clear oil from the flood plains, and several more months to clean the oil out of the marsh where the spill originated. However, a year later, a 35-mile stretch of the river remained closed.[8] Originally estimated at US\$5 million,[9] by September 2011, cleanup costs passed \$585 million and were expected to rise by 20 percent.[8] The cleanup expense by summer 2012 had totalled \$765 million.[6] By November 2014, the total had risen to \$1.21 billion, with an estimated \$219 million in costs yet to be paid. [10]



Response operations in residential area at confluence of Talmadge Creek and Kalamazoo River. One of the reasons for the vast escalation in time and expense of cleanup was that the EPA had never handled a dilbit spill. In addition, it is reported that Enbridge never informed the EPA of the product distinction. Dilbit, like all crude oil, floats in water but, over time, will sink, complicating cleanup efforts, particularly if dredging is considered too ecologically damaging.[6] Other environmental factors will affect the rate at which this process takes place. This disaster was the largest on-land spill in American history to date.[12] In July 2016, Enbridge agreed to pay \$177 million in penalties and improved safety measures in a settlement with the U.S. Justice Department and the Environmental Protection Agency.[13] National Transportation Safety Board investigation[edit] In July 2012, the National Transportation Safety Board, the U.S. federal agency with regulatory authority over the failed pipeline, issued a report representing the official conclusion of the investigation into the incident. The investigators found that the operating firm, which had received an automated signal from the pipeline that a breach had occurred, misunderstood or did not believe the signal and attempted to continue to pump dilbit oil through the pipeline for 17 hours after the breach. Local firefighters were notified, and tried to locate the southern Michigan wetland site of the breach, but were initially unable to do so, further delaying the shutdown of the line.[14]



*Technicians begin removal of a section of pipe from the Enbridge pipeline oil spill site near Marshall, Michigan*

The NTSB investigation synopsis pointed to corrosion fatigue as the underlying cause of the catastrophic breach. The incident was exacerbated by the pipeline's disbanded polyethylene tape coating. In July 2012, the cost of the cleanup operations was estimated at \$767 million.[14] The NTSB stated the Enbridge dilbit oil spill is, as of 2012, the costliest onshore cleanup in U.S. history.[15] NTSB Chair Deborah Hersman likened "Enbridge's poor handling" of the spill to the Keystone Kops, asking: "Why didn't they recognize what was happening, and what took so long?" NPR reported that "NTSB investigators determined that the six-foot [1.8 m] gash in the pipe was caused by a flaw in the outside lining which allowed the pipe to crack and corrode. Now, in 2005, Enbridge actually had learned that this section of pipe was cracked and corroding. ... That same 2005 internal report pointed to 15,000 defects in the 40-year-old pipeline. And Enbridge decided not to dig up this [Talmadge Creek] area to inspect it." [16] In 2013, in opining on the Keystone XL pipeline proposal, the EPA recommended to the State Department that pipelines that carry bitumen should no longer be treated just like pipelines that carry any other oil. Stephen Hamilton, an ecology professor at Michigan State University and the independent science adviser at Talmadge Creek, detailed the challenges and expense of the still-ongoing Michigan cleanup.[17][18] Additional dredging under 2013 order[edit]

The EPA issued an Order for Removal in 2013 which required Enbridge to remove oil-contaminated sediment from specific locations along the Kalamazoo River, including the three areas where submerged oil was most pronounced:

- Upstream of the Ceresco Dam
- Mill Ponds area
- Morrow Lake, Morrow Lake Delta and adjacent areas
- Sediment traps at two designated locations[19]

By the fall of 2014, Enbridge had completed the remaining obligations under the 2013 Order for Removal, including the dredging of oil-contaminated sediment. Based on the successful completion of the work by Enbridge, the EPA transitioned the oversight of the remaining obligations to the Michigan Department of Environmental Quality in 2014. [20]

## **HAPPY ANNIVERSARY: THE LARGEST INLAND OIL SPILL IN U.S. HISTORY HAPPENED IN MINNESOTA**

*By Winona Laduke Executive Director, Honor the Earth Mar 3, 2017*

Most Minnesotans don't realize that we boast the largest inland oil spill in U.S. History. On this day, March 3, in 1991, the Line 3 pipeline ruptured near Grand Rapids, Minn., spilling over 1.7 million gallons of oil, much of which flowed into the Prairie River, after a negligently delayed response by the company. The Prairie is a tributary of the Mississippi, so were it not for the 18 inches of ice on top of the river, the spill could have poisoned the drinking water of millions downstream, and would likely be remembered very differently. Thankfully, this was back in the days when our territories were still frozen and snow-covered in March, before climate change had fully sunk its teeth.

Due to sheer luck, the cleanup was relatively quick and effective, so the spill received nowhere near as much media attention as the catastrophic Kalamazoo River spill of 2010. Enbridge has spent more than \$1.2 billion dollars (and still counting) and the better part of a decade cleaning up that mess, and they haven't finished yet. It turns out that 1.1 million gallons of Alberta tar sands crude oil is not easily removed from riverbanks and sensitive wetlands. Minnesota, take heed.

Line 3 is now 56 years old, well past its intended lifespan, but still carries crude oil across Northern Minnesota on its way from Alberta to Superior, Wisconsin, cutting directly across the Leech Lake and Fond du Lac Reservations. Originally owned by Lakehead Pipeline, it is now part of Enbridge's Mainline Corridor, which has six pipelines in it - the old Lakehead lines 1, 2, 3, and 4, plus the new Alberta Clipper and its diluent companion, Line 13. Many governmental reports refer to Lines 3 and 4 as a single unit, because of the complicated ways they work in tandem. Together, they are responsible for not only the 1991 Grand Rapids spill, but also the catastrophic 2002 spill near Cohasset, Minn.; the 2007 explosion in Clearbrook, Minn., that killed two workers; a serious spill in Regina, Alberta in December 2014; and countless other ruptures and spills. Enbridge reports that since 1990, Line 3 has had at least fifteen large spills (more than fifty barrels each), but the number of small spills and leaks is anybody's guess.[1] Line 3 is crumbling. According to Enbridge's own data, it has ten times as many corrosion anomalies per mile than any other pipeline in their Mainline System.[2] They estimate over half a million structural anomalies in Line 3, which is about 1 every 10 feet. Enbridge Integrity Supervisor Laura Kennett has testified, "I consider Line 3 to be in the deterioration stage ... as external corrosion growth is increasing in an exponential fashion." [3] The company has reduced the pressure to the bare minimum that still allows oil to flow, and spends billions of dollars digging up and fixing pieces of it (they anticipate needing at least 12,000 integrity digs in the next decade just for maintenance). In other words, Line 3 is a ticking time bomb. They cite this as justification for building a new one. But that is backwards thinking. The rational response would be to shut it down immediately and prevent them from doing this again to our grandchildren.

Enbridge doesn't care about us. Instead of cleaning up this mess, and putting hard-working Minnesotan union members to work doing it, Enbridge simply plans to abandon the pipeline and inevitable contamination in the ground, walk away, and build an entirely new Line 3 pipeline in a brand new corridor. The State of Minnesota, including the Public Utilities Commission (PUC), has the power and responsibility to regulate pipeline abandonment, but there is currently no plan. Because Line 3 is the first crude oil pipeline to be abandoned in our state, there is a risk that the PUC will avoid their responsibility and set a disastrous precedent. But tribal governments, landowners, local businesses, and concerned community members across the north are standing up to say no, and demand accountability.

After four years of resistance, an alliance of tribal and non-tribal communities in Minnesota defeated Enbridge's proposed Sandpiper pipeline, but Enbridge still plans to build that corridor, through the heart of Minnesota's lake country. They call this the Line

3 “Replacement Project,” but don’t be fooled, it is not a replacement. It’s a new pipeline with larger diameter pipe, designed to carry a completely different type of oil through a brand new corridor, with more than double the shipping capacity. The new Line 3 could eventually carry over a million barrels per day of tar sands, the dirtiest oil in the world.

The proposed corridor threatens some of the shallowest aquifers, cleanest ground waters, most permeable soil types, and largest wild rice beds in North America. The route would also pierce the heart of Ojibwe treaty lands, where we retain the rights to hunt, fish, gather, hold ceremony, and travel. It is our responsibility as water protectors to prevent this.