

Enbridge Line 5 Oil Pipeline at the Straits of Mackinac

A position paper by the Sault Ste. Marie Tribe of Chippewa Indians

Executive Summary

This document representing the Sault Ste. Marie Tribe of Chippewa Indians' position was prepared in response to a consultation by the state of Michigan Petroleum Pipelines Task Force.

Recommendation 1: That the state of Michigan require Enbridge to carry out and release to the public a detailed, technical assessment of the support to the Line 5 pipelines across the entire stretch of the crossing at the Straits of Mackinac, including a description of what, if any, support is in place crossing the Mackinac Trench.

Recommendation 2: That the state of Michigan require Enbridge to prepare and submit documentation applying for a renewal of the Bottomlands easement, and on that basis the state conduct full public hearings on this application.

Recommendation 3: That as part of its responsibility under the Great Lakes Submerged Lands Act, the state of Michigan require Enbridge to carry out a study of environmental impacts from a credible worst-case scenario spill at the Straits, to include the spill of the entire contents of the pipelines between shut off valves, in credibly extreme weather conditions during winter. That this study be made public.

Recommendation 4: That the state of Michigan abandon the ill-advised House Bill 4540 and restore accountability and integrity to public process dealing with environmental threats in the State.

Recommendation 5: That the state of Michigan shoulder its responsibility to the well being of Michigan residents and natural resources, and immediately pursue all avenues toward requiring decommissioning of Enbridge Line 5 at the Straits of Mackinac.

Background

Enbridge Pipelines Inc. operates Line 5, a 645-mile, 30-inch-diameter pipeline built in 1953, that extends a distance of 4.6 miles beneath the Straits of Mackinac and transports a variety of petroleum products including light crude oil and natural gas liquids. Line 5 runs across the northern portions of Wisconsin and Michigan, and as it reaches the Straits of Mackinac, the line splits into two, 20-inch-diameter, parallel pipelines buried onshore and travelling deep underwater, crossing the Straits of Mackinac west of the Mackinac Bridge for a distance of 4.6 miles.

This pipeline at any given time contains nearly 1 million gallons of crude oil beneath the waters of the Straits of Mackinac. For four to six months of the year, the Straits are ice-covered, making spill response nearly impossible.

Pipeline Condition

It is difficult to observe the condition of the pipeline under the Mackinac Straits. Enbridge states that it observes pipeline integrity from aircraft every few weeks — this would not be a way to observe the line itself, but merely to spot a leak small enough to elude pressure sensors.

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In 2013, National Wildlife Federation sent a team of divers to investigate conditions. They observed broken anchor supports, debris and fouling of the pipeline including encrustation with mussels, and long stretches of pipe suspended over the lake bottom without support. (1)

The twin oil Enbridge pipelines rely on 1950s technology and use outdated protective coating and welds connecting the 40-foot segments that make up the pipelines that run through the Straits of Mackinac, where Lake Michigan and Lake Huron meet. Shifting sand and gravel at the bottom likely causes friction that is accelerating pipeline wear after more than six decades of use. Certainly the presence of numerous broken anchor points indicates shifting of the lines.

Welds from 1953 are technically deficient and have become more so due to deterioration over time. Of the Enbridge pipeline spills reported from 2002 to 2010, 16 pipeline spills were caused either by weld failures or from the failure of coal tar enamel coating similar to the coating used on Line 5 through the straits. (2)

The pipelines were constructed prior to the zebra mussel invasion of the Great Lakes and were not designed to withstand the corrosive impact of zebra mussels. The invasive species secretes an acidic waste that corrodes exposed steel. The steel pipes are coated with obsolete coal tar enamel that has failed elsewhere, including in 2009 with Enbridge's Line 2 near Odessa, Saskatchewan, which was constructed the same year as Enbridge's Line 5 through the Straits.

Furthermore, encrustation by zebra and quagga mussels adds significant weight to infrastructure, adding stresses to areas of the pipeline that are suspended, unsupported, over the lake bottom.

Line 5 is vulnerable to material, weld and equipment failures, which PHSMA identifies as the most common causes of pipeline ruptures. As discovered in the Kalamazoo River disaster, some protective pipeline coatings and wraps that were supposed to prevent corrosion actually contributed to the problem.

Line 5 traverses dramatically uneven terrain at the bottom of the Straits. The pipeline suspends over a 250-300 foot-deep, quarter-mile-wide, underwater canyon with steep walls, remnant topography from a former preglacial river. The tension and stresses on that section of the line are likely to be severe but neither Enbridge nor the government will release any information about how, or whether, that segment of the pipeline is supported. (3)

It would take at least three hours for Enbridge to dispatch cleanup crews to the Straits in the event of a spill. In that amount of time, oil would spread for miles into Lake Michigan and Lake Huron.

In 2013, Enbridge upgraded pumps along Line 5 and increased the oil flow under the Straits by 10 percent or 2.1 million gallons per day.

Recommendation 1: That the state of Michigan require Enbridge to carry out and release to the public a detailed, technical assessment of the support to the Line 5 pipelines across the entire stretch of the crossing at the Straits of Mackinac, including a description of what, if any, support is in place crossing the Mackinac Trench.

Threat of a Spill

Enbridge Line 5 was designed for a 50-year life, and is now 12 years beyond its design life. Numerous small ruptures have already occurred on land portions of this line, including a spill in early December

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2014 on the bank of the Manistique River just 1 mile from Lake Michigan. That spill occurred when the line was carrying natural gas liquids, which evaporated. Fortunately for Lake Michigan, it was not carrying crude oil at the time.

A spill at the Straits would require the oversight of the US Coast Guard as the lead federal agency. Sector Sault has been planning and conducting exercises to prepare for a spill, however the response to an oil spill at this location would be terribly inadequate. It is simply not possible to respond effectively to an oil spill in heavy currents, under ice, or in the high winds that are routinely experienced at the Straits of Mackinac.

A July 2014 study by the University of Michigan called the Straits “the worst possible place for an oil spill in the Great Lakes.” That study simulated the fate and transport of oil from a spill at three sites along the pipeline under the water, and concluded that a plume of oil would stretch 85 miles, from Beaver Island in the west to Mackinac Island and farther down the Lake Huron shore. (4)

The Enbridge Record

Enbridge’s pipeline system in North America has racked up a record of notoriety that should embarrass the company and convey no credibility to their promises of safety and response.

Between 1999 and 2010, Enbridge pipes suffered more than 800 spills, dumping almost 7 million gallons of oil into the environment. Enbridge’s Lakehead system has polluted the environment, forced evacuations and killed workers. (5)

Several of those spills occurred on Line 5, the pipeline that carries crude oil from northern Wisconsin, to Sarnia, Ontario. Line 5 runs along the northern edge of Lake Michigan before crossing the Straits of Mackinac; it also crosses some of the region’s best trout streams, including the famed Au Sable River.

In 1999, in Crystal Falls, Michigan, an Enbridge pipeline rupture resulted in a spill of 226,000 gallons of crude oil and natural gas liquids. The gas evaporated, and Enbridge deliberately ignited the gas cloud to prevent it dispersing and igniting elsewhere. The resulting fire burned for 36 hours over 8 acres. The Enbridge explanation for this breach is alarming to anyone who understands the conditions at the Mackinac Straits — that the pipeline was rubbing on a rock, which caused it to rupture.

The 2010 catastrophic spill at Marshall, Michigan, is illustrative of Enbridge’s lax pipeline integrity program. Line 6B was carrying tar sands oil — diluted bitumen — yet Enbridge did not inform EPA, which was conducting the cleanup, of the nature of the product for many days after the spill. Enbridge’s control center in Edmonton ignored pressure sensor alarms for more than 17 hours, thinking they were incorrect, and at some points even increasing pressure in the lines thinking there was an air bubble. After the alarms were finally acknowledged, it took a further hour to locate the spill, and then only when a local law enforcement official noticed it and reported it.

The Enbridge spill response plan was woefully inadequate, requiring the EPA to “federalize” the cleanup. The National Transportation Safety Board determined that the probable cause of the rupture was corrosion fatigue cracks that grew and coalesced from crack and corrosion defects under disbanded polyethylene tape. The NTSB cited pervasive organizational failures at Enbridge, including deficient integrity management procedures, which allowed well documented crack defects in corroded areas to propagate until the pipeline failed. Contributing factors included weak regulation and oversight by PHMSA. (5)

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The NTSB investigation revealed that Enbridge had known of the cracks in that pipe since 2005, however, it had no way to determine the precision of its measurements and estimates of crack sizes. Furthermore, Enbridge made engineering assessments of pipeline integrity without knowing which cracks were occurring in areas of corrosion, or the depth of corrosion in the vicinity of cracks. (5)

The NTSB report scolds Enbridge by repeating a recommendation made from a report on a previous spill. Promises of safety ring hollow from a corporation that ignores NTSB recommendations from prior incidents. Notably, this recommendation is about providing information to emergency response agencies in communities along pipeline routes.

The Tribe's Interest

The waters that would be impacted by any spilled petroleum from Line 5 in the Straits of Mackinac would include the shoaling, spawning and nursery areas of Northern Lake Michigan and Northern Lake Huron that encompass the most productive fishing areas of the 1836 Treaty. It is estimated that more than half of the tribal fishing efforts and harvest occur in the waters likely to be impacted.

Unlike the oceans, the Great Lakes are a relatively confined ecosystem, meaning that they are ill equipped to digest or flush away oil. Oil spills in freshwater ecosystems cause a myriad of short term and long-term effects. Beyond the immediate threat to fish and wildlife, oil spills can also affect the spawning success of trout because the eggs of trout and other salmon species are "highly sensitive to oil toxins," according to the U.S. Fish and Wildlife Service. (6) Small amounts of oil can kill fish eggs and oil toxicant that linger in sediment and aquatic vegetation long after a spill is "cleaned up" can harm aquatic ecosystems for decades after a spill occurs. (7)

A catastrophic oil spill in the Straits of Mackinac would devastate the tribal fishing industry and shut down water intakes for numerous communities. It would devastate the shoreline, the island ecosystems and the tourist industry.

The Sault Tribe is investing staff time and financial resources with a \$610,000 grant from the Great Lakes Fishery Trust to redevelop a commercial and subsistence fishing access point at Epoufette Bay, Michigan, which is immediately west of the Straits of Mackinac. The harbor will serve fishers relying on the excellent fishing grounds in Lake Michigan which would be destroyed by an oil spill at the Straits.

The landscape surrounding the Straits of Mackinac is home to a myriad of ecologically important and unique flora and fauna, including endangered species and ecotones such as Houghton's goldenrod and Alvar limestone communities. Many of these species thrive in habitats in the nearshore environment. This ecosystem is an important stop-over site for millions of migratory birds and year round home to millions of others. From the miles of intricately sinuous shores of the Les Cheneaux Islands to the vast coastal marshes at Pointe Aux Chenes, even a minor oil spill would be devastating to the region's wildlife.

Regulatory Regime:

PHMSA, the Pipeline Hazardous Materials Safety Administration, a part of the US Department of Transportation, regulates pipeline operations, approves spill management plans, etc. This agency is woefully underfunded, with each inspector responsible for inspections of hundreds of miles of pipeline and a significant backlog in inspections, reports, and enforcement actions. The Spill Management Plan

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for the Enbridge Line 6B segment which ruptured catastrophically in 2010 was found to be deplorably inadequate.

The US EPA, which is lead response agency for spills occurring on land, has no role in approving operating plans or spills management plans, however, which proved to be an aggravating factor in the Enbridge Kalamazoo disaster. EPA works with the Coast Guard to carry out training response exercises to test those plans but cannot order a responsible party to improve or correct inadequate plans.

Enbridge Line 5 was constructed before the adoption of the Great Lakes Submerged Lands Act. The pipeline was grandfathered in and Enbridge has never had to pursue a permit for this pipeline under the Act, and determine the risks of Line 5 to the public resources at the Straits. Any pipeline company attempting to place a pipeline on Great Lakes bottomland today would need to go through permitting, including a public notification period and for a project of this magnitude, public hearings. To this date, Enbridge has not been required to do so in order to continue the privilege of operating a pipeline on Great Lakes bottomlands.

When Line 5 was constructed, the state granted an easement with the right to terminate and order the pipeline removed if Enbridge failed to meet all required conditions. In 2014, Enbridge admitted to violating the terms of the easement agreement by not installing the required anchoring structures every 75 feet. Enbridge has failed to install as many as 65 supports required by the state to prevent the pipeline from grinding along the bottom, bending, and potentially failing or breaking at its weld points. These structures are necessary in the event of a strong storm and due to the turbulent hydrological conditions in the Straits of Mackinac. The fact that anchoring structures are missing, broken, or were never installed has created increased stresses on the pipe walls which is worrisome to pipeline integrity.

Recommendation 2: That the state of Michigan require Enbridge to prepare and submit documentation applying for a renewal of the Bottomlands easement, and on that basis the state conduct full public hearings on this application.

The state of Michigan, owing to public concerns arising from this pipeline and the Enbridge pipeline disaster at Talmadge Creek Michigan in 2010 leading to the contamination of 40 miles of the Kalamazoo river, has established the Michigan Petroleum Pipelines Task Force. The Task Force is charged with examining issues and making recommendations to the Government of the State of Michigan regarding petroleum pipelines in Michigan, with particular emphasis on Enbridge Line 5 at the Straits.

The Task Force recommendations are due to be released in early summer 2015. However, numerous deficiencies in the Task Force process, scope, and testimony to be considered have been pointed out (2). Among these are the lack of a credible worst-case spill scenario. Testimony and public statements from Enbridge insist that the company can respond and shut off valves within 3 minutes— statements that are belied by Enbridge's numerous and egregious failures to recognize when it has a problem. Furthermore, shutting off valves still leaves nearly a million gallons of oil in the pipes under the Straits. In addition, a credible worst-case scenario would include worst-case conditions for attempting a cleanup – including storm conditions and an 8-foot ice cover over the Straits.

Recommendation 3: That as part of its responsibility under the Great Lakes Submerged Lands Act, the state of Michigan require Enbridge to carry out a study of environmental impacts from a credible worst-case scenario spill at the Straits, to include the spill of the entire contents of the pipelines between shut off valves, in credibly extreme weather conditions during winter. That this study be made public.

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Need for Transparency

MI House Bill 4540, introduced in 2015, would amend the state's Freedom of Information Act by exempting information "about the production, generation, transportation, transmission, or distribution of fuel or energy" under the Act. If HB 4540 is adopted into law, companies such as Enbridge would not have to reveal what is being pumped through their pipelines or even where the pipelines are located, and could withhold safety and other records. Although the sponsors say the bill is for national security, it comes at a time when the public is seeking more information — and needs to know more information — about Enbridge pipelines.

Enbridge has operated far too long under a veil of secrecy. As noted above, Enbridge failed to disclose that Line 6B was carrying tar sands crude after the spill at Marshall, Michigan, unnecessarily obstructing proper cleanup. It was chided by the NTSB in a repeat recommendation about providing information to emergency response agencies. And in a recent report, it is noted that there is a lack of publicly available information about the integrity and end-of-life plans for Line 5 at the Straits. Enbridge has controlled public access through a password-protected portal that prevents the state of Michigan to have documents available for review under state Freedom of Information law. (2)

Recommendation 4: That the state of Michigan abandon the ill-advised House Bill 4540 and restore accountability and integrity to public process dealing with environmental threats in the state.

The Outcomes

It is Sault Tribe's considered opinion that no corporation would be successful in any proposal to site and construct a new pipeline at this location under the 2015 regulatory regime, due to the catastrophic impacts of a failure, and further it is the tribe's belief that Enbridge Inc. knows this and is aware that it would not be permitted to simply replace the aging pipeline with new technology at the Straits. It is the tribe's belief, based on Enbridge public statements, that given these constraints and the value of Line 5 to the Enbridge system, Enbridge intends to continue to operate this pipeline and has no intention of voluntarily taking it out of service.

No infrastructure lasts forever, no matter what maintenance and repair regime is adhered to. No detection and warning system will prevent a failure, it can only respond to it. The pipeline has exceeded its design life by 25 percent and yet there is still no decommissioning plan in place. Any logical analysis would admit there is a need to plan for a future petroleum transportation system that does not include this pipeline. Prudence would dictate that that plan be implemented now.

In the tribe's judgment, there are only two possible outcomes for the Enbridge Line 5 pipeline at the Straits of Mackinac, and one of these two things will eventually occur, and these are 1) the pipeline will rupture and cause catastrophic damage to the Great Lakes system, or 2) a regulatory agency will succeed in requiring decommissioning of the Straits segment before a catastrophe occurs.

The Sault Ste. Marie Tribe of Chippewa Indians passed a resolution in February 2015, entreating any regulatory authority, be it federal, state, or other, to take all action toward requiring decommissioning of the Enbridge Line 5 pipeline at the Straits of Mackinac, and specifically requesting the Michigan Petroleum Pipelines Task Force to include in its recommendations the decommissioning of the Enbridge Line 5 pipeline at the Straits of Mackinac.

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Recommendation 5: That the State of Michigan shoulder its responsibility to the well being of Michigan residents and natural resources, and immediately pursue all avenues toward requiring decommissioning of Enbridge Line 5 at the Straits of Mackinac.

Time is of the essence.

Pump and Pray is not a responsible management strategy.

Citations:

1. <http://blog.nwf.org/2013/10/whats-the-condition-of-the-pipeline-beneath-the-straits-of-mackinac-video/>, accessed 28 May 2015
2. A Composite Summary of Expert Comment, Findings, and Opinions on Enbridge's Line 5 Oil Pipeline in the Straits of Mackinac in Lake Michigan, Compiled by James Olson, J.D., LL.M. and Liz Kirkwood, J.D. on behalf of FLOW's (For Love of Water) for submission to the Michigan Petroleum Pipeline Task Force April 30, 2015.
3. From NWF Sunken Hazard see https://www.nwf.org/pdf/Great-Lakes/NWF_SunkenHazard.pdf
4. <http://graham.umich.edu/media/files/mackinac-report.pdf>, accessed 28 May 2015
5. <http://www.nts.gov/investigations/AccidentReports/Pages/PAR1201.aspx>, accessed May 28, 2015.
6. "Effects of Oil on Wildlife and Habitat," USFW June 2010, pg2.
7. "Exxon Valdez Oil Spill Impacts Lasting Far Longer Than Expected, Scientists Say," Science News, Dec. 23, 2003.



RESOLUTION NO: 2015-45

**RESOLUTION IN SUPPORT OF DECOMMISSIONING OF
THE ENBRIDGE LINE 5 OIL PIPELINE AT THE STRAITS OF MACKINAC**

WHEREAS, the Sault Ste. Marie Tribe of Chippewa Indians is a Federally recognized Indian Tribe organized under the Indian Reorganization Act of 1934, as amended; and

WHEREAS, Enbridge Pipelines, Inc. operates Line 5, a 645-mile, 30-inch-diameter pipeline built in 1953 that extends a distance of 4.6 miles beneath the Straits of Mackinac and transports a variety of petroleum products; and

WHEREAS, Line 5 runs across the northern portions of Wisconsin and Michigan, and as it reaches the Straits of Mackinac, the line splits into two, 20-inch-diameter, parallel pipelines buried onshore and tapering off deep underwater, crossing the Straits of Mackinac west of the Mackinac Bridge for a distance of 4.6 miles; and

WHEREAS, the waters that would be impacted by any spilled petroleum from Line 5 in the Straits of Mackinac would include the shoaling, spawning and nursery areas of Northern Lake Michigan and Northern Lake Huron that encompass the most productive fishing areas of the 1836 Treaty area; and

WHEREAS, it is estimated that more than half of all fishing efforts and harvest occur in the waters likely to be impacted; and

WHEREAS, a catastrophic oil spill in the Straits of Mackinac would devastate the tribal fishing industry; and

WHEREAS, the Sault Tribe is investing staff time and financial resources as well as a \$610,000 grant from the Great Lakes Fishery Trust to redevelop a commercial and subsistence fishing access point at Epoufette Bay, Michigan, which is immediately west of the Straits of Mackinac and will serve fishers relying on the excellent fishing grounds in Lake Michigan waters which would be severely affected by any oil spill at the Straits; and

WHEREAS, Enbridge Line 5 was designed for a 50 year life, and is now twelve years beyond its design life, and numerous small ruptures have already occurred on land portions of this line; and

WHEREAS, this pipeline at any given time contains nearly one million gallons of crude oil beneath the waters of the Straits of Mackinac; and

WHEREAS, the State of Michigan, owing to public concerns arising from this pipeline and the Enbridge pipeline disaster at Talmadge Creek Michigan in 2010 leading to the contamination of 40 miles of the Kalamazoo river, has established the Michigan Petroleum Pipelines Task Force; and

WHEREAS, the Michigan Petroleum Pipelines Task Force is charged with examining issues and making recommendations to the Government of the State of Michigan regarding petroleum pipelines in Michigan, with particular emphasis on Enbridge Line 5 at the Straits; and

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WHEREAS, it is our considered opinion that no corporation would be successful in any proposal to site and construct a new pipeline at this location under the 2015 regulatory regime, due to the catastrophic impacts of a failure, and further it is our belief that Enbridge, Inc. knows this and is aware that it would not be permitted to simply replace the aging pipeline with new technology at the Straits; and

WHEREAS, it is our belief based on Enbridge public statements, that given these constraints and the value of Line 5 to the Enbridge system, Enbridge intends to continue to operate this pipeline and has no intention of voluntarily taking it out of service; and

WHEREAS, in our judgment there are only two possible outcomes for the Enbridge Line 5 pipeline at the Straits of Mackinac, and one of these two things will eventually occur, and these are 1) the pipeline will rupture and cause catastrophic damage to the Great Lakes system, or 2) a regulatory agency will succeed in requiring decommissioning of the Straits segment before a catastrophe occurs.

THEREFORE, BE IT RESOLVED, that the Sault Ste. Marie Tribe of Chippewa Indians hereby entreats any regulatory authority be it Federal, State, or other, to take all action toward requiring decommissioning of the Enbridge Line 5 pipeline at the Straits of Mackinac.

BE IT FURTHER RESOLVED, that the Sault Ste. Marie Tribe of Chippewa Indians specifically requests the Michigan Petroleum Pipelines Task Force to include in its recommendations the decommissioning of the Enbridge Line 5 pipeline at the Straits of Mackinac.

BE IT FURTHER RESOLVED, that time is of the essence in this entreaty.

BE IT FURTHER RESOLVED that the Chairperson of the Tribe, or his designee, is authorized to execute or amend all documents relating to.

CERTIFICATION

We, the undersigned, as Chairperson and Secretary of the Sault Ste. Marie Tribe of Chippewa Indians, hereby certify that the Board of Directors is composed of 13 members, of whom 12 members constituting a quorum were present at a meeting thereof duly called, noticed, convened, and held on the 17 day of February 2015; that the foregoing resolution was duly adopted at said meeting by an affirmative vote of 11 members for, 0 members against, 0 members abstaining, and that said resolution has not been rescinded or amended in any way.


Aaron A. Payment, Chairperson
Sault Ste. Marie Tribe of
Chippewa Indians


Bridgett Sorenson, Secretary
Sault Ste. Marie Tribe of
Chippewa Indians