

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

BAD RIVER BAND OF THE LAKE
SUPERIOR TRIBE OF CHIPPEWA
INDIANS OF THE BAD RIVER
RESERVATION,

OPINION AND ORDER

Plaintiff and
Counter Defendant,

v.

19-cv-602-wmc

ENBRIDGE ENERGY COMPANY, INC., and
ENBRIDGE ENERGY, L.P.,

Defendants and
Counter Claimants,

v.

NAOMI TILLISON,

Counter Defendant.

The Bad River Band of the Lake Superior Tribe of Chippewa Indians brought this action against Enbridge Energy to enjoin the continued operation of Enbridge's Line 5 crude oil and natural gas liquids ("NGLs") pipeline through the Bad River Reservation in Northern Wisconsin based on the risk of its failure constituting a public nuisance. The Band also seeks damages and injunctive relief for Enbridge's continuing to operate Line 5 in trespass on portions of the Reservation for which certain, longstanding rights of way have now expired. At summary judgment, the court: decided that Enbridge was in trespass and unjustly enriched by operating the pipeline on 12 land parcels owned in whole or in part by the Band for which the rights of way had expired; and dismissed Enbridge's counterclaims for breach of contract. (Dkt. #360.) However, the court concluded that there were genuine disputes of material fact relating to the Band's public nuisance claim

and request for injunctive relief, leaving four, primary factual disputes to be decided at trial: (1) whether Enbridge's operation of Line 5 on the Reservation constitutes a public nuisance at its crossing of a meander on the Bad River, where the greatest risk of a pipe failure currently exists within the Band's tribal territory; (2) if so, what form of injunctive relief, if any, should be imposed to abate that nuisance and address Enbridge's trespass; (3) what additional remedies, if any, should be imposed on Enbridge based on the court's findings as to liability; and (4) whether Enbridge was entitled to any relief on its remaining counterclaims.

After reviewing relevant expert reports, deposition designations and other voluminous, additional written submissions by the parties, the court held a six-day bench trial in October 2022 on these remaining issues. Shortly after the trial, the court issued an opinion and order: (1) denying Enbridge's request for declaratory and injunctive relief on its remaining counterclaims; and (2) directing the parties to meet and confer on specific issues relating to the Band's public nuisance claim, including attempting to agree on a shutoff and purge plan for Line 5 at the Bad River meander. (Dkt. #612.) The parties submitted alternative shutoff and purge proposals and more recently, provided an update regarding conditions at the Bad River meander as of May 2023. Specifically, as to the latter, the Band filed an Emergency Motion for Injunctive Relief (dkt. #628), indicating that recent erosion during spring flooding at the Bad River meander was so substantial that the threat of a Line 5 rupture is significantly greater than it was at the time of trial, and if it was not before, is now at risk of an "imminent," catastrophic rupture, requiring an immediate shutdown. After giving Enbridge a few days to marshal a response, the court

held an in-person, evidentiary hearing on May 18, 2023, to address the changing conditions at the meander.

Having reviewed the parties' shutoff and purge plans, as well as the additional evidence and arguments provided by the parties in writing and at the May 18 hearing, the court renders the following opinion and order on the remaining issues before it. As explained in this opinion, the court concludes that a rupture of Line 5 at the Bad River meander would unquestionably be a public nuisance, and that the current conditions at the meander create a real and unreasonable risk of that nuisance occurring such that equitable relief is warranted. However, the current threat of rupture is still not so imminent that an immediate shutdown of the pipeline is necessary to prevent the nuisance. This is particularly true when viewed in light of larger public interests in avoiding a precipitous shutdown of Line 5, the Band's own refusal to allow any remediation efforts at the meander to delay, if not avoid, a rupture and materially reduce its environmental impact, and the likelihood that a shutdown will spark at least temporary shortages and increased prices for refined gas, propane and butane in the Upper Midwest and Eastern Canada, creating hardships, especially for the poor and other economically challenged households.

Nevertheless, given the environmental risks, the court will order Enbridge to adopt a more conservative shutdown and purge plan as discussed in detail below. In addition, with respect to the Band's trespass claim, the court will award \$5,151,668 to the Band in profits-based damages for Enbridge's past trespass. Going forward, the court will also order Enbridge to continue paying the Band, according to the formula set forth below, for each quarter that Line 5 operates in trespass on the 12 allotment parcels. Finally, the court will

enjoin Enbridge to remove its pipeline within three years from any parcel within the Band's tribal territory on which it lacks a valid right of way and to provide reasonable remediation at those sites.

FACTS¹

A. Overview

Enbridge operates a network of pipelines and other infrastructure known as the "Lakehead system," which transports light crude oil and NGLs originating in Western Canada to refineries in the United States and Eastern Canada. The specific pipeline that is the subject of this lawsuit, Line 5, is part of the Lakehead system and transports about 23 million gallons of crude oil and NGLs *daily* over some 450 miles originating in Superior, Wisconsin and terminating in Sarnia, Ontario. In Northern Wisconsin, 12 miles of Line 5 runs underground through the Bad River Reservation, including through 12 allotment parcels on which Enbridge's rights of way expired in June 2013.

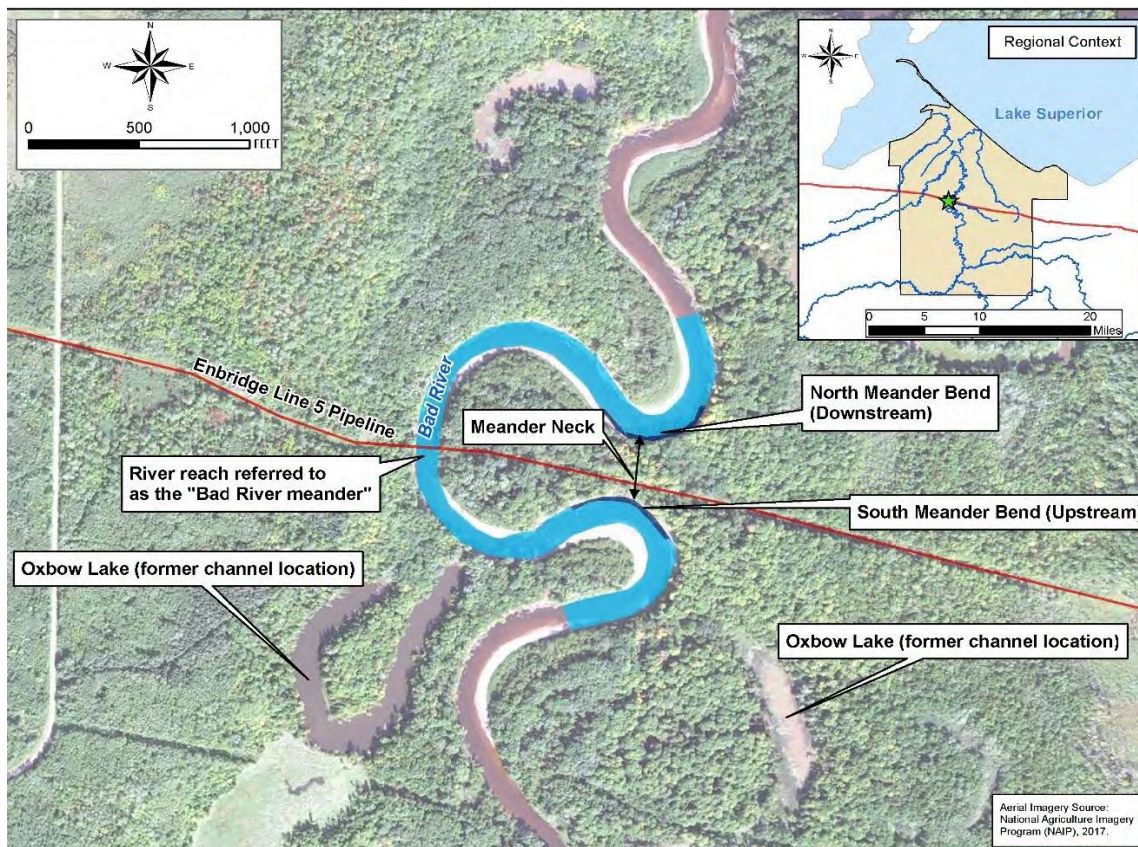
The Band's identity and way of life is rooted in reliance on and stewardship for their land, and Band members have become increasingly concerned that Line 5, which is now some 70 years old, will rupture and cause catastrophic environmental degradation to their lands and waters, particularly to the Bad River and potentially Lake Superior watersheds, concerns shared by a number of other individuals, businesses and entities dependent on

¹ The court provided a detailed, factual background of this case in its summary judgment opinion (dkt. #360), as well as its most recent posttrial decision (dkt. #619). This relatively brief summary of the facts includes further findings established at trial and the subsequent evidentiary hearing in May, although additional facts relevant to the remaining issues are set out in the court's opinion below where most pertinent to its analysis.

those same resources for enjoyment and commerce.² (Dkt. #599 (10/24/22 AM Trial Tr.) 64–126 (Band witnesses).) Indeed, the Band has designated the Bad River itself as an “outstanding tribal resource water,” which is the highest category of waters on the Reservation and subject to the most protection under the Band’s “antidegradation policy,” as approved by the Environmental Protection Agency. (Dkt. #600 (10/25/22 AM Trial Tr.) 16 (Naomi Tillison).) The EPA has also delegated to the Band the authority to administer federal and tribal water quality standards and certifications consistent with the Clean Water Act and applicable regulations. (*Id.* at 12–13 (Tillison).)

As noted, the area of most concern on the Reservation is where Line 5 runs underground through a specific “meander” on the Bad River. As this court explained in its most recent opinion, the evidence presented by both sides at trial confirms that: (1) the greatest known risk of a pipeline rupture on tribal lands is at that meander; and (2) an uncontrolled rupture at that location could result in significant environmental damage to the Bad River and Lake Superior watersheds, which is located only 16 miles downstream of the meander. (Dkt. #612, at 3.; dkt. #606 (10/24/22 PM Trial Tr.) 94 (Ian Paton); (WWE Rep. (dkt. #268) 27).)

² Among others, this concern is shared by *amicus* State of Michigan, who is suing independently in federal court in the Western District of Michigan to shut down Line 5 at its much longer crossing under the Straights of Mackinac. (Dkt. #665.)



(WWE Rep. (dkt. #268) 29, Fig. ES-2, *Bad River Meander Overview Map*.)

B. Conditions and Monitoring at the Meander

1. Conditions at the time of trial

Presently, Line 5 pipe at the meander is currently unexposed and completely underground. There are also no known, current problems with the structural integrity of the pipeline at that point, nor reason to believe that exposure of the pipeline to the surface of the meander, by itself, would cause the pipeline to fail. (Dkt. #606 (10/24/22 PM Trial Tr.) 12, 14 (Jonathan Jones).) Rather, the pipeline would likely rupture only when the land beneath the pipeline at the meander's neck is scoured away by the river's perpendicular current during flooding, then suspended in the air after the water's retreat,

so that inadequate land or water support exists for a “critical aerial span of approximately 100 feet. This is because, at that aerial span or more, the pipe has the potential to bend, become damaged and fail, although the pipeline would not reach this critical span until it was no longer supported by retreating floodwaters. (Dkt. #606 (10/24/22 PM Trial Tr.) 51–52 (Mark Weesner).)³ Thus, a pipeline rupture at the meander is most likely to occur if the riverbank continues to erode towards Line 5, exposes a segment of that pipe, and is scoured under the pipe unabated to critical aerial span.

As both sides’ experts testified at trial, the pipeline could be exposed in a single, significant flooding event, and in particular, an unsupported span of 65 feet or greater can quickly become more than 100 feet, especially after flood conditions. (Dkt. #606 (10/24/22 PM Trial Tr.) 62, 80 (Mark Weesner); dkt. #608 (10/26/22 PM Trial Tr.) 17–18 (Hamish Weatherly); *see also* WWE Report, dkt. #268-2, at 12 (“[I]t is foreseeable that a substantial length of pipeline could be exposed in a single high flow event, or over the course of several high flow events occurring within a short period of time.”).) Plus, the likelihood that the riverbank will erode, resulting in exposure and unsupported spanning at the meander due to natural, horizontal erosion near the pipeline at the meander’s riverbank, increases every year. (Dkt. #606 (10/24/22 PM Trial Tr.) 19 (Jonathan Jones)).

³ The critical aerial span of 100 feet is based on American Society of Mechanical Engineers (ASME) Table B31.4, which provides industry-standard calculations that govern the allowable span permitted for an exposed pipeline, and which has been incorporated into regulations promulgated by the Pipeline and Hazardous Materials Safety Administration, 49 C.F.R. 195.3(c)(3). (Dkt. #601 (10/26/22 AM Trial Tr.) 139, 165 (Deb Tetteh-Wayoe); dkt. #606 (10/24/22 PM Trial Tr.) 72 (Mark Weesner).) While still supported by floodwater, the allowable span may be as much as 265 feet.

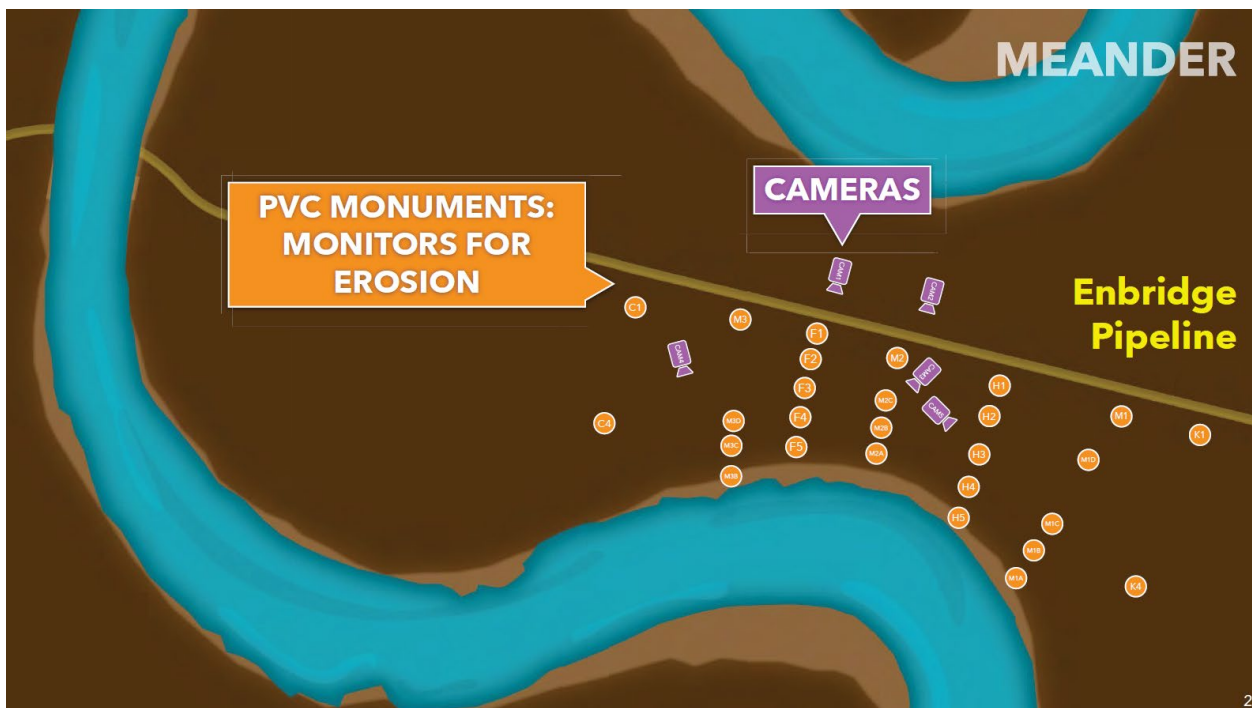
At the time of trial, there remained approximately 26 or 27 feet of riverbank between the Bad River shoreline and Line 5 at its nearest point at the meander, a distance that had remained stable for three, straight years as a result of below average flow rates and the natural accumulation of logs, vegetation and sand on the upstream riverbank at the meander. (Dkt. #599 (10/24/22 AM Trial Tr.) 133–137) (Jonathan Jones); dkt. #606 (10/24/22 PM Trial Tr.) 20–22 (Jonathan Jones).) Nevertheless, both sides’ expert reports and testimony at trial agree that Line 5 exposure from bank erosion was likely to occur within three to five years, and the Band’s experts opined that the pipe could become materially exposed in a single or multiple flooding events, depending on its size, beginning with any cubic feet per second (“cfs”) flow rate above 3,000. (Dkt. #606 (10/24/22 PM Trial Tr.) 11, 21, 25 (Jonathan Jones); dkt. #608 (10/26/22 PM Trial Tr.) 12 (Hamish Weatherly).) Illustrative of that risk is evidence only recently provided to the court, indicating that three flooding events between March and May of this year, ranging up to approximately 13,900 to 10,400 cfs, reduced the closest point of Line 5 to the meander’s riverbank by more than half, to only 11 feet.

2. Enbridge’s current “Meander Monitoring and Shutdown Plan”

Both the Band and Enbridge have cameras set up at that meander to monitor erosion and flood conditions, and Enbridge has had a specific “Meander Monitoring and Shutdown Plan” in place since June 2021. (Dkt. #600 (10/25/22 AM Trial Tr.) 65 (Naomi Tillison) (discussing cameras); Trial Exh. 70 (dkt. #616-1) (Enbridge’s 2021 plan).) Under the 2021 plan, Enbridge is required to monitor the meander using multiple methods, including aerial patrol, drone inspection, remote cameras, and U.S. Geological Survey

gauges and precipitation forecasts. The frequency at which remote cameras at the meander are reviewed by an Enbridge pipeline integrity engineer depends on the flow conditions on the river: less than 4,000 cfs (weekly review); between 4,000 to 10,500 cfs (daily review); and greater than 10,500 cfs (reviewed every 3 hours initially, “but increasing in frequency to near-continuously if the bank nearest the pipeline demonstrates significant erosion progressing toward the pipeline”).

Enbridge uses flag markers and “monuments,” which are posts stuck in the ground with assigned letters and numbers, that have been configured in a grid on both Enbridge’s and the Band’s property at the meander. At the time of trial, the monuments had been placed at various intervals between 25 feet to 5 feet away from the pipeline, with the row of monuments located 5 feet from the pipeline being referred to as “backline monuments” as pictured below.



(Dft.’s Dem. Exh. 33, at 2.) After the October 2022 trial, Enbridge installed several

additional rows of monuments at the meander, resulting in 10 rows of lettered monuments spaced 20 feet from the adjacent lettered monument. (Duncan Decl. (dkt. #654) Fig. 3.) These monuments are designed to be tall enough to be visible to the cameras even during a so-called “500-year flood” event. (*Id.* at 4; Dkt. #601 (10/26/22 AM Trial Tr.) 134–135.)

The monuments are monitored using remote cameras to measure whether erosion has moved further towards the pipeline and could create an unsupported aerial span beneath it. Enbridge’s current monitoring and shutdown plan contains calculations as to the length of unsupported span that could be created based on the loss of certain combinations of monuments, and in particular whether a 90-foot-long unsupported span is possible. A monument is to be deemed “lost” under Enbridge’s monitoring and shutdown plan if the cameras cannot see the monument, whether it has fallen into the river due to erosion of the ground beneath it or it is actually in place but covered by flood waters.

Monument-loss events trigger different response actions under Enbridge’s plan. The loss of a single, backline monument indicates the *possibility* of a maximum span of less than 90 feet. (Trial Exh. 70 (dkt. #616-1) 4–5.) In this scenario, Enbridge would take measures, such as increasing to “near continuous” monitoring (through weather forecasts, river flow readings, remote cameras and drone flights) to determine whether any affirmatively remedial action or preventive purge-and-shutdown of the pipeline would be prudent. (*Id.*) If multiple, backline monuments were lost, Enbridge would interpret that loss under the plan as indicating the potential existence of a span greater than 90 feet. In such an event, Enbridge would take additional steps, including initiating a purge “if feasible,” to remove

petroleum products from the segment at risk within 40–50 hours,⁴ and once a purge had been completed, temporarily shutting down Line 5 -- or more accurately, shutting-in that segment of Line 5 -- using valves on either end of the Reservation. (*Id.* at 5, 10 (“The launching of the pigs and injecting nitrogen will take approximately 45 hours to complete.”); dkt. #601 (10/26/22 AM Trial Tr.) 141–43 (Deb Tetteh-Wayoe) (testifying that if multiple backline monuments are lost, Enbridge would “execute a shutdown,” even if the pipeline was still buried).) Enbridge’s existing plan also contains a restart procedure that would occur after flood waters receded, and after Enbridge’s “Pipeline Integrity Engineering Department” conducted an assessment to determine whether the pipeline may be safely restarted. (Trial Exh. 70 (dkt. #616-1) 9.)

3. Spring 2023 conditions at the meander

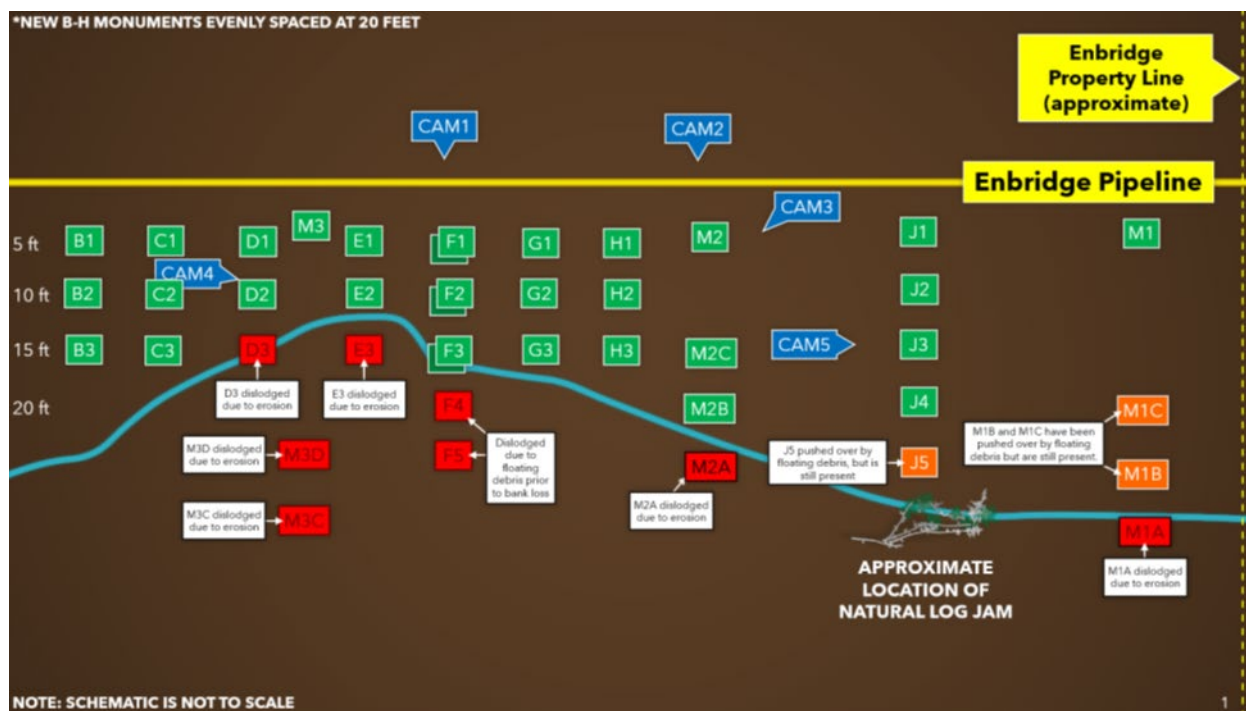
As previously mentioned, the pace of riverbank erosion at the Bad River meander significantly quickened during the spring of 2023 as compared to the previous, three years

⁴ At trial, the parties disputed whether a complete purge of oil and natural gas for this segment of Line 5 could be accomplished in that short amount of time, although mainly because of the amount of nitrogen gas and heavy equipment needed to be obtained on short notice. Enbridge’s own witnesses testified that it could take several days to obtain and mobilize the equipment and materials needed to conduct a purge of the pipeline. (Dkt. #601 (10/26/22 AM Trial Tr.) 3–4) (Deb Tetteh-Wayoe) (testifying that “three to five days maybe of prep work” needed to start the actual purge process).) However, Enbridge represents without contradiction that in light of the recent loss of riverbank due to flooding, it has taken further steps to be assured of acquiring sufficient gas and the necessary equipment to accomplish a purge on short notice. Even so, the court cannot help but find that those efforts may be more difficult to achieve in practice, particular when likely to be occurring during challenging weather conditions.

due to high levels of snow melt and precipitation.⁵ Between April 13 and May 1, 2023, there were three separate, significant flood events on the Bad River: on April 13, the river peaked at 13,800 cfs (less than a 10-year flood event); on April 21, it peaked at 10,400 cfs (less than a 5-year flood event); and on May 1, it peaked at 10,800 cfs (less than a 5-year flood event).

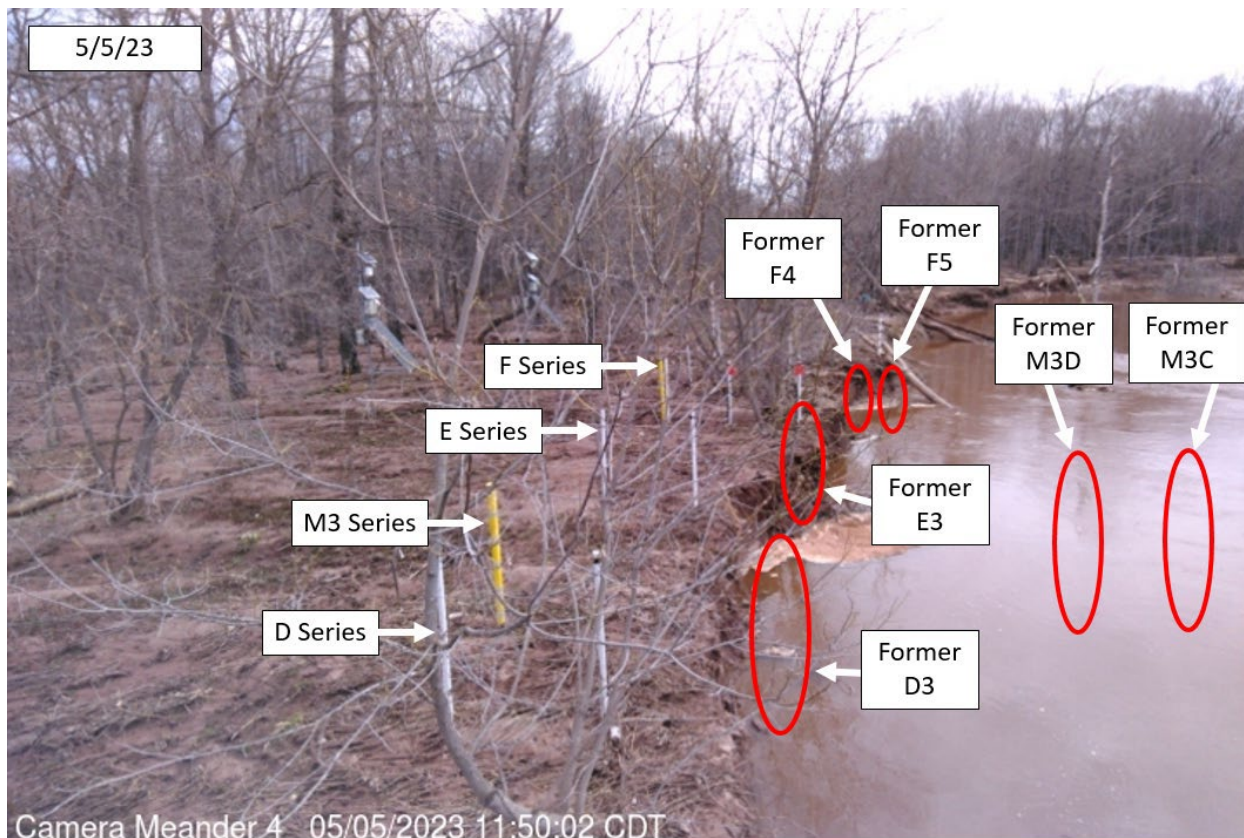
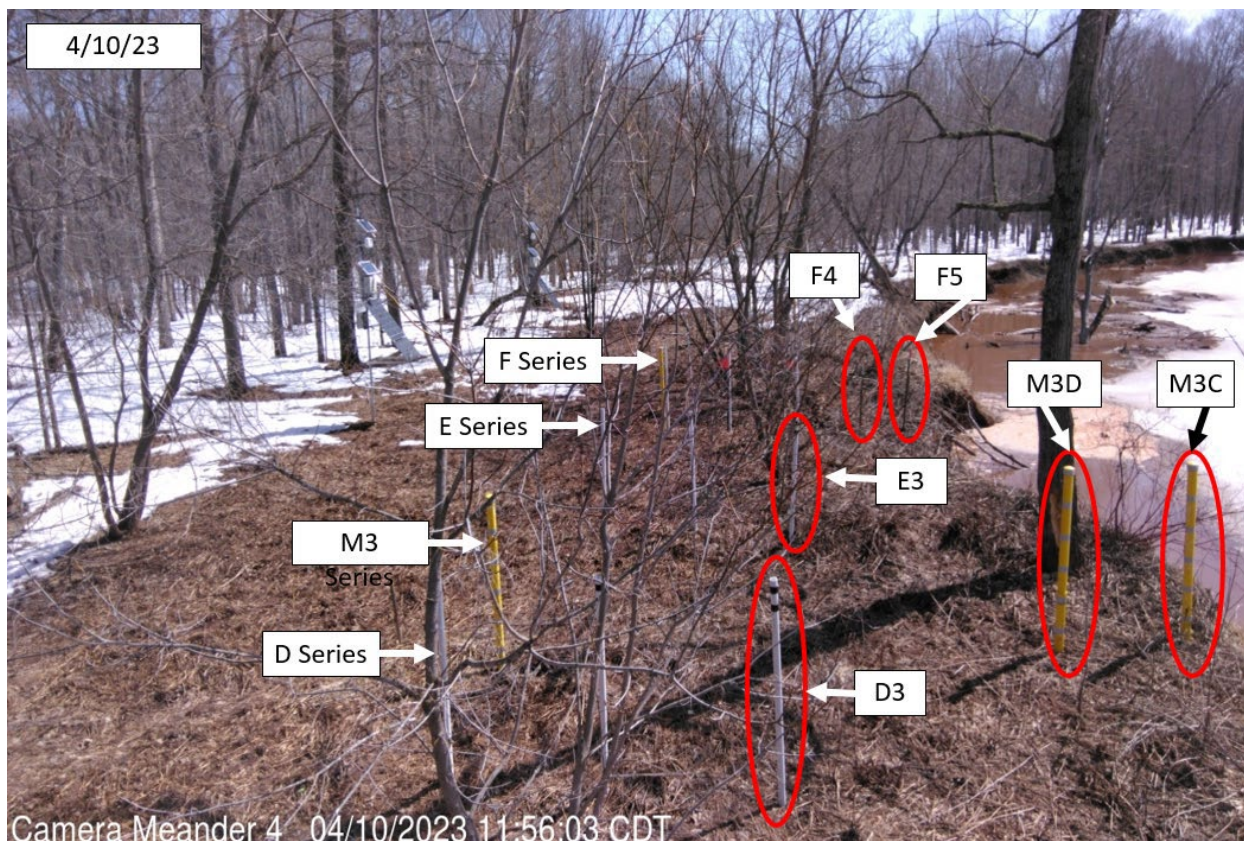
Both sides provided an update on the conditions at the meander as a result of these floods at the injunction hearing held on May 18, 2023. Line 5 is still buried under approximately 6.5 feet of soil at the meander neck and remains supported under the soil as well. However, the flooding caused significant erosion on the riverbank at and near the meander, with 3 to 4 feet of riverbank being lost in a 40-to-50-hour period, just south of the meander. In addition, at least 6 monuments were dislodged at the meander, likely due to erosion, while other monuments were lost or pushed over from floodwater or debris in the river, as depicted in the following illustration:

⁵ After unusually low, annual snowfalls for a number of years, far Northern Wisconsin and the Upper Peninsula of Michigan experienced near record amounts of snow last winter, which appears to be consistent with wider ranges of extreme conditions resulting from climate change more generally.

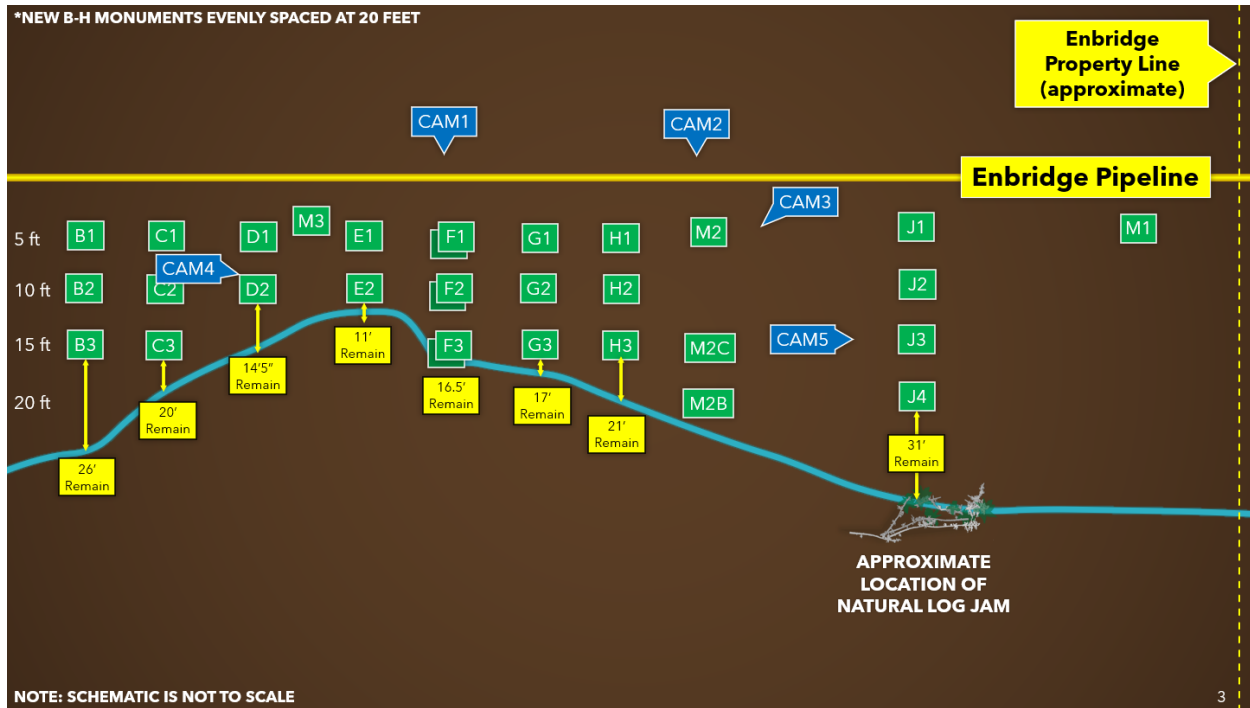


(Duncan Decl. (dkt. #654) 7, Fig. 1) (depicting the standing, lost and toppled monuments as of May 16, 2023).

As a result of the erosion, therefore, the riverbank has moved closer to the pipeline's location. For example, at the M3 monument, 34 feet of bank existed between the pipeline and river before flows increasing in the second week of April. Now only 12.5 feet remain. (Paton Decl. (dkt. #632) ¶ 5.) Thus, in one week (between April 29 and May 5), 10.5 to 11.5 feet of bank was lost there, nearly the same amount as still exists. (*Id.*) In fact, there presently exist four locations at which less than 15 feet of bank remains between the Bad River and Line 5 (*id.* ¶ 4), and at the E series of monuments, only 11 feet of bank remains. (*Id.*) The following images from one of Enbridge's cameras shows the significant bank loss at the D, M3, E and F monument series between April 10 and May 5, 2023.



(Paton Decl. (dkt. #632) 9, Fig. 4.) Finally, the following schematic illustrates current bank distances at the meander as of May 9, 2023.



(Duncan Decl. (dkt. #654) 9, Fig. 2.)

The recent erosion and monument loss at the meander has taken place in conjunction with flood levels that are significant, but far from record flows for this stretch of the Bad River. (Paton Decl. (dkt. #632) ¶ 14.c.) And although there has been no further significant erosion since May 9, 2023, the conditions at the site, including undercut banks with exposed roots, indicate that more bank erosion will continue, particularly if major rain events continue into early summer followed by so-called “sloughing.” (*Id.* ¶¶ 9, 14.) Moreover, both sides’ experts testified at the May 18 hearing that the Bad River is a “flashy” river, meaning that it can surge quickly. (Dkt. #670 (5/18/23 Tr.) 92 (Paton), 214 (Duncan).) Indeed, the Bad River historically has had a series of floods that peak during short periods of time, similar to what happened at the meander this spring, and

those peaks can occur throughout the summer and into the fall. (*Id.* at 92–94.)

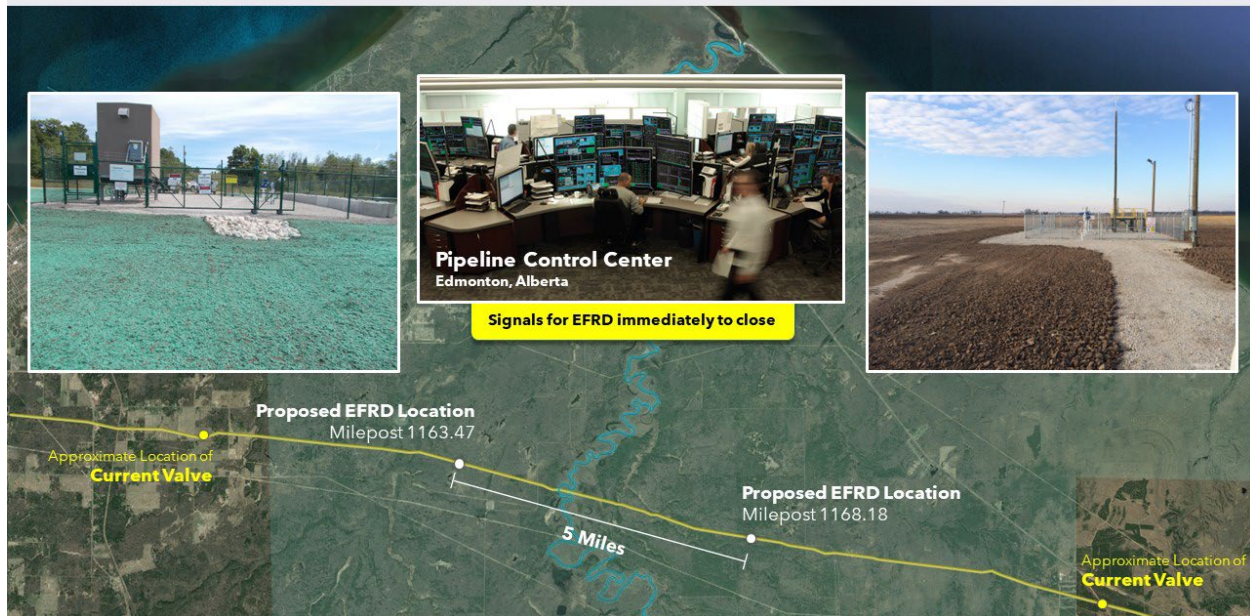
Generally, the actual erosion of the riverbank does not occur while floodwaters are peaking, but instead after the flood waters recede below the top of the bank. However, the amount of time it takes for a flood to recede varies, depending on the level of the peak and other conditions. (*Id.* at 131–33) (Paton). For example, the three floods this spring took between 70 hours to 5 days to recede, while some historic floods have receded below the level of the pipe within 40 hours. (*Id.* at 96.) Moreover, once erosion uncovers the pipe, it could result in flood waters “piping” (horizontal erosion along, rather than under, the pipeline) that could increase the rate at which the pipeline becomes unsupported once perpendicular scouring begins. (*Id.* at 114.)

During the floods this spring, Enbridge provided updates on conditions at the meander to both the Band and the Pipeline and Hazardous Materials Safety Administration (“PHMSA”). As of the time of the May 18 hearing, PHMSA had not required Enbridge to take additional actions to prevent erosion at the meander. However, in response to the flooding, Enbridge has taken preparatory activities in case a shutdown or purge is required under its monitoring and shutdown plan, including: staging purge “pigs” and other equipment at its Superior terminal; placing Enbridge’s purge contractors and vendors, including nitrogen vendors, on “standby status”; and staging matting and other equipment in Ashland to be able to prep valve site access if needed. (Teitelbaum Decl. (dkt. #643) ¶ 4.) Even so, Enbridge has not purchased nitrogen yet, meaning that it would still take approximately three days before it could execute a purge of the pipeline. (Dkt. #670 (5/18/23 Tr.) 57–58 (Teitelbaum).)

C. Enbridge's Proposed Remediation Projects and the Band's Response

At trial, Enbridge presented evidence of its remediation proposals to the Band over the last few years to limit erosion and prevent a rupture of Line 5 at the meander. For example, Enbridge proposed: (1) a rock riprap project, which would involve depositing vast quantities of boulders and gravel in the Bad River on the meander's upstream bank, using either helicopters or heavy equipment; and (2) a tree revetment project, which would involve depositing large trees by helicopter or other means upstream at the meander to mimic a naturally-occurring tree revetment already located just upriver from the meander. Enbridge has also proposed installation of emergency flow restriction devices ("EFRDs"), which would more than halve the potential volume of oil or NGLs that could spill due to a rupture of Line 5 on the Reservation. The following graphic shows the locations of the current, manual shut off valves outside the Reservation, as well as new, more advanced EFRD locations proposed by Enbridge for installation and remote control as early as this summer.

Emergency Flow Restriction Device (EFRD)



(Dft.'s Dem. Exh. 6.)

In contrast, despite highlighting how much worse the conditions at the meander have become, by the time of trial and again May, the Band has refused to approve *any* of Enbridge's remediation and prevention proposals, much less proposed even one project of its own to prevent or at least slow further erosion at the meander; nor has it asked any of its experts from Wright Water Engineers ("WWE") to provide recommendations on riverbank protection projects, other than offering suggestions and criticisms of Enbridge's proposals. (Dkt. #600 (10/25/22 AM Trial Tr.) 87 (Naomi Tillison); dkt. #599 (10/24/22 AM Trial Tr.) 129) (Jonathan Jones).)

Nevertheless, both sides' experts further testified at trial that Enbridge's remediation proposals would provide protection to the riverbank at the meander, and likely would stop (or in the case of the Band's experts, at least slow) further erosion at the meander, if only on a temporary basis. (Dkt. #599 (10/24/22 AM Trial Tr.) 141-42

(Jonathan Jones); dkt. #608 (10/26/22 PM Trial Tr.) 29, 31–36 (Hamish Weatherly).) Further, they both testified rock riprap in particular can be very effective in limiting erosion and has been installed successfully in several areas on the Reservation without significant environmental damage, including on the Bad River itself. (*Id.* at 142, 145, 151–53, 157) (Jonathan Jones).) In fairness, the Band’s experts also raised concerns with the structural integrity and feasibility of Enbridge’s various proposals (*id.* at 142; dkt. #268 (WWE Expert Rep.) 48–52; dkt. #268-3 (WWE Rep. part 4), as well as some environmental concerns, although none would even remotely approach those that will occur should a span of pipeline fail at or near its crossing at the meander. (Dkt. #606 (10/24/22 PM Trial Tr.) 5, 27–28, 39) (Jonathan Jones).)

Because the Band has been granted Clean Water Act permitting authority for all of its lands by the EPA (including for parcels outright owned by Enbridge) and because the Band owns some of the property adjacent to the Bad River (including roughly 50% of the meander riverbank most likely to erode and reach the pipeline (Trial Ex. 1449)), Enbridge is unable to perform *any* remediation project at the meander without the Band’s advanced approval and issuance of a permit. To date, however, the Band has generally placed Enbridge’s applications to perform remediation work at the meander “under consideration,” in what can only be described as slow walking possible remediation.

In response to this glaring lack of progress, Naomi Tillison, the director of the Band’s Mashkiiziibii Natural Resources Department (MNRD), explained at trial that the Band rejected some of Enbridge’s past proposals only after conducting a thorough review and analysis, applying the rigorous procedures mandated by the Band’s Water Quality

Certification and Water Quality Review Code, Wetlands and Watercourse Protection Ordinance, and administrative procedures. (Dkt. #600 (10/25/22 AM Trial Tr.) 20–21.) After rejecting some of Enbridge’s proposals, MNRD staff members also drafted documents describing the bases for the Band’s decisions, including that: the proposals were “unfeasible from an engineering perspective”; would cause “significant environmental damage” to a sensitive area, including erosion and disturbance to the habitat of the threatened wood turtle; and ultimately would require further trespass on the Band’s lands. (*Id.* at 28–29, 34, 41–44, 47–49.) Further, the Band has determined that the proposals were not acceptable because Enbridge could avoid these risks by either: (1) decommissioning the pipeline outright within the Reservation boundaries; or (2) implementing enhanced monitoring and a robust protocol for a permanent shutdown and purge of the pipeline, with clearly defined, predetermined triggers. (*Id.* at 49.)

Tellingly, at the May 18 hearing, the Band’s counsel represented that it was close to reaching a compromise on yet another proposed temporary erosion prevention plan for the meander. Specifically, in response to the recent flooding and erosion at the meander, Enbridge proposed the installation of sandbags at the meander as an alternative erosion prevention project, which purportedly could also be installed as soon as permits are approved by the Band and Army Corps of Engineers. Similar to Enbridge’s earlier, rejected riprap proposal, this proposal consists of large sandbags (as opposed to riprap) being filled with sand and lowered into place by helicopter along the upstream riverbank of the Bad

River. Enbridge submitted this proposed sandbag project to the Band on May 9, 2023.⁶ Although the Band's experts and Director Tillison expressed concerns at the May 18 hearing about the design of the plan, including the proposed vertical stacking of sandbags and instability, the Band had placed the proposal on an expedited timeline (reducing it from approximately seven months to two weeks). (Dkt. #670 (5/18/23 Tr.) 119–25 (Paton); 141–145, 157 (Tillison).) Tillison also stated at the hearing that she anticipated recommending approval of the sandbag project.

At post-hearing meetings, however, Tillison raised concerns about the project's compliance with the Band's antidegradation standards, and the Band's Natural Resources Department later recommended that Enbridge's proposed project be denied. On June 7, 2023, the Tribal Council passed a resolution denying the sandbag project. (Dkt. #681.) In a moment of candor, that resolution rejected the project not only based on environmental concerns, but also based on Line 5's ongoing trespass on some land parcels now owned outright or at least partially by the Band. (Dkt. #682-2.)

D. Enbridge's Proposed Reroute of Line 5

To address its ongoing trespass and the Band's refusal to renegotiate lapsed rights of way, Enbridge has also proposed a reroute of Line 5 around the Bad River Reservation, following a 41-mile path along the external boundaries of the Reservation. (Dkt. #611 (10/31/22 PM Trial Tr.) 5 (Julie Molina).) At the time of trial, Enbridge had: obtained

⁶ Enbridge also recently proposed a new tree revetment project that is still being considered by the Band's Natural Resources Department.

easements for all of the necessary rights-of-way for the project; hired a general contractor for the project; drafted construction schedules; and spent \$86 million purchasing materials for the project. (*Id.* at 6–8.) Enbridge also has applied for, though not yet obtained, permits needed for the project from the Wisconsin Department of Natural Resources and Army Corps of Engineers. (*Id.* at 10.)

Unsurprisingly, the Band, affected landowners along the reroute, various governmental bodies, and numerous environmental groups oppose it. The Band and others point out that the rerouted pipeline would remain within the Bad River watershed, damage numerous wetlands and cross several bodies of water protected by the Clean Water Act. Thus, in response to Enbridge’s permit applications, the Band, several other tribes, the Great Lakes Indian Fish & Wildlife Commission, National Park Service and the Environmental Protection Agency have raised formal concerns with the reroute’s impact on wetlands and waterbodies, aquatic resources, water quality, tribal resources and climate change. (*Id.* at 64–72 (Jessica Strand) (discussing the Band’s concerns with Enbridge’s reroute plan).)

E. Economic Consequences of Line 5 Shutdown

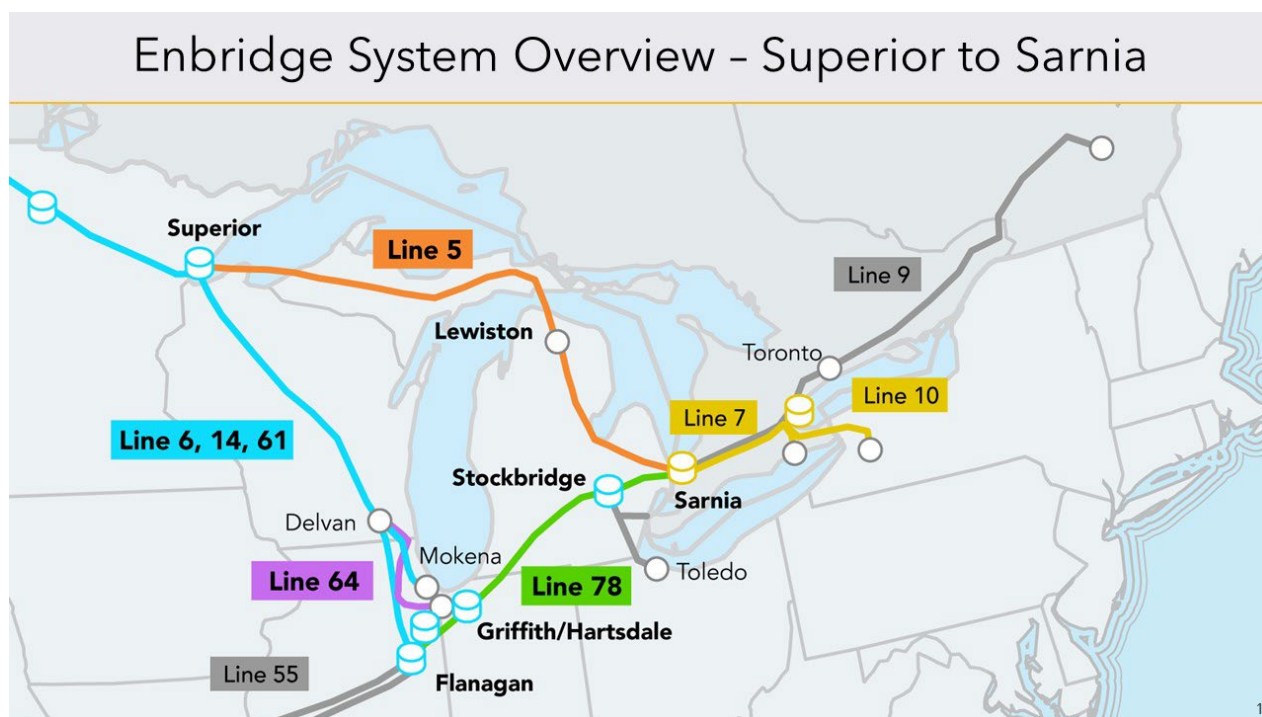
At trial, both parties offered a number of expert opinions and underlying evidence regarding the likely impact of the loss of Line 5 in delivering Western Canadian NGLs and crude oil in the upper Midwest of the United States and Eastern Canada. Supplementing information at summary judgment, both sides’ experts acknowledge that the loss of Line 5, even with time for planning its closing, will have near-term economic impacts on consumers, particularly with respect to the delivery of propane during heating season

(generally between the months of October and March) in Michigan and Ontario. Even so, the Band's experts opine that both oil and NGL markets will reach new equilibriums with substantial alacrity within a year to eighteen months. While the court agrees that the markets for oil and NGLs will reach new equilibriums within that timeframe, the likelihood of substantial, ongoing supply issues and price spikes appear much higher than the Band and its amici suggest, especially if the stoppages are only temporary and discourage the necessary capital investment to reroute delivery of Western Canada light crude oil and natural gas to the Upper Midwest and Eastern Canada.

As for impacts on the crude oil supply, the Band and its experts tell a particularly rosy story with respect to the industry's ability to find alternative routes for the quick, safe and efficient transport of some 450,000 barrels a day of crude oil from Western Canada now traveling on Line 5 by use of other pipelines in Enbridge's system along with truck, train and shipping lanes. In particular, using 2019 annualized figures, the Band's experts and attorneys purport to show by extrapolation of a report and testimony of a single Enbridge expert, Neil Earnest, that the near-term, shortfall in crude oil would be largely made up by immediately diverting crude oil down from Superior Wisconsin, on Lines 6, 14, 61 and 64, then through to Michigan using 100,000 barrels of excess capacity on Line 78. In addition, the Band suggests that another 100,000 barrels or more could be moved in a relatively short period by "reactivation of existing rail facilities" and truck transport from Superior, Wisconsin, to Toledo, Ohio and Ontario, and even use of available tankers on the St. Lawrence Seaway to Quebec. As to an additional gap in supplies to two, other Quebec refineries, the Band posits a "re-reversal" of Line 9 to supply crude oil from east to

west. With these gaps filled, the Band argues that only a gap of 86,000 barrels of crude oil per day will exist for any sustained period, something the market could accommodate with cents on the dollar increases in the price of gas.

The following graphics show Enbridge's Lakehead System and the various pipelines to which the Band refers.



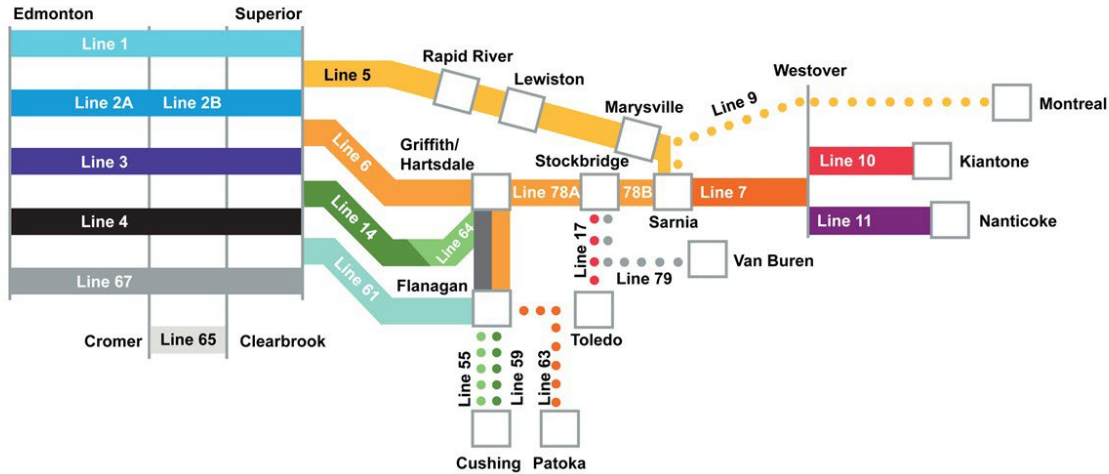
(Dft.'s Dem. Exh. 39.)

Even ignoring the supply and demand variables independent of Line 5's shutdown, which are extremely difficult to predict in the sometimes volatile, global market for oil, there are substantial reasons to question the viability of the Band's solution to a Line 5 shutdown. Specifically, several assumptions appear wildly optimistic in this scenario, beginning with the fact that uncontradicted testimony at trial indicated that Lines 6, 14, 61 and 65 are already at capacity and appear likely to bottleneck even before the planned

use of excess capacity on Line 78. Moreover, utilizing rail and truck transport from Superior would require both improved onboarding and offboarding oil transfer facilities and expensive rail cars, at a cost of tens of millions (if not hundreds of millions) of dollars, with similar costs for trucks and related transfer facilities. This scenario also unreasonably downplays market adjustments that would be required by numerous, downstream entities accustomed to easy delivery of light crude and natural gas that would be affected by a shutdown, including commodity traders, terminal developers and operators, midstream consumers and associated pipeline companies. Thus, while the court assumes the markets will eventually adjust to Enbridge's reduced role in the delivery of Western Canadian crude oil by rerouting and looking elsewhere for transport, refining and even sourcing of crude oil, it finds the Band's assurances of an easy adjustment much less credible, just as it remains skeptical of Enbridge's rosy scenarios for identifying the right moment for purging and shutting down Line 5 in the midst of flooding, much less remediating a major oil spill.

As for NGLs, even the Band concedes that a loss of the current 80,000 barrels running daily through Line 5 would be difficult to make up, particularly given the current location of fractionator facilities in Sarnia, Detroit and Toledo, as well as points further east in Canada.

Enbridge System Overview



2

(Dft.'s Dem. Exh. 39.) Again, however, the Band's experts suggest that with use of rail and trucks for alternative transport to Maryville, Michigan, and by trucks to Eastern Canada via the St. Lawrence Seaway, any shortfalls in NGLs would be limited in duration (roughly 12 to 18 months), and that average costs would be only a few cents more on the dollar for consumers in need of propane and butane for heating.

Of course, Enbridge's experts, both internal and external, as well as their downstream fractionators and consumers, do not share this confidence. As to natural gas in particular, Enbridge's experts are especially skeptical of the alternative routes offered by the Band's experts. Further, credible testimony was provided by operators of the Enbridge System that feeder lines from Superior, Wisconsin, whether on Line 6, 14 and 61, or Lines 64 and 55, lack excess capacity and will bottleneck near Chicago, making any expansion of NGLs running through Line 78 dubious at best, particularly in the short term. These experts also question whether current facilities exist for offloading NGLs at Superior to

railroad cars or trucks, and suggest that temporary transloaders could not make up the difference; nor could or would larger, permanent transloaders be built to process larger volumes faster if there was a possibility that Line 5 may come back into operation. Indeed, while appropriate portable transloaders might be set up more quickly, their processing speed is slower and may take as much as four to six months to even acquire. There was also evidence that there are simply not enough truck drivers and properly outfitted trucks currently available and capable of safely transporting natural gas, and that to the extent current railcars capable of carrying NGLs fall short, as seems more likely than not, each new, properly equipped tanker car would cost roughly \$300,000 apiece.

Finally, in response to the Band's emergency motion considered at the May 18, 2023 evidentiary hearing for an *immediate* shutdown of Line 5, Enbridge offered additional, persuasive evidence as to the economic havoc that such a sudden, unplanned and temporary shut down of the line would cause the markets for both crude oil and natural gas, especially for the current refractory facilities producing propane in the Detroit and Toledo area should the shutoff continue into traditional heating months in Michigan and Ontario. In short, the Band minimizes any long-term impact of Line 5's temporary shutdown on all but Enbridge, who after all, is in trespass, but the evidence suggests increased economic volatility in the markets for light crude, NGLs and propane/butane in the Upper Midwest and Eastern Canada.

F. The Parties' Posttrial Monitoring and Shutdown Proposals

In its November 28, 2022 posttrial opinion, the court ordered the Band and Enbridge to "meet and confer regarding: (1) the installation of additional emergency flow

restriction devices (EFRDs) on Line 5 on the Reservation; (2) an appropriate shutdown and purge protocol should conditions worsen at the meander; and (3) other reasonable remediation projects that could inhibit further erosion at Line 5.” (Dkt. #612, at 16.) The parties responded by notifying the court that they held two, meet-and-confer sessions that included Band representatives, Enbridge’s internal subject matter experts and the Band’s outside subject matter experts on the topics specified by the court, and made “substantial progress” on the topic of EFRDs and “anticipate that they will continue to make good-faith efforts toward accomplishing expeditious EFRD installation on the Reservation.” (Dkt. #614, at 2.) At the May 18, 2023 hearing, Director Tillison further elaborated that the parties had met approximately 8 times since December to discuss potential revetment and erosion prevention at the meander, including modifications shared by WWE that might be incorporated into Enbridge’s most recent tree revetment proposal of May 15. (Dkt. #670 at 165–68, 170–72.) However, as has been the case for years, the parties were unable to reach agreement on any revetment or shutdown and purge protocol. Instead, each side submitted its own proposed protocol for the court’s consideration.

1. The Band’s post-trial proposal

The Band’s December 2022 protocol would require the shutdown and purge of Line 5 on the Bad River Reservation when either of two independent triggers are met: (1) the Bad River flows at the USGS gage upstream of the Bad River meander reach 33,000 cfs, which is a “200-year flood” event; or (2) the river advances to within 15 feet of the pipeline, which is tied to the amount of erosion that could occur at the meander during a “500-year event,” such as the flood that occurred in July 2016. (Dkt. #617, at 3.) The Band’s

proposal would also require that Enbridge: (1) the install four, additional monuments to facilitate identification of the 15-foot threshold along the length of the meander neck; (2) purge the pipeline in conjunction with a shutdown; and (3) take preparatory steps to shorten the time needed to accomplish a purge. (*Id.* at 3–4.) The Band’s proposal would allow for a restart of the pipeline when Enbridge can confirm that there is no risk to pipeline integrity; and if: (1) more than 15 feet of bank remains after severe flows have subsided; or (2) less than 15 feet of bank remains during seasonal conditions that present lower risks. (*Id.* at 4.) Finally, to ensure that the pipeline is not restarted imprudently or prematurely, the Band’s proposal provides that any restart be done either with the concurrence of the Band or the approval of the court. (*Id.*)

2. Enbridge’s post-trial proposal

As with its current protocols, Enbridge’s December 2022 proposed plan is based on protecting against the threat of a critical aerial span. However, the new plan differs from its current plan in four aspects: (1) reconfiguring the monument grid to accommodate more conservative monument loss scenarios; (2) adding a “purge readiness” action, which would require Enbridge to stage purging materials and equipment into readiness to reduce the lead time necessary to begin the actual purge; (3) revising purge-and-shutdown procedures by: (a) reconfiguring the backline monuments for an even, 20-foot spacing between each backline monument and reducing the monument loss requirement, lowering the purge-and-shutdown trigger based on evidence of a possible unsupported 60-foot aerial span, rather than 90-foot; and (b) adding a high-flow element, meaning that a shutdown does

not occur unless the Bad River's flow reaches at least 20,000 cfs; and (4) adding a purge-and-shutdown trigger in the event the line is restarted after being shutdown. (Dkt. #616-2.)

OPINION

I. The Band's Nuisance Claim

Under federal common law, a public nuisance is a substantial and unreasonable interference with a right common to the general public. Restatement (Second) of Torts § 821B. "A court may grant equitable relief to abate a public nuisance that is occurring or to stop a threatened nuisance from arising." *Michigan v. U.S. Army Corps of Engineers*, 667 F.3d 765, 781 (7th Cir. 2011). Where, as in this case, the alleged nuisance is not presently occurring, a plaintiff must generally prove that: (1) the activity or circumstances complained of would be a substantial and unreasonable interference with a public right; and (2) the activity is "imminent." *Id.*

As discussed in the court's previous posttrial opinion, the Band established at trial that a rupture of Line 5 at the Bad River meander before a successful purge could be completed would cause significant environmental damage to the Bad River watershed and Lake Superior. In fact, if Line 5 were not purged in time, a rupture at the meander could result in a release of as much as 20,000 barrels (840,000 gallons) or more of crude oil, as well as additional NGLs, into the Bad River. (Dkt. #608 (10/26/22 PM Trial Tr.) 65, 85–86 (Trent Wetmore).) Such a discharge would unquestionably be a substantial and unreasonable interference with the Band's and the public's rights.

As it was at trial, the more complicated question remains whether the Band has shown that this substantial, irreparable harm is “imminent.” At the May 18 hearing and in previous opinions in this case, the court focused on that term, evaluating whether the evidence and conditions at the Bad River meander showed that a rupture of Line 5 was likely to occur in the near future, such that an immediate shutdown of the pipeline (or some other form of injunctive relief) was warranted. However, for purposes of establishing a threat of public nuisance, “imminent” does not necessarily mean that the harm will certainly occur within a specific timeframe. Instead, the Seventh Circuit has explained that “[t]here is no meaningful legal difference for purposes of the ultimate resolution of a public nuisance claim between a threatened nuisance that is ‘imminent’ and one that is ‘immediate,’ ‘significant,’ ‘real,’ an ‘unreasonable risk,’ or anything similar.” *Asian Carp I*, 667 F.3d at 782. *Cf. Price v. U.S. Navy*, 39 F.3d 1011, 1019 (9th Cir. 1994) (“A finding of ‘imminency’ does not require a showing that actual harm will occur immediately so long as the risk of threatened harm is present.”). Thus, the central question in evaluating the merits of the Band’s claim for relief under public nuisance doctrine is “whether the harm that the [plaintiffs] have described is sufficiently close to occurring that the courts should order the defendants to take some new action that will be effective to abate the public nuisance.” *Id.* at 781.

Of course, in evaluating whether there is a threat of “imminent” harm, courts must also consider “the magnitude of the potential harm,” including whether the risk of harm will increase as time goes on and whether the harm could be eliminated after it occurs. *Id.* at 785–86 (“The fact that it would be impossible to un-ring the bell in this case is another

reason to be more open to a conclusion that the threat is real.”); *see also Van De Sande v. Van De Sande*, 431 F.3d 567, 570 (7th Cir. 2005) (“The gravity of a risk involves not only the probability of harm, but also the magnitude of the harm if the probability materializes.”). The Seventh Circuit further counsels that the “nature of the threat” is relevant to the imminence analysis, and “ecological harm suggests that a broader perspective on the problem might be necessary.” *Asian Carp I*, 667 F.3d at 785.

Under these standards, and in light of additional erosion occurring this spring, the court finds that a Line 5 rupture at the meander is now “sufficiently close to occurring” such that Enbridge must take new actions to abate the nuisance. First, the nature of the potential harm—catastrophic environmental damage to the Bad River and Lake Superior watersheds—is a significant factor. If a large oil spill occurred, it would be impossible to undo the damage with remediation efforts, an injunction or monetary penalties.

Second, evidence presented at trial, and particularly at the May 18, 2023, posttrial hearing, establishes that the Bad River itself can be unpredictable, despite Enbridge’s arguments to the contrary. Historical and recent data show that it is a “flashy” river, prone to seasonal flooding that may peak and recede quickly. A dramatic example is the 2016 floods, during which the flow of the Bad River increased from approximately 600 cfs to a peak flow of 40,000 cfs in only 14 hours. Thus, sometimes seasonal flooding causes little to no bank erosion, while at other times the rise and fall of floodwaters can cause dramatic erosion within a few days. In light of the unpredictability of the Bad River and recent events, the court is simply no longer comfortable relying on Enbridge or its experts’ attempts to quantify the likelihood of a risk of an exposure or pipeline rupture at the

meander. For example, in April 2022, Enbridge's expert opined that there was a less than one percent chance of the pipeline being exposed within a year. (Weatherly Rep. (dkt. #276) 5.) Now, one year later, he quantifies that risk at five to ten percent. (Weatherly Decl. (dkt. #642, ¶ 8.) These latest percentages are hardly comforting in light of Weatherly's and other experts' testimony at trial that the pipeline could be exposed in a single, significant flooding event; and in particular, that an unsupported span of 65 feet or greater may quickly become more than 100 feet, depending on the conditions at the time.

Third, the court is not convinced that Enbridge's current monitoring and shutdown protocol is sufficiently conservative, when considering that the preparatory work required for Enbridge to even begin a 40-hour purge can itself take three to five days. Even if the court assumes that Enbridge would activate its shutdown and purge plan as soon as two backline monuments are lost, the river could peak and recede more quickly than it did this spring, resulting in "sloughing" that exposes Line 5 to an unsupported span close to 60 or even 100 feet before Enbridge is able to complete its preparatory work, much less complete the actual purge. The court is particularly concerned that Enbridge's plan does not account for inevitable delays that could occur due to weather conditions, supply and equipment problems and human error.

For these reasons, and other evidence in the record regarding the environmental devastation that would result from a pipeline rupture and the recent, precarious conditions at the meander, the court concludes that if riverbank erosion continues at the meander, a substantial and unreasonable interference with a public right is imminent, if not certain to

occur, at least if Enbridge fails to make prompt, extraordinary efforts to prevent a Line 5 rupture before a purge can be effectuated.

The next question is what form of injunctive relief is now necessary to abate this nuisance. In determining whether to impose permanent injunctive relief, the court generally must consider whether: (1) an injunction is necessary to prevent irreparable harm; (2) remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) the balance of hardships between the plaintiff and defendant; and (4) the public interest would not be disserved by a permanent injunction. *Liebhart v. SPX Corp.*, 998 F.3d 772, 779 (7th Cir. 2021). Of course, “once a court finds a defendant liable for creating a risk of imminent and substantial danger, it will usually be the case that injunctive relief is warranted.” *LAJIM, LLC v. Gen Elec. Co.*, 917 F.3d 933, 944 (7th Cir. 2019) (citing *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 545 (1987) (“Environmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable. . . . [T]herefore, the balance of harms will usually favor the issuance of an injunction to protect the environment.”)).

As discussed, the court has already concluded that some form of injunctive relief has become necessary to prevent irreparable harm and that monetary damages would be inadequate. The balance of hardships and public interest are more complicated by the Band’s own failure to engage sooner and in good faith with Enbridge on a potential remediation plan at the meander. In particular, the court has expressed frustration at the Band’s refusal to authorize Enbridge to install state-of-the-art EFRDs within the Reservation, which would more than halve any potential oil or NGLs discharged at the

meander,⁷ or engage meaningfully in collaborative discussions with Enbridge on the most feasible bank stabilization project that the Band would accept. *See Asian Carp I*, 667 F.3d at 794 (reasonableness of the parties' efforts are relevant to the nuisance analysis, as well as the appropriateness of immediate injunctive relief). Also relevant to equities are the significant economic and public policy implications that would arise from a shutdown of Line 5 as already outlined above.⁸

However, these concerns can be mitigated somewhat by issuing an injunction that does not necessarily require an immediate, indefinite or permanent shutdown of Line 5. Instead, the court concludes that a more robust and specific monitoring, shutdown and purge protocol, if successfully implemented, would significantly reduce the threat of an imminent oil or NGL spill in the near term. While these protocols may yet require a shutdown of Line 5 even this year given the erosion that has already occurred at the meander this spring, such a shutdown may only be necessary temporarily, until seasonal conditions have again stabilized. In this way, at least Enbridge might continue operations of the pipeline during the more stable months of the year, allowing a sufficient period of

⁷ As noted, the parties' recent filings and testimony at the May 18, 2023 hearing suggest that no progress is likely to be made in this regard, or in shoring up the bank at the Bad River meander, at least in part because the Band's principal goal is to close Line 5, not allow it to limp along for the benefit of Enbridge's bottom line. Moreover, because Indian Tribes are exempt from providing judicial review of approval or denial of Clean Water Act permits, 40 C.F.R. § 123.30, Enbridge appears to have no judicial or administrative recourse to challenge the Band's permit denials. At most, Enbridge could potentially appeal to the EPA to withdraw the Band's permitting authority, though the court acknowledges that such a request would likely be unsuccessful.

⁸ As discussed elsewhere, Enbridge's individual hardship carries less weight in light of its status as an ongoing trespasser on some of the Band's allotted parcels.

time for markets to adjust without shortages or extreme price swings, for and Line 5 to be successfully decommissioned on the Reservation with fewer significant market disruptions.

After reviewing the parties' post-trial shutdown and purge proposals, the court concludes that Enbridge's December 2022 monitoring and shutdown plan is a reasonable and effective method to abate the public nuisance at the meander, with some relatively minor modifications. Enbridge's proposal was developed by its pipeline integrity and safety engineers, who have extensive experience in developing such plans and include an operational document, along with a detailed declaration from a company pipeline engineer involved in its creation. (Dkt. #615; dkt. #616-2.) Of particular import to the court, and in contrast to its current plan, the December 2022 plan requires Enbridge to take specific steps to prepare for a shutdown and purge, including actually obtaining nitrogen and mobilizing crews and equipment, in response to any meaningful increase in threatening conditions at the meander. Hopefully, these preparatory activities will reduce the time it will take Enbridge to start a purge of the pipeline, if and when necessary.

Consistent with the existing December 2022 plan, the court's modifications relate to the flow levels necessary to trigger certain actions by Enbridge. In particular, the plan as written requires flow levels of 17,000 cfs or higher, as well as monument loss, to trigger purge preparedness or a purge itself. The court notes that those flow levels are significantly higher than the three, peak flows during flooding this spring, which resulted in substantial, additional erosion at the meander. In addition, at levels over 8,000 or even 6,000 cfs, it will be increasingly difficult to discern what is happening to the bank, or pipeline, as the flood waters would then obscure any view of the neck of the meander, as well as and the

pipeline's condition. For these reasons, the court has reduced the flow thresholds of Enbridge's plan. The court's modifications are highlighted in blue in the tables below.

Table 1 Enbridge is to monitor the meander using multiple methods (page 4)

Method	Frequency
Site ground inspections	Annually
Aerial patrol	Intervals not exceeding 3 weeks, but no less than 26 times per year
Drone inspection	As triggered by flood events
Remote cameras*	Real-time plus historical screen captures
USGS gauges	Real-time at Odanah (~6 miles from meander) performed by Geohazard Consultant
Precipitation forecasts (NOAA and National Weather Service)	Daily

Table 2 PI Engineering Representative is to review images from the remote cameras installed at the meander per the following frequency (page 4)

Flow Condition	Frequency of Image Review
<4000 cfs	Weekly
4000 cfs –10,500 cfs	Daily
> 10,500 cfs OR Flood warning issued by NWS	Every 3 hours initially but increasing in frequency to near-continuously if the bank nearest the pipeline demonstrates significant erosion progressing toward the pipeline
Recession to <4000 cfs	Every 3 hours for two weeks after the flow conditions have receded to <4000 cfs

Table 3 Scenario 1: Purge Preparedness, including movement of nitrogen, personnel and equipment on site (page 6)

Scenario	Event
Monument Loss	Loss of 2 adjacent monuments 10 feet from pipeline, OR
	Loss of the 10' and 15' monuments in the same line in a 48-hour period, OR
	Loss of the 10' and 5' monuments in the same line in a 48-hour period
AND	
Flow	Actual flow event \geq 10,500 cfs OR
	Forecasted flow event \geq 15,000 cfs

Table 4 Scenario 2: Purge and Temporary Shutdown (page 6)

Scenario	Event
Monument Loss	Loss of 2 adjacent backline monuments (60 feet between standing monuments)
	Loss of 2 nonadjacent backline monuments in a 48-hour period
AND	
Flow	Actual flow event \geq 10,500 cfs OR
	Forecasted flow event \geq 15,000 cfs

In requiring Enbridge to implement its December 2022 plan with those modifications, the court acknowledges that the current plan has been approved by the Pipeline and Hazardous Materials Safety Administration (“PHMSA”), and that PHMSA is aware of the current conditions at the meander. The court also acknowledges that PHMSA might require Enbridge to take additional action to prevent erosion or a rupture of Line 5 at the meander, including shutting down the pipeline, though it has not yet done so. As the court explained at summary judgment, however, PHMSA’s authority to manage pipeline safety does not displace this court’s authority to resolve the Band’s federal public nuisance claim; nor does it deprive the court of authority to enter injunctive relief necessary to abate a public nuisance. (*See* dkt. #360, at 49–52.) Accordingly, Enbridge will be directed to adopt and implement the December 2022 monitoring and shutdown plan in full, *including* the court’s modifications set forth above, within 21 days.

II. Remedy for Trespass

This brings the court full circle to what has always been the driver of this lawsuit: the Band’s determination to close Line 5’s 645 miles of pipe permanently, based on relatively few parcels within its control for which long-standing rights of way have expired,

versus Enbridge's desire to get the remaining life out of the now 70-year-old pipe on Line 5. Of course, the use of trespass on a few parcels to drive the effective closure of all Line 5 has always been about a tail wagging a much larger dog. Said less colloquially, the Band's use of limited trespasses following 60 years of lawful use of those parcels seems particularly ill-suited to resolve what are much larger public policy issues as to the appropriate life of oil and gas pipelines that involve not only the sovereign rights of the Band, but the rights of multiple states and international relations between the United States and Canada. Nevertheless, as the court concluded at summary judgment, Enbridge has and continues to commit conscious and willful trespass by operating Line 5 on the Band's 12, former-allotment parcels for which 20-year rights of way expired in June 2013, making an appropriate remedy necessary to address the violation of the Band's sovereign rights and to take away what otherwise would be a strong incentive for Enbridge to act in the future exactly as it has here. (Dkt. #360, at 31, 36.) Left for trial was the amount of damages to which the Band is entitled, and the question whether shutting down the operation of Line 5 is appropriate to remedy Enbridge's ongoing trespass on the 12 parcels.

The evidence presented at trial on these issues was obviously impacted by the court's pretrial rulings that: (1) an immediate, permanent shutdown of Line 5 would not be equitable given the impacts outlined above; (2) Enbridge's trespass could not continue indefinitely; and (3) the Band was not entitled to an award of all of Enbridge's profits earned during the period of trespass by operation of the pipeline as a whole. (Dkt. #512, at 2-3.) Thus, the court stated that it would determine an appropriate remedy based on evidence regarding economic consequences of a Line 5 closure, Enbridge's proposed reroute

of Line 5, and the pro-rata share of Enbridge's profits from the operation of the pipeline during the relevant time period to the extent reasonably attributable to the 12, former-allotment parcels on which Enbridge's rights of way had expired. (*Id.* (citing *Davilla v. Enable Midstream Partners, L.P.*, No. CIV-15-1262-M, 2016 WL 6952356, at *3 (W.D. Okla. Nov. 28, 2016) (where pipeline found in trespass after expiration of BIA easements, Indian landowners entitled under federal common law "to an accounting of defendants' profits from the operation of their pipeline that is attributable to the portion of the pipeline that has been located on their property").) Accordingly, the court will first address a monetary award before turning to the question of injunctive relief.

A. Profits-based Award

An appropriate profits-based award must account for the net profit attributable to Enbridge's intentional trespass. *See* Restatement on Restitution § 51(4). Profit includes "any form of use value, proceeds, or consequently gains that is identifiable and measurable and not unduly remote." *Id.* § 51(5)(a). The Band has the initial burden of producing evidence "permitting at least a reasonable approximation of the amount of [Enbridge's] wrongful gain," while any "residual risk of uncertainty in calculating net profit" falls on Enbridge. *Id.* § 51(5)(d) (appropriate remedy for unjust enrichment is "amount of profit wrongfully obtained").

In determining the appropriate award, there are three factors that must be resolved by the court: (1) the relevant time period for the calculation; (2) Enbridge's net profits for Line 5; (3) the amount of those net profits attributable to Enbridge's trespass on lands

owned by the Band; and (4) whether Enbridge's profits should be further disgorged based on cost savings resulting from its delay in rerouting the pipeline sooner.

1. Relevant timeframe for disgorgement

Enbridge has been trespassing on the Band's 12 former-allotment parcels since 2013 when its right-of-way easements expired. However, the parties engaged in subsequent, off-and-on negotiations for possible renewal of those easements on new terms until January 2017, when the Tribal Council passed a resolution stating definitively that it would *not* renew easements for the pipeline. Even then, the Band did not formally accuse Enbridge of trespass by its continued operation of Line 5 until filing this lawsuit in July 2019. In light of the Band's delay in asserting its rights, Enbridge argues that the Band's award for profits-based relief should be limited by: (1) the applicable statute of limitations; and (2) the equitable defenses of estoppel and laches. With respect to the statute of limitations, Enbridge argues that Wisconsin's three-year statute of limitations for intentional torts, Wis. Stat. § 893.57, applies to the Band's trespass claim. However, that claim is brought under federal common law, and the Supreme Court has held that it would be "inconsistent with federal policy" to apply a state limitations period to a federal common-law action brought by an Indian tribe to enforce property rights. *Oneida County, N.Y. v. Oneida Indian Nation of N.Y.*, 470 U.S. 226, 241 (1985). Therefore, the Band's damages claim is not limited by Wisconsin's statute of limitations.

As for equitable considerations, this court already concluded at summary judgment that neither the Band's trespass claim nor request for equitable relief was barred by the doctrine of laches or any other equitable doctrine. (SJ Op. (dkt. #360) 33 ("The court is

not persuaded that the doctrines of laches bars any of the Band's claims in this case.”.)
However, the court left open the question whether the Band's *damages* might be limited by equitable considerations and permitted the parties to present evidence at trial on that question.

At trial, Enbridge presented no evidence that would support an equitable estoppel defense against the Band, such as a specific “misrepresentation” by the Band on which Enbridge relied. *See Olson v. Bemis Co.*, 800 F.3d 296, 306 (7th Cir. 2015). However, Enbridge's laches defense has more traction. To succeed on a laches defense, Enbridge must show: (1) a lack of diligence by the Band; and (2) prejudice to Enbridge. *Lingenfelter v. Keystone Consol. Indus., Inc.*, 691 F.2d 339, 340 (7th Cir. 1982).

The evidence at trial established that Enbridge was aware in 2013 that its easements had expired and that, instead of renewing them, the Band had requested detailed environmental, pipeline safety and emergency response information from Enbridge about its pipelines generally, including records of spills and regulatory violations. The Band also questioned Enbridge about its pipeline operations and maintenance protocols. On the other hand, after the easements expired on the 12 former-allotment parcels, the Band communicated with Enbridge about potentially renewing the easements and did not state affirmatively that it would not renew the easements under any circumstances until the Council issued its January 2017 Resolution.

Ultimately, the court concludes that this evidence does not excuse Enbridge's intentional trespass. Enbridge knew that it was operating its pipeline on expired easements, contrary to federal law. Enbridge also knew that it lacked valid easements over the parcels,

and it claims to have been in active negotiations for their renewal. Plus, Enbridge knew or should have known that federal law required both the Band's and BIA's approval for continued use of the pipeline on those properties. Thus, Enbridge had no justified expectations in continuing to operate the pipeline over the allotment parcels without paying compensation, and it was not prejudiced by the Band's failure to enforce its rights until it passed the 2017 Resolution or filed this lawsuit.⁹

2. Enbridge's net profits from Line 5

The next task is to calculate Enbridge's net profits from Line 5 during the relevant time period. Not surprisingly, Enbridge does not maintain a profit-and-loss statement for Line 5 specifically; instead, it tracks profits and losses on Enbridge's Lakehead Pipeline System as a whole. Accordingly, the court finds that Enbridge's FERC Form 6, which is filed on a quarterly and annual basis with the Federal Energy Regulatory Commission, is the best evidence of Enbridge's actual profits for the Lakehead System, as the form identifies Enbridge's pre-tax income, tax rates, and depreciation for the Lakehead System.¹⁰ Thus, the court starts with the information on Form 6 as a baseline for calculating Enbridge's profits on Line 5.

At trial, however, the Band presented evidence showing that 70 to 80 percent of the

⁹ Even if the court had found some sort of equitable "repose" while the parties negotiated possible renewals of these easements, it would never have amounted to the Band relinquishing its rights to challenge Enbridge's ongoing trespass. For the years when the rights of way expired between 2013 and January 2017, the appropriate amount of damages would at minimum be the rental value of the properties identified in the expert reports of Ed Steigerwaldt. (Dkt. ##502-513.)

¹⁰ Enbridge's expert calculated after-tax income using tax rates supplied by Enbridge, but the court agrees with the Band's expert that the tax rates in the FERC Form 6 are the best evidence of the profits and tax rates paid by Enbridge. (Leistra-Jones Rep. (dkt. #573) 17.)

ongoing depreciation for the Lakehead System listed on Form 6 is *not* associated in any way with Line 5, which had been fully depreciated some time ago. Rather, most depreciation still being claimed by Enbridge is attributable to more recent capital projects on other lines in its Lakehead System. (Dkt. #602 (10/27/22 AM Trial Tr.) 109–112 (Olive); Dkt. #609 (10/27/22 PM Trial Tr.) 7 (Leistra-Jones).) Moreover, Enbridge submitted no contrary evidence suggesting that anything beyond 20 to 25 percent of its depreciation for the Lakehead System between 2013 and 2022 could be attributable to Line 5. Thus, the court will only subtract 22 percent of the depreciation total from Enbridge’s after-tax income to determine net income for the Lakehead System, resulting in the following calculations:

Year	Lakehead System after-tax net income	Depreciation on Form 6	22% of Depreciation	Total after-tax income, minus 22% depreciation for Lakehead System
2013 (June—Dec)	188,630,110	110,071,474	24,215,724	164,414,386
2014	644,239,337	246,636,627	54,260,058	589,979,279
2015	812,212,070	308,196,933	67,803,325	744,408,745
2016	1,001,729,167	403,064,509	88,674,192	913,054,975
2017	918,867,866	414,465,861	91,182,489	827,685,377
2018	993,123,225	424,847,756	93,466,506	899,656,719
2019	1,080,284,126	426,317,501	93,789,850	986,494,276
2020	1,007,956,581	431,749,637	94,984,920	912,971,661
2021	1,221,885,391	469,090,949	103,200,009	1,118,685,382

2022 Q1-Q2	716,896,904	288,666,628	63,506,658	653,390,246
Total	8,585,824,777	3,523,107,875	775,083,732	7,810,795,045

To determine the net income from the Lakehead System attributable to Line 5, the parties propose using a “barrel-miles” analysis, which is the barrels of petroleum product transported via the pipeline times the number of miles the barrels traveled on Line 5 for each year. That amount, which is reflected by the “allocation factor” for light crude (“LGT”) and NGLs in the table below¹¹ is multiplied by the after-tax net income (minus 22% depreciation) from the Lakehead System to determine the after-tax net income attributable to Line 5. The amount of the Line 5 after-tax net income attributable to the 12 parcels at issue is then calculated by multiplying the total Line 5 after-tax net income by 0.0036, which reflects that the 12 parcels (2.33 miles) were, on average, 0.36 percent of Line 5’s 642 miles during the relevant years. That figure is then multiplied by the Band’s average weighted ownership share in the 12 parcels for each year,¹² to determine the total amount owed to the Band in net income for Line 5:

Year	Allocation Factor (%)		Line 5 after-tax net income minus 22% depreciation			Pro-rata income for 2.33 miles of Line 5 (0.36%)	Band Weighted Average Share of 12 Parcels (%)	Band’s Share of Line 5 Income
	LGT	NGL	LGT	NGL	Total			
2013	18.8	3.3	30,909,905	5,425,675	36,335,580	130,808	58.412	76,408
2014	17.7	3.1	104,426,332	12,325,684	116,752,016	420,307	58.727	246,834

¹¹ (Olive Rep. (Dkt. #577) 19–21.)

¹² (Dfts.’ Trial Exh. 1456 (shows Band’s percentage of ownership in each parcel each year).)

2015	15.0	2.8	111,661,312	20,843,444	132,504,756	477,017	58.727	280,138
2016	13.3	2.6	121,436,312	23,739,429	145,175,741	522,633	59.938	313,256
2017	12.4	2.4	102,632,987	19,864,449	122,497,436	440,991	76.302	336,485
2018	12.3	2.3	110,657,776	20,692,105	131,349,881	472,860	76.336	360,962
2019	12.7	2.3	125,284,773	22,689,368	147,974,141	532,707	76.336	406,647
2020	10.9	2.2	99,513,911	20,085,377	119,599,288	430,557	76.717	330,310
2021	11.8	2.0	132,004,875	22,373,708	154,378,583	555,763	76.721	426,387
2022 Q1-Q2	12.1	1.9	79,060,220	12,414,415	91,474,635	329,308	76.721	252,648
Total	--	--	--	--	1,119,042,057		--	3,030,075

As reflected above, therefore, the Band’s total share of Line 5 income from January 2013 to the second quarter of 2022 is \$3,030,075, although that amount must still be converted to net present value. Enbridge’s expert proposed using a 30-year treasury rate to reflect the Band’s “time value of money.” However, the purpose of this remedy is *disgorgement* of the benefit to Enbridge derived from its wrongdoing, not the value to the Band had it been awarded Enbridge’s profits sooner. Thus, the court agrees with the Band’s expert, Leistra-Jones, that the weighted average cost of capital, listed on Enbridge’s FERC Form 6, is far and away the more appropriate measure of the present value of net income owed to the Band. Indeed, Enbridge’s own expert agreed that the weighted average cost of capital can serve as an estimate for the time value of money of a corporation. (Dkt. #602 (10/27/22 AM Train Tr.) 122 (Olive).) In particular, Leistra-Jones used the weighted average cost of capital to determine the appropriate discount rates for converting the net

income to present value. (Leistra-Jones Rep. (dkt. #573) 63, Table D-3.) Applying those discount rates to the numbers above results in the following net profits owed to the Band through the second quarter of 2022:

Year	Band's Share of Line 5 Income	Discount Factor	Band's Share of Line 5 Income Present Day Value (2022)
2013 (June—Dec)	76,408	2.172	165,958
2014	246,834	2.006	495,149
2015	280,138	1.863	521,897
2016	313,256	1.709	535,355
2017	336,485	1.578	530,973
2018	360,962	1.434	517,620
2019	406,647	1.309	532,301
2020	330,310	1.185	391,417
2021	426,387	1.079	460,072
2022 Q1-Q2	252,648	1.030	260,227
Total	3,030,075	--	4,410,969

Based on the above calculations, Enbridge must disgorge \$4,410,969 to the Band to account for past-profits attributed to its operation of Line 5 on the 12 allotment parcels for January 2013 through the second quarter of 2022. In addition, Enbridge must continue to disgorge profits to the Band on a yearly basis until Line 5 is removed from the 12 allotment parcels under the same formula set forth above. Specifically, Enbridge must: (1)

calculate after-tax income (based on FERC Form 6 tax rates) for the Lakehead System, minus 22 percent of the depreciation taken for the Lakehead System; (2) multiply that amount by the appropriate allocation factors for Line 5; (3) calculate the pro-rate amount attributable to the 2.33 miles of Line 5 running on the allotment parcels; (4) divide that amount by the Band's percentage of ownership in the 2.33 miles; and (5) convert the total amount to net present value using Enbridge's weighted average cost of capital.

The Band further argues that additional profits should be disgorged by Enbridge based on the value of effectively delaying a reroute, estimated to cost \$500 million. Enbridge argues that cost-avoidance is an improper measure of profits, but the court disagrees. In evaluating a defendant's unjust enrichment that should be disgorged to a plaintiff, "there is no single way to measure the benefit conferred on a defendant." *Epic Sys. Corp. v. Tata Consultancy Servs. Ltd.*, 980 F.3d 1117, 1130 (7th Cir. 2020). "The important considerations are that a judge or jury calculates the benefit to the defendant—not the loss to the plaintiff—and that this calculation is done with reasonable certainty." *Id.* If the benefit to the defendant can be calculated with reasonable certainty, "negative unjust enrichment,' consisting of the unjust avoidance of a loss," can be an appropriate measure of a defendant's unjust enrichment. *Reich v. Cont'l Cas. Co.*, 33 F.3d 754, 756 (7th Cir. 1994); *see also* Restatement (Third) of Restitution and Unjust Enrichment § 51 (2011) ("Profit includes *any form* of use value, proceeds, or consequential gains (§ 53) that is identifiable and measurable and not unduly remote.") (emphasis added).

Specifically, the Band contends that Enbridge realized an economic benefit by unjustly delaying the construction costs associated with a reroute and decommissioning of

the pipeline on the Reservation. The Band's expert, Leistra-Jones, estimated Enbridge's economic benefit of delaying construction on the pipeline segment as \$296,234,750, in net present value terms as of October 24, 2022, using an assumed in-service date of December 31, 2025, and Enbridge's internal documents estimating the costs of reroute and decommission of the pipeline. (Leistra-Jones Rep. (dkt. #573) 26.) Enbridge adduced no contrary evidence to show that Leistra-Jones' numbers or calculations were too high or low, but it does object to his calculations on the grounds that Leistra-Jones is not a construction cost estimator and that his analysis is wholly speculative.

Even though Enbridge did a poor job of presenting contrary evidence, the court is concerned that Leistra-Jones' cost-avoidance calculations for a reroute of Line 5 on the Reservation would result in disgorgement disproportionate to Enbridge's trespass on a few parcels. Accordingly, the court will instead require Enbridge to disgorge \$740,699 to account for its ongoing cost-avoidance as to those parcels, calculated by multiplying the Band's average ownership interest of 69.455 percent in the 12 parcels by .36 percent (2.33/642 miles) of the \$296,234,750 savings figure proposed by Leistra-Jones.

Finally, there is a question whether the court can or should increase Enbridge's disgorgement for each year that Enbridge remains in trespass on the Band's land. Although the court carefully considered such relief, the court was unable to find legal authority permitting the court to impose such a penalty as a form of equitable relief. To the contrary, equitable, profits-focused remedies are not intended to be penalties. *Liu v. Sec. & Exch. Comm'n*, 140 S. Ct. 1936, 1944, 1949 (2020); *see also* Restatement (Third) of Restitution and Unjust Enrichment § 51(5) (purpose of restitution as "eliminat[ing] profit from the

wrongdoing while avoiding, so far as possible, the imposition of a penalty”). Accordingly, because the court is acting in equity, it will not impose escalating penalties on Enbridge.

3. Injunctive relief for trespass

Finally, the Band requests that the court enter a permanent injunction that would prohibit the further transport of crude oil and natural gas on Line 5 through the 12 parcels owned by the Band. Specifically, the Band has requested that the court require Enbridge to cease use of Line 5 across the relevant parcels within a set time frame to allow oil and natural gas markets to adjust to decommissioning of Line 5. One problem is that the parties have wildly different estimates as to how long that time frame should be.

As the court explained at summary judgment, trial and again in this opinion, there are equitable and practical considerations that affect the scope and timing of the Band’s injunction request. In particular, as laid out above, the two sides presented conflicting expert testimony from oil industry economists and experts in the logistics of shipping crude oil and NGLs, who provided varying opinions regarding the impact of shutting down Line 5, as well as whether there are viable mechanisms for replacing the energy products currently conveyed by the pipeline.

That being said, the court concludes that the Band is ultimately entitled to permanent injunctive relief on its trespass claim under a fair reading of the current law applicable to its sovereign rights. Plus, Enbridge has presented no legal authority supporting its position that the court could permit it to trespass indefinitely on the Band’s land. Nor has Enbridge cited any legal authority suggesting that the court could effectively force a renewal of expired easements despite the Band’s sovereignty, by permitting

Enbridge to pay a fee or profits while continuing to operate its pipeline. Similarly, although equitable concerns may displace tribal sovereignty in extraordinary situations, such as where the Tribe is asserting rights over land from which it was displaced hundreds of years ago, as in *City of Sherrill, N.Y. v. Oneida Indian Nation of New York*, 544 U.S. 197, 217 (2005), and *Cayuga Indian Nation of N.Y. v. Pataki*, 413 F.3d 266, 269 (2d Cir. 2005), this case does not present such extraordinary circumstances. Instead, the Band has never abandoned its rights to the parcels at issue, and Enbridge has always operated the pipeline under rights of way issued by the BIA on behalf of the Band, other than for the 10 years after its easement rights on the 12 parcels had expired.

As discussed above, the court has been and still is wary of permanently shutting down the pipeline without providing adequate time for market adjustments, and hopefully, even for Enbridge to complete a proposed reroute of Line 5, which Enbridge represents would likely take 5 years for permitting and a turnkey bypass to be put in place. Frankly, absent extraordinary efforts by Enbridge and intervention by federal officials, even this appears to be optimistic given the organized opposition to it, including by the Band. However, Enbridge has now had 10 years since losing its rights of way, including four years of litigating, to move its bypass forward. Considering all the evidence, the court cannot countenance an indefinite delay or even justify what would amount to a five-year forced easement with little realistic prospect of a reroute proceeding even then. Nevertheless, the court will give Enbridge an additional three years to complete a reroute. If Enbridge fails to do so, the three years will at least give the public and other affected market players time to adjust to a permanent closure of Line 5. It will also give Enbridge sufficient time to

appeal this court's injunctive order or make new law. At the expiration of three years from the date of this order, therefore, Enbridge must have decommissioned Line 5 on the 12 affected parcels, as well as arranged removal of any sidelined pipe and remediation of area.

ORDER

IT IS ORDERED that:

1. Defendants Enbridge Energy Company, Inc. and Enbridge Energy, L.P. shall adopt and implement its December 2022 monitoring and shutdown plan in full, including the court's modifications set forth in this order, within 21 days of the date of this order.
2. Defendants shall disgorge \$5,151,668 to plaintiff Bad River Band of the Lake Superior Tribe of Chippewa Indians for defendants' past trespass on the Band's 12, former allotment parcels.
3. Defendants shall continue disgorging profits to the Band on a quarterly basis according to the formular set forth in this opinion so long as Line 5 operates in trespass of the 12, former allotment parcels.
4. Defendants are ENJOINED to cease operation of Line 5 on any parcel within the Band's tribal territory on which defendants lack a valid right of way and to arrange reasonable remediation at those sites within three years of the date of this order.
5. The parties may have until Friday, June 23, 2023, to seek any clarification of this order in writing, at which time the court will proceed to enter final judgment, or if necessary, schedule a brief telephonic hearing to address any remaining concerns.

Entered this 16th day of June, 2023.

BY THE COURT:

/s/

WILLIAM M. CONLEY
District Judge