

**Comments on Mile Post 7 Environmental Assessment Worksheet  
by Minnesota Center for Environmental Advocacy, Center for Biological Diversity,  
Save Lake Superior Association, Save Our Sky Blue Waters,  
Friends of the Boundary Waters Wilderness, and  
Izaak Walton League of America**

**May 18, 2023**

**INTRODUCTION**

The Mile Post 7 tailings basin was built for one reason: To keep taconite mining waste from being dumped directly into Lake Superior. Now the basin holds 40 years' worth of tailings and Northshore Mining Co. ("Northshore") is seeking permission from the Department of Natural Resources ("DNR") to make changes that would allow it to expand the already large tailings basin by another 650 acres. But the environmental review for the project has a major flaw – it makes no mention whatsoever of what would happen if the dams at the tailings basin are breached. If a breach occurs, decades of mining waste could rush downhill toward Lake Superior, resulting in severe environmental effects and negating the entire reason for the tailings basin's existence. Before DNR reaches any decisions regarding the proposed expansion of Mile Post 7, it must perform a thorough environmental review that examines the risks and effects of a dam breach. Accordingly, Minnesota Center for Environmental Advocacy ("MCEA"), Center for Biological Diversity, Save Lake Superior Association, Save Our Sky Blue Waters, Friends of the Boundary Waters Wilderness, and the W.J. McCabe Chapter of Izaak Walton League of America, ask DNR to order an Environmental Impact Statement ("EIS") on the issue of dam safety or, in the alternative, to supplement the Environmental Assessment Worksheet ("EAW") with this information.

## BACKGROUND

### I. The origins of the Mile Post 7 tailings basin

The Mile Post 7 tailings basin was originally constructed in the 1970s, when federal courts required Reserve Mining Co. (“Reserve Mining”) to stop disposing tailings directly into Lake Superior.<sup>1</sup> The court explained that disposing the potentially carcinogenic mining waste into the lake endangered people’s health and welfare in violation of the Federal Water Pollution Control Act.<sup>2</sup> In response, Reserve Mining proposed creating a tailings basin to collect the waste at Mile Post 7, which is located 600 feet vertically above Lake Superior and three miles from the shore of the lake.<sup>3</sup>

State and federal environmental reviews were required for this proposal. In 1976, a state final environmental impact statement on Mile Post 7 and alternative disposal sites was published (“1976 EIS”).<sup>4</sup> Based on the 1976 EIS, a hearing officer concluded, and both DNR and MPCA agreed, that Mile Post 7 was an unsuitable location for a tailings basin.<sup>5</sup> The hearing officer concluded that precautions taken in the construction of dams could reduce, but not eliminate, the risk of dam failure, and that a failure would “thwart the entire purpose of on land disposal by emptying stored tailings into Lake Superior.”<sup>6</sup> The following year, a federal EIS was completed by the U.S. Army Corps of Engineers (“1977

---

<sup>1</sup> *Reserve Mining Co. v. Environmental Protection Agency*, 514 F.2d 492, 538 (8th Cir. 1975).

<sup>2</sup> *Id.* at 529.

<sup>3</sup> Cmt. Ex. C - DNR & MPCA, *Findings, Conclusions, and Recommendations on Reserve Mining Company, On-land Tailings Disposal*, Finding 28 (1976) (hereinafter “1976 State EIS Findings”). Exhibits to these Comments will hereinafter be referred to as “Cmt. Ex.”

<sup>4</sup> *Id.*

<sup>5</sup> *Id.* at 41-43, 46.

<sup>6</sup> *Id.* at 41.

EIS”) for Mile Post 7.<sup>7</sup> Later that same year, despite the findings of the state EIS, the Minnesota Supreme Court ordered the agencies to issue permits that authorized construction of the tailings basin at the Mile Post 7 location, rather than at an alternative location.<sup>8</sup> Accordingly, in July 1977, the DNR issued Reserve Mining an amended Master Permit allowing construction of the tailings basin, even though state agencies had determined the location unsuitable.<sup>9</sup>

In 1979, Minnesota adopted laws governing dam safety and requiring dam safety permits for tailings basin dams.<sup>10</sup> But no dam safety permit was issued for the Mile Post 7 tailings basin. After the Mineland Reclamation Rules requiring that all metallic mining facilities have a Permit to Mine were passed in 1981, however, Reserve Mining applied for a Permit to Mine that covered the Peter Mitchell mine and the Mile Post 7 tailings basin.<sup>11</sup> Reserve Mining received this permit in 1985.<sup>12</sup>

---

<sup>7</sup> EAW Ex. J29 – 1977 USACE Final EIS. Exhibits to the Environmental Assessment Worksheet for Mile Post 7 West Ridge Railroad Relocation, Dam Extensions, and Stream Mitigation Project (April 2023) will hereinafter be referred to as “EAW Ex.”

<sup>8</sup> *Reserve Mining Co. v. Herbst*, 256 N.W.2d 808, 846 (Minn. 1977).

<sup>9</sup> EAW Ex. J3 – 1977 Master Permit.

<sup>10</sup> DNR, *Environmental Assessment Worksheet for Mile Post 7 West Ridge Railroad Relocation, Dam Extensions, and Stream Mitigation Project*, at 19, n.13 (April 2023) (hereinafter, “EAW”); Minn. Stat. § 103G.501-.561; Minn. R. 6115.0300 – 6115.0520.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* Permits to mine control construction and development of a mine, operational practices, and reclamation of mined areas. See DNR, *Permit to Mine*, <https://www.dnr.state.mn.us/polymet/permitting/ptm/index.html>. These permits do not specifically control dam safety. DNR asserts that the Master Permit regulates dam safety at Mile Post 7. *Id.* at 19, n.13.

## II. Northshore's request to expand the tailings basin

Decades passed, and ownership of the tailings basin passed to Northshore.<sup>13</sup> Near the end of the 2010s, Northshore quietly began working toward approval of a major expansion of the tailings basin. In a tailings basin, tailings are constrained by a combination of topography and constructed dams that are raised in vertical and horizontal sections over time. The 1977 EIS had studied, and the 1985 permit approved, a tailings basin with dams at a maximum height of 1,315 feet above mean sea level.<sup>14</sup> This would ultimately lead to a tailings basin with an area of around 2,800 acres.<sup>15</sup> By the late 2010s the tailings basin dam heights were around 1,240 feet.<sup>16</sup>

In 2017, Northshore requested permission from DNR to raise the tailings basin dams up to an elevation of 1,365 feet, 50 feet higher than the current maximum permitted level.<sup>17</sup> This would have expanded the tailings basin by approximately 850 acres more than contemplated by the initial environmental review and permitting. DNR, without public notice, directed a memorandum to the file in which it noted its decision not to require environmental review of this major expansion project, despite the Minnesota Rules requiring an EAW for expansions of tailings basins of more than 320 acres.<sup>18</sup> This

---

<sup>13</sup> EAW at 14.

<sup>14</sup> EAW at 16, 18.

<sup>15</sup> EAW at 18.

<sup>16</sup> *Id.*; Cmt. Ex. D – DNR, *Memorandum re: Northshore Mine Mile Post 7 Railroad Realignment & Tailings Basin Progression Assessment of EIS Supplement Requirement*, at 1. (March 2017) (hereinafter “2017 DNR Assessment of EIS Supplement Requirement”)

<sup>17</sup> Cmt. Ex. D – 2017 DNR Assessment of EIS Supplement Requirement, at 2.

<sup>18</sup> Cmt. Ex. D – 2017 DNR Assessment of EIS Supplement Requirement, at 6; Minn. R. 4410.4300, subp. 11(B) (EAW required for tailings basin expansion).

cleared the way for Northshore to apply for a wetland permit and water quality certification, from the U.S. Army Corps of Engineers and Minnesota Pollution Control Agency respectively, for a project that would expand the tailings basin by approximately 850 acres, up to a dam height of 1,365 feet.<sup>19</sup> Northshore moved forward with permit applications despite repeated objections from environmental organizations that environmental review must be performed before decisions could be made regarding the expansion.

In June 2021, DNR responded to the environmental organizations' concerns by providing an internal memo in which DNR again declined to order environmental review for an expansion of the Mile Post 7 tailings basin.<sup>20</sup> But according to the memo, the project Northshore was proposing had changed – now, Northshore was proposing to extend Dams 1 and 2, relocate a rail line, and develop a new clay borrow site, but not to raise the dam heights above 1,315 feet or to extend the tailings basin beyond the 2,800 acres contemplated by the permits.<sup>21</sup> On this basis, DNR asserted that no environmental review was needed for the project because it had been covered by the 1970s environmental review.<sup>22</sup> No explanation was made for why DNR was discussing only a smaller project,

---

<sup>19</sup> Cmt. Ex. E – U.S. Army Corps of Engineers, *Public Notice of Section 404 Permit Application for Northshore Mining Company*, at 20 (2020); Cmt. Ex. F – MPCA, *Public Notice of 401 Water Quality Certification for Northshore Railroad Relocation and Tailings Basin Progression Project*, at 1 (2020).

<sup>20</sup> EAW Ex. J2 – 2021 DNR Environmental Review Need Determination, at 1.

<sup>21</sup> *Id.* at 1.

<sup>22</sup> *Id.* at 65.

or whether Northshore still intended to seek approval of the larger project, separately or in the future.

### **III. Requests for environmental review to examine dam safety**

Concerned by the lack of environmental review of the expansion and the unclear scope of the project, in November 2021, MCEA and WaterLegacy filed petitions requesting an Environmental Assessment Worksheet for the Mile Post 7 Expansion (“EAW Petitions”).<sup>23</sup> The EAW Petitions argued that the expansion triggered a mandatory EAW because it was an expansion of a tailings basin of more than 320 acres,<sup>24</sup> pursuant to Minn. R. 4410.4300, subp. 11(B); or because of the stream diversion of Big 39 Creek and Little 39 Creek, pursuant to Minn. R. 4410.4300, subp. 26.<sup>25</sup> The EAW Petitions also argued the Mile Post 7 Expansion had the potential for significant environmental effects because of potential dam safety issues, and that the existence of nearly 50-year-old EISs did not allow Northshore to avoid environmental review for the currently planned expansion.<sup>26</sup>

In February 2022, DNR denied the EAW Petitions in an 82-page order. DNR stated that increases in dam height were no longer being sought by Northshore, and accordingly the 1970s environmental reviews covered the proposed expansion.<sup>27</sup> DNR also stated that its ongoing regulatory authority over the tailings basin would mitigate any potentially

---

<sup>23</sup> Cmt. Ex. G – MCEA, *Petition for EAW for Proposal to Amend Northshore Mining, Inc.’s Permit to Mine* (Nov. 9, 2021).

<sup>24</sup> *Id.* at 7.

<sup>25</sup> *Id.* at 25-26.

<sup>26</sup> *Id.* at 26-27.

<sup>27</sup> EAW Ex. J7 – 2022 DNR Record of Decision, at 30.

significant environmental effects.<sup>28</sup> Ultimately, DNR concluded there was no potential for significant environmental effects from the expansion of the tailings basin.<sup>29</sup>

In March 2022, however, DNR published an EAW for Big 39 and Little 39 Creek Mitigation, based on the mandatory category for stream diversion, even though DNR had asserted in the February 2022 order denying the EAW Petitions that the stream mitigation did not trigger a mandatory EAW.<sup>30</sup> MCEA commented that the Mile Post 7 Expansion was a “connected action” to the stream mitigation project, and that DNR was required to include information about the Mile Post 7 Expansion in the EAW.<sup>31</sup> A month later, MCEA and WaterLegacy sent a letter to DNR Commissioner Sarah Strommen stating that (1) DNR must require Northshore to apply for dam safety permits for Mile Post 7’s dams; (2) DNR must set a term for the Northshore Permit to Mine and the Mile Post 7 dam safety permits; (3) DNR must review Northshore’s financial assurance for the Mile Post 7 closure; and (4) DNR must disclose and update the dam break analysis for Mile Post 7.<sup>32</sup> DNR did not respond to this letter. DNR did, however, withdraw the March 2022 Big 39

---

<sup>28</sup> *Id.* at 80-81.

<sup>29</sup> *Id.* at 81-82.

<sup>30</sup> Cmt. Ex. H – DNR, *EAW for Big 39 and Little 39 Creek Mitigation, Beaver Bay Township, Lake County, Minn.*, at 1 (March 2022).

<sup>31</sup> Cmt. Ex. I – MCEA, *Comments on the EAW for Big 39 and Little 39 Creek Mitigation, Beaver Bay Township, Lake County, Minn.*, at 1 (April 2022) (citing Minn. R. 4410.1000, subp. 4).

<sup>32</sup> Cmt. Ex. J – MCEA & WaterLegacy, *Letter to DNR Commissioner Sarah Strommen re: Northshore Mining Co. Milepost 7 Tailings Basin Need for Dam Safety Permit, Closure Cost Review, and Permit Term* (May 2022).

and Little 39 Creek mitigation EAW at Northshore’s request in order to add new data, “including actions proposed at the Mile Post 7 tailings disposal facility.”<sup>33</sup>

In April 2023, DNR issued the present EAW, which covers not only stream mitigation projects, but also changes proposed for the tailings basin “in order to use the remaining portions of the Tailings Basin.”<sup>34</sup> The EAW explains that the activities that collectively constitute “the Project” include two components: (1) the changes required to allow the tailings basin to be used to its maximum permitted capacity, including the relocation of a railroad line, the extension of two dams, construction of a rail switchback, and the excavation of clay from borrow pits for dam construction; and (2) stream mitigation projects required by the filling of the entirety of the permitted tailings basin.<sup>35</sup>

## ANALYSIS

### **I. DNR must order an EIS because of the potential for significant environmental effects from the Mile Post 7 Expansion arising from the risk of a dam breach**

DNR must order an EIS if the Mile Post 7 Expansion has the “potential for significant environmental effects.”<sup>36</sup> In making this determination, DNR must consider the

- A. type, extent, and reversibility of environmental effects;
- B. cumulative potential effects. ...
- C. the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority. ... and

---

<sup>33</sup> Cmt. Ex. K – DNR, *Memorandum re: Decision to Terminate Big 39 & Little 39 Creek Mitigation Project EAW* (June 2022).

<sup>34</sup> EAW at 5.

<sup>35</sup> *Id.*

<sup>36</sup> Minn. Stat. § 116D.04, subd. 2a.



- D. the extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies ... including other EISs.<sup>37</sup>

If DNR decides that “information necessary to a reasoned decision about the potential for, or significance of, one or more possible environmental impacts is lacking, but could be reasonably obtained,” DNR must order an EIS or postpone the decision on the need for an EIS in order to obtain the lacking information.<sup>38</sup> In this case, because of the significant—in fact, potentially catastrophic—environmental effects that would result from a breach of the Mile Post 7 tailings basin’s dams, DNR must order an EIS or, at a minimum, supplement the EAW to add information on the safety of the Mile Post 7 dams and the consequences of their failure.

**A. DNR must obtain information about dam safety in order to determine the potential for significant environmental effects from the Mile Post 7 Expansion**

A collapse of the tailings basin undoubtedly would have significant environmental effects. As the 1976 EIS hearing findings explain, a failure of a 1,000-foot section of the south dam “would produce a wall of water twenty-eight feet high traveling at over 20 miles per hour down the Beaver River valley to Lake Superior” and “would frustrate the sole objective of its construction, the termination of tailings disposal in Lake Superior.”<sup>39</sup> These devastating effects would be intensified by the Mile Post 7 Expansion, which would add nearly 562 million long tons<sup>40</sup> of tailings to the basin. The first question,

---

<sup>37</sup> Minn. R. 4410.1700, subp. 7.

<sup>38</sup> Minn. R. 4410.1700, subp. 2a.

<sup>39</sup> Cmt. Ex. C – 1976 State EIS Findings, at 13.

<sup>40</sup> EAW at 17.

therefore, is whether the *potential* exists for these environmental effects to occur. This means the EAW must evaluate how safe the dams would be after the Mile Post 7 Expansion to determine whether the potential exists for the significant environmental effects that would arise from a dam breach.

The EAW, however, contains absolutely no information whatsoever regarding dam safety or the risk of collapse. Although the EAW form does not have a specific question with regard to dam safety, question number 22 asks whether there are any other potential environmental effects from the project, and the EAW simply states, “No other potential environmental effects have been identified.”<sup>41</sup> This is surprising, as the earlier EAW Petitions both identified the risk of a dam breach as a potentially significant environmental effect and submitted an expert report explaining some of those risks. DNR asserted in its order denying the EAW Petitions that the effects of a dam breach had been studied in the 1970s-era environmental reviews, and that any such effects would be mitigated by DNR’s ongoing regulatory authority under Mile Post 7’s Permit to Mine, Master Permit, and oversight under DNR’s Dam Safety Program.<sup>42</sup> But the risk of dam breach remains an identified potentially significant environmental effect that should have been publicly studied in the EAW so that the public could see, and comment on, the information.<sup>43</sup>

---

<sup>41</sup> EAW at 93.

<sup>42</sup> EAW Ex. J7 – 2022 DNR Record of Decision, at 79-80.

<sup>43</sup> See *Matter of Denial of a Contested Case Hearing Request & Modification of a Notice of Coverage Under Individual Nat'l Pollution Discharge Elimination Sys. Feedlot Permit No. MN0067652*, No. A19-0207, 2019 WL 5106666, at \*7 (Minn. App. Oct. 14, 2019) (holding

In fact, there are significant risks related to dam safety that DNR has either not acknowledged or not fully evaluated, including four risks identified in the expert report submitted with this comment: (1) the risk that the dams will fail because they are in part constructed on top of the very tailings they are meant to confine; (2) the risk of toe lift or slope instability, (3) the risk of the reclaim dam collapsing, and (4) the risk of continuing malfunctioning or absent instrumentation.<sup>44</sup> Before DNR can determine whether the Mile Post 7 Expansion has the potential for significant environmental effects, it must evaluate how safe the dams at the tailings basin will be after the expansion, including looking at these four risks.

**1. The Mile Post 7 tailings basin dams are at higher risk of failure because they are constructed, in part, on top of the fine tailings they are intended to confine**

First, DNR must study the risks of a dam breach that arise from the fact that portions of the dams at Mile Post 7 were built on top of the fine tailings they were intended to confine. This makes them more unstable. No environmental review has ever studied the risk of these dams – the 1970s-era environmental review evaluated the risks of more stable downstream dams, not the riskier types of dams constructed at Mile Post 7.

---

agency’s “analysis was not limited to the EAW form,” but instead must cover all information gathered and issues raised in environmental review).

<sup>44</sup> Cmt. Ex. A – Dr. Steven H. Emerman, *Evaluation of a Record of Decision by the Minn. Dept. of Natural Resources regarding the Proposed Tailings Dam Extensions at the Cleveland-Cliffs Mile Post 7 Tailings Storage Facility, Northeastern Minn.* (May 11, 2023) (hereinafter “2023 Emerman Report”).

Tailings basin dams can be constructed in several ways, which have different costs and risks. In the downstream method of construction, each subsequent raise of a dam wall is sloped in a downstream direction, away from the contents of the dam.<sup>45</sup> This is the safest method of construction, as there are no uncompacted tailings below the dam that are at risk of liquefaction, but it is also the most expensive because of the amount of material required to build the dam walls.<sup>46</sup> In upstream dam construction, by contrast, the tailings dam is constructed out of coarse tailings placed on top of the uncompacted fine tailings that the dam is confining.<sup>47</sup> This construction method is cheaper, because only moderate compaction of a smaller amount of material is required.<sup>48</sup> It is also the least secure method for dam construction because it “relies on the stability of the tailings themselves as a foundation for dam construction.”<sup>49</sup> Finally, in centerline construction, subsequent raises of the dams are built directly on top of each other, resting both on uncompacted tailings and the downstream slope of the previously built dam wall.<sup>50</sup> This method is less stable than a downstream dam, but more stable than an upstream dam.

---

<sup>45</sup> Cmt. Ex. B – Dr. Steven Emerman, *Evaluation of the Proposed Tailings Dam Extensions at the Cleveland-Cliffs Mile Post 7 Tailings Storage Facility, Northeastern Minn.*, Figure 6b, p. 13 (Sept. 2021) (hereinafter “2021 Emerman Report”).

<sup>46</sup> *Id.*, Figure 6b, p. 13.

<sup>47</sup> *Id.*, Figure 6a, p. 12.

<sup>48</sup> *Id.* Unlike dams constructed to retain water, which produce economic benefits that presumably outweigh their costs, “tailings dams are economic liabilities to the mining operations from start to finish. As a result, it is not often economically feasible to go to the lengths sometimes taken to obtain fill for conventional water dams.” *Id.* at 7.

<sup>49</sup> Cmt. Ex. L – David M. Chambers & Bretwood Higman, *Long Term Risks of Tailings Dam Failure*, at 2 (Oct. 2011).

<sup>50</sup> Cmt. Ex. B – 2021 Emerman Report, Figure 6c, p. 14.

Originally, the Milepost 7 tailings basin dams were designed to be raised using the downstream method of construction, and it is this construction method that was studied in the 1976 and 1977 EISs. In fact, both EISs specifically contrasted the safer downstream method that was planned for the facility with the less safe upstream method.<sup>51</sup> But this plan changed. In 1997, Northshore changed its construction for Dams 1 and 2 to the upstream method.<sup>52</sup> Then in 2003, DNR has asserted, the construction method shifted again to “modified centerline or offset upstream.”<sup>53</sup> This means, according to DNR, that the dams were constructed “on a lift of fine tailings that are upstream of the starter dam.”<sup>54</sup> A study of the construction of Dams 1 and 2 demonstrates these changes, indicating that the dams were first constructed as starter dikes, then raised in an upstream direction, and finally topped with centerline raises on the upstream dams, which are on top of the fine tailings.<sup>55</sup>

In the order denying the EAW Petitions, DNR strenuously objected to the tailings basin dams at Mile Post 7 being referred to as “upstream dams.” There is no question as to why Northshore would not want the dams so characterized. Upstream construction has been criticized by a number of mining and dam construction organizations, including the Society for Mining, Metallurgy and Exploration and the International Commission on

---

<sup>51</sup> Cmt. Ex. C – 1976 State EIS Findings. at 9; EAW Ex. J29 – 1977 USACE Final EIS, at 158.

<sup>52</sup> EAW Ex. J7 – 2002 DNR Record of Decision ¶ 170.

<sup>53</sup> *Id.* ¶ 173.

<sup>54</sup> *Id.* ¶ 178.

<sup>55</sup> Cmt. Ex. B – 2021 Emerman Report, at 35.

Large Dams,<sup>56</sup> and banned in Brazil, Chile, Peru, and Ecuador.<sup>57</sup> Because the design places dam walls on top of uncompacted fine tailings, upstream dams are especially vulnerable to failure by liquefaction, in which the tailings that constitute the dam wall lose their strength and behave like a liquid.<sup>58</sup> If the underlying tailings liquefy, “the dam could fail by either falling into or sliding over the liquefied tailings.”<sup>59</sup> And liquefaction becomes a greater concern for upstream dams as dam height increases.<sup>60</sup> For these reasons, the Surface Mining Handbook by the Society for Mining, Metallurgy, and Exploration from February 2023 denounces upstream construction, explaining that it “has been utilized in many of the most serious [tailings basin] failures [even though] the dangers of failure inherent with the upstream method have been recognized for many decades.”<sup>61</sup> And the *Safety First: Guidelines for Responsible Mine Tailings Management* from Earthworks and Mining Watch concludes unequivocally: “Because of the demonstrated risk associated with upstream dam construction, upstream dams must not be built at any

---

<sup>56</sup> Cmt. Ex. A – 2023 Emerman Report, at 2, 16-17.

<sup>57</sup> Cmt. Ex. B – 2021 Emerman Report, at 22.

<sup>58</sup> *Id.* at 15, 17. Liquefaction occurs when the pores between loosely packed particles become so saturated with water that the particles can no longer touch each other and thereby support the load of the mass of particles. In such cases, the load is supported only by the water, and the entire mass of particles and water behaves like a liquid. (See *id.*, Figure 8, at 15-16 for a fuller description of liquefaction.) Tailings basins “are especially susceptible to liquefaction” because their contents are discharged from pipes without subsequent compaction. *Id.* at 16.

<sup>59</sup> *Id.* at 17. A downstream dam, by contrast, can survive the complete liquefaction of the tailings stored within the dam. *Id.*

<sup>60</sup> Cmt. Ex. A – 2023 Emerman Report, at 17.

<sup>61</sup> *Id.* at 17.

new facilities ... Expansion of existing upstream tailings facilities must cease, and these facilities must be safely closed as soon as possible.”<sup>62</sup>

To distance Mile Post 7 from these concerns, DNR insists that the Mile Post 7 dams do not meet the “classical definition of an upstream dam.”<sup>63</sup> But because modified centerline construction still includes construction of the dam on top of uncompacted tailings, the design must still be considered a type of upstream dam.<sup>64</sup> Even a centerline raise constructed on top of an existing upstream dam constitutes an upstream dam.<sup>65</sup> But the issue here is not the exact definition of “upstream” or “modified centerline” or “offset upstream” construction methods. Regardless of what the dams are called, the fact is that “Dams 1 and 2 share the feature that causes the greater vulnerability to failure of upstream dams, which is the construction of dikes on top of uncompacted tailings.”<sup>66</sup> This makes them more likely to fail.<sup>67</sup> Accordingly, the safety of these dams merits further study before they are extended – particularly because only downstream, not upstream, modified centerline, or offset upstream, dams were considered in the 1970s EISs.

DNR also has asserted that the Mile Post 7 dams are stable, despite being built on top of fine tailings like an upstream dam, because the underlying tailings have compacted

---

<sup>62</sup> Cmt. Ex. A – 2023 Emerman Report, at 16.

<sup>63</sup> EAW Ex. J7 – 2022 DNR Record of Decision ¶ 178.

<sup>64</sup> Cmt. Ex. A – 2023 Emerman Report, at 18. In some places where upstream dams have been banned, companies have claimed their dams are “modified centerline” to avoid the prohibition. *Id.* at 18.

<sup>65</sup> *Id.* at 20.

<sup>66</sup> *Id.* at 2.

<sup>67</sup> *Id.* at 20.

over time.<sup>68</sup> However, DNR presents no evidence for this assertion.<sup>69</sup> In fact, in many cases tailings have failed to significantly compact even half a century after they were deposited in a basin, and there is no reason to believe the tailings at Mile Post 7 have done so.<sup>70</sup> Because of the safety concerns associated with dams built on top of the fine tailings they are intended to confine—as Dams 1 and 2 at Mile Post 7 undisputedly are—environmental review must consider the potential for a dam breach related to the Mile Post 7 Expansion.

**2. The Mile Post 7 dams are at risk of breach because of potential toe uplift and slope instability under undrained loading**

Second, DNR must examine the potential of a dam breach at Mile Post 7 through the mechanisms of toe uplift or slope instability under undrained loading. The EAW mentions neither of these possibilities.

“Toe uplift” occurs when “seepage forces from groundwater emerging downstream of the dam are strong enough to lift the toe of the dam,” i.e., the point where the downstream face of the dam meets the ground.<sup>71</sup> This is a danger at dams with clay foundations—like the dams at Mile Post 7—and it can lead to dam failure when the bottom of the dam is pushed upward.<sup>72</sup> The widely recognized acceptable factor of safety against toe lift for a dam is 1.5, as recognized by Barr Engineering, the consultant that

---

<sup>68</sup> EAW Ex. J7 - 2022 DNR Record of Decision ¶ 219.

<sup>69</sup> Cmt. Ex. A - 2023 Emerman Report, at 21.

<sup>70</sup> *Id.* at 22. Compaction requires the particles to dry out, and samples have shown that tailings deep within a basin may remain saturated even after decades. *Id.*

<sup>71</sup> *Id.* at 27.

<sup>72</sup> *Id.* at 27-28.



calculated factors of safety for the dams at Mile Post 7.<sup>73</sup> But the factors of safety against toe lift calculated by Barr Engineering for Dams 1, 2, and 5 from a seepage model all were below this acceptable number.<sup>74</sup> At an elevation of 1,215 feet above sea level, Barr calculated the factors of safety at 1.04 for Dam 1, 1.48 for Dam 2, and 1.20 for Dam 5.<sup>75</sup> At the dams' planned ultimate elevation, Barr calculated factors of safety of .97 for Dam 1, 1.43 for Dam 2, and in a later analysis, 1.04 for Dam 5.<sup>76</sup> Barr recognized that that the 1.04 factor of safety was "unacceptable."<sup>77</sup> Using standard language for dam safety analyses, the dams would be considered "unstable against toe uplift."<sup>78</sup> But the EAW does not mention toe uplift or these factors of safety at all.

"Undrained loading" occurs when water cannot move freely through a dam during a disturbance, such as an earthquake or machinery vibrations, causing a pressure build up that can lead to liquefaction.<sup>79</sup> The most commonly used factor of safety for undrained slope instability is 1.5, but Barr Engineering used a recommended factor of safety of 1.3.<sup>80</sup> But Barr Engineering still calculated a factor of safety of 1.27, below even

---

<sup>73</sup> *Id.* at 29-30.

<sup>74</sup> *Id.* at 30-32.

<sup>75</sup> *Id.* at 30-32. Barr Engineering also calculated factors of safety based on information from piezometer measurements for Dam 1 only, and using this method calculated a 1.31 factor of safety, still below the acceptable factor of safety of 1.5. *Id.* at 30. However, there is a concern that the relevant piezometers for Dam 1 may not be giving correct measurements. *Id.*

<sup>76</sup> *Id.* at 30-32.

<sup>77</sup> *Id.* at 33.

<sup>78</sup> *Id.* at 33.

<sup>79</sup> *Id.* at 34-35.

<sup>80</sup> *Id.* at 35-36.

the lowered recommended value, for Dam 1 at its ultimate elevation of 1,315 feet.<sup>81</sup> Barr dismissed any issue with this instability, however, by saying that “[m]any changes may take place in the seepage conditions of the dam [by the time it reaches 1,315 feet], including possible stockpiling of plant aggregate along the toe of the dam for storage and strength-gain in foundation and dam materials.”<sup>82</sup> But mere speculation about Northshore’s future actions cannot substitute for an actual analysis of this issue—and none exists in the EAW.

These two issues demonstrate the potential for significant environmental effects with the Mile Post 7 Expansion. Analyses by Northshore’s own engineering consultant show that the tailings basin dams already are unstable against toe uplift and that one, at a higher elevation, will become unstable against undrained loading. DNR should make no decision regarding a project that would involve extending these unstable dams and ultimately raising and loading hundreds of millions of tons of tailings behind them until DNR has thoroughly studied these issues in environmental review.

**3. The reclaim dam within the Mile Post 7 tailings basin is on the cusp of failure, and its failure creates the risk of other dam breaches**

Third, DNR must study the stability of the reclaim dam within the tailings basin, which has the potential to collapse and cause other dam breaches. The reclaim dam “is an interior dam that creates a ring dike around a historical low area within the basin which allows water to be ponded where floating pump stations return water to the plant

---

<sup>81</sup> *Id.* at 35.

<sup>82</sup> *Id.*

or the water treatment plant.”<sup>83</sup> When an updated stability analysis of the reclaim dam was prepared in 2015 to address planned dam raises, the results showed that the reclaim dam was unstable.<sup>84</sup> Currently, the factors of safety calculated for the reclaim dam at two particular stations are .90 and 1.00.<sup>85</sup> A factor of safety of 1.00 indicates a dam on the cusp of failure.<sup>86</sup>

If the reclaim dam collapses, energy released from its failure could be transferred to the water in the reclaim pond, which could potentially flow over the top of the outer dams and cause a breach.<sup>87</sup> Alternatively, energy from the collapse could be transferred to one of the outer dams, making them less stable, which could in turn lead to a breach.<sup>88</sup> While these are possibilities, not certainties, they are risks that should be studied in the EAW. Instead, the EAW does not even mention the reclaim dam.

#### **4. The ongoing history of missing and malfunctioning monitoring equipment at the Mile Post 7 tailings basin dams creates a higher risk of dam breach**

Finally, DNR must consider the long history of missing or malfunctioning piezometers at Mile Post 7. Without proper monitoring of the dams at Mile Post 7 – which as explained above are built on fine tailings and should be considered unstable against toe uplift – the risk of dam breach is increased. But the EAW does not mention any monitoring of the stability of the dams at all.

---

<sup>83</sup> EAW Ex. J19 – 2019-2023 5 Year Operating Plan, at 23.

<sup>84</sup> *Id.* (stating reclaim dam has factors of safety “less than minimal accepted values.”)

<sup>85</sup> *Id.* at 24.

<sup>86</sup> Cmt. Ex. B – 2021 Emerman Report, at 2.

<sup>87</sup> Cmt. Ex. A – 2023 Emerman Report, at 38-39.

<sup>88</sup> *Id.* at 39.

Piezometers are instruments used to measure the pressure of groundwater in dams or other conduits, allowing the pressure to be monitored and controlled if necessary. But a lack of functional piezometers at the Mile Post 7 dams has been a recurrent theme throughout nearly all of Northshore’s five-year operating plans.<sup>89</sup> In 2019, Barr Engineering reported that 23 piezometers at Mile Post 7 were malfunctioning or non-functional.<sup>90</sup> Although DNR later reported that 18 of the piezometers were abandoned, replaced, or “in process” (which, notably, is not the same as ensuring all of them were properly functioning), this was not the only time monitoring equipment has been faulty at the site.<sup>91</sup> In 1995, a consultant reported that it had not been considered necessary to replace damaged or malfunctioning equipment over the 19 years since installation.<sup>92</sup> In 2003, there were no working monitoring instruments at Dam 5.<sup>93</sup> In 2013, Barr Engineering reported a number of piezometers and other pieces of equipment were malfunctioning.<sup>94</sup> As expert Dr. Steven Emerman explained upon reviewing the operating plans:

There has been a persistent lack of care in the maintenance of the instrumentation that appears to have lasted for about four decades. It is not at all obvious as to why it is necessary for external consultants to inform the dam operators that instruments are malfunctioning or non-functional. It is even more disturbing when the dam operators do not take action on the recommendations of the external consultants.<sup>95</sup>

---

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> *Id.* at 39-40.

<sup>94</sup> *Id.* at 40.

<sup>95</sup> *Id.* at 44.

This is yet another critical issue of dam safety that must be considered before decisions are made regarding the Mile Post 7 Expansion.

While DNR, in its order on the EAW Petitions, dismissed the possibility of a dam failure at Mile Post 7, in fact the tailings basin has already failed.<sup>96</sup> In 2000, a tailings pipeline at the facility broke, resulting in the release of 10 million gallons of tailings slurry into the Beaver River watershed, causing significant impacts to fish and other aquatic life.<sup>97</sup> Northshore eventually paid a penalty of \$200,000, funded a supplemental environmental project that cost \$240,000, and paid an additional \$47,000 for late completion of corrective actions relating to the tailings pipeline break.<sup>98</sup> DNR cannot merely assume that Mile Post 7 is invulnerable to failure, or that it is fundamentally different from other tailings basins that have failed.<sup>99</sup> The tailings basin is at risk of breach—this creates the *potential* for significant environmental effects that the EAW has not even mentioned. Accordingly, DNR should order an EIS or supplement the EAW.

**B. DNR must examine the environmental effects that would occur from a dam breach**

If the Mile Post 7 dams were breached, the environmental results could be not only significant, but catastrophic. The tailings basin currently holds nearly 120 million long tons of tailings in a 2,150 acre lake.<sup>100</sup> After the Mile Post 7 Expansion, ultimately Northshore expects the basin to hold more than 750 million long tons of tailings in a 2,800

---

<sup>96</sup> *Id.* at 25.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.* at 26.

<sup>99</sup> *Id.* at 27.

<sup>100</sup> EAW at 17-18.

acre lake.<sup>101</sup> And all of this mining waste and water would be held in a lake 600 feet vertically above and three miles away from Lake Superior.<sup>102</sup> Undoubtedly the release of this water and waste in a dam breach would be devastating. But the EAW does not mention, let alone analyze, the effects that would occur.

First, the cost in human life could be considerable. The deaths of thousands of people have been caused by tailings dam failures, through drowning and suffocation.<sup>103</sup> In one well-known and horrific example, the Brumadinho upstream tailings dam in Brazil liquefied and collapsed in 2019, killing at least 259 people and spreading a 10-meter-high wave of mud that spread several miles downhill.<sup>104</sup> And aside from these directly caused deaths, leakage of contaminants from the tailings – which can include toxic elements like arsenic or lead – “almost certainly results in increased rates of pathology and, by extension, mortality.”<sup>105</sup>

In addition, the discharge of waste material into river systems would affect water and sediment quality and aquatic life for many miles downstream.<sup>106</sup> The contaminants might kill wildlife and aquatic life directly, or over time through contamination and habitat destruction. After a tailings basin breach in Spain, for example, all the fish and

---

<sup>101</sup> *Id.*

<sup>102</sup> Cmt. Ex. C – 1976 State EIS Findings, Finding 28.

<sup>103</sup> Cmt. Ex. N – D. Kossoff et. al, *Mine tailings dams: Characteristics, failure, environmental impacts, and remediation*, 51 *Applied Geochemistry* 299, 235 (2014).

<sup>104</sup> Cmt. Ex. M – Luiz Henrique Silva Rotta et. al, *The 2019 Brumadinho tailings dam collapse: Possible cause and impacts of the worst human and environmental disaster in Brazil*, 90 *Int. J. App. Earth Obs. Geoinformation* 2 (2020).

<sup>105</sup> Cmt. Ex. N – D. Kossoff et. al, *Mine tailings dams: Characteristics, failure, environmental impacts, and remediation*, 51 *Applied Geochemistry* 299, 235 (2014).

<sup>106</sup> *Id.*

shellfish in the nearby watercourses were killed, leading to the collection of 37 tons of dead fish in the month following the breach.<sup>107</sup> And even after cleanup, contamination might linger in some areas for years after a tailings spill incident.<sup>108</sup>

Here, in the event of a major breach, contaminated water and tailings could reach Lake Superior in a matter of minutes, causing decades' worth of tailings to contaminate its waters, harming water quality, fish and other aquatic life, wildlife, and habitats. The pollution could contaminate drinking water relied on by many people along the lakeshore, including those in Duluth, and harm recreation and tourism in the area. As stated by the 1976 EIS, this would "thwart the entire purpose" of requiring land disposal rather than continued dumping of tailings into Lake Superior.<sup>109</sup> Ultimately, however, although we can predict the environmental effects could be catastrophic, we do not know exactly what the effects of a dam breach would be. This is for a simple reason: The EAW does not include any analysis of those effects. DNR must order an EIS or supplement the EAW in order to study these incredibly significant potential environmental effects.

## **II. DNR cannot depend upon the previous environmental review or its regulatory authority to avoid environmental review now**

In its order denying the EAW Petitions, DNR relied heavily on two factors in determining the Mile Post 7 Expansion did not have the potential for significant environmental effects. First, DNR asserted that a new environmental review would be unnecessary because previous environmental review in the 1970s covered the effects of

---

<sup>107</sup> *Id.* at 235-36.

<sup>108</sup> *Id.* at 237.

<sup>109</sup> Cmt. Ex. C - 1976 State EIS Findings, at 41.

the Mile Post 7 Expansion. Second, DNR asserted that any potentially significant environmental effects would be mitigated by DNR's ongoing regulatory authority over the tailings basin.<sup>110</sup> But neither of these factors excuses DNR from performing environmental review now on dam safety at the Mile Post 7 Expansion.

**A. The 1970s environmental review does not provide sufficient information for DNR to “anticipate and control” effects from a current dam breach**

One of the factors DNR must consider in determining whether to order an EIS is “the extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies...including other EISs.”<sup>111</sup> But environmental effects from a dam breach cannot be “anticipated and controlled” based on the 1970s-era environmental review, because the 1976 and 1977 EISs do not provide sufficient information about the potential for significant environmental effects from a dam breach *now*.

First, the studies are close to 50 years old, and they are, accordingly, out of date. The EISs were not intended to cover all environmental effects that might arise from the tailings basin forever; both the 1976 and 1977 EISs contemplate a 40-year timespan for the tailings basin and evaluate the potential effects of the project within that assumed

---

<sup>110</sup> EAW Ex. J7 - 2022 DNR Record of Decision, at 80-81.

<sup>111</sup> Minn. R. 4410.1700, subp. 7(D).



lifetime.<sup>112</sup> Now, more than 40 years have passed, meaning the EISs do not accurately foretell the environmental effects of a current dam breach.<sup>113</sup>

Second, unsurprisingly, methods of environmental analysis have changed significantly over the years. By modern standards, the dam breach study included in the 1976 EIS is “entirely inadequate.”<sup>114</sup> The 1976 EIS noted little more than the facts that eight residences were in the area the water would occupy and that dam failure would frustrate the objective of ending the disposal of tailings into Lake Superior.<sup>115</sup> By contrast, contemporary industry guidance documents on dam failure require detailed analyses of consequences of a dam breach.<sup>116</sup> A modern dam breach study would include information about the depths, velocities, and paths of the expected tailings flood; discussions of impacts on homes, buildings, businesses, and infrastructure; analyses of harm to wildlife and aquatic life; and the expected effects on long-term air and water quality.<sup>117</sup> None of this information is in the 1970s-era EISs. In addition, a modern dam breach study would consider climate change-related information. Specifically, the study would consider that Minnesota is getting wetter, with more precipitation each year and

---

<sup>112</sup> Cmt. Ex. C - 1976 State EIS Findings, at 7; EAW Ex. J29 - 1977 USACE Final EIS, at 16 (“The longest possible construction time is approximately 40 years with construction just ahead of the rising pond.”); *see also* EAW Ex. J29 - 1977 USACE Final EIS, at 13, 25, 59, 72.

<sup>113</sup> *See Unite Here! Local 5 v. City and Cty. Of Honolulu*, 231 P.3d 423, 451 (Haw. 2010) (holding 1985 EIS was no longer valid for project by 2010, when the environmental impacts were examined only through 2000, even though project was otherwise unchanged).

<sup>114</sup> Cmt. Ex. B - 2021 Emerman Report, at 60.

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

a higher likelihood of heavier, damaging rainstorms.<sup>118</sup> This added precipitation could lead to higher-than-expected water levels in the tailings basin, which could put pressure on the dams. But again, the 1970s-era EISs do not consider climate change effects on dam safety (and nor does the EAW, despite the inclusion of a section on climate change).

Third, circumstances at the tailings basin and in the surrounding area have changed significantly in the past five decades. The 1976 and 1977 EISs both studied the effects of a *downstream* dam—but in 1997 the dam design was changed, and this change has never been subjected to environmental review. In addition, the area likely has developed considerably since the 1970s.<sup>119</sup> Based on a visual examination of the nearby terrain as shown on Google maps, the Silver Beaver Rifle and Pistol Club, Silver Bay Golf Course, and Beaver River South Campsite appear to potentially be within the path of the tailings flood, along with the town of Beaver Bay. The 1970s-era environmental reviews provide no information about the expected path of the flood, or about what current development—houses, businesses, or infrastructure—might be in its way. In addition, the natural resources—wetlands, water quality, wildlife, and aquatic life, to name a few—in the area likely have changed considerably since the 1970s. No information about the current environment or surroundings is, of course, analyzed in the 50-year-old EISs.

In sum, the 1970s-era EISs do not even purport to provide information about what would happen in a current dam breach. They explain nothing about what volume of flood

---

<sup>118</sup> DNR, *Climate Trends*, [https://www.dnr.state.mn.us/climate/climate\\_change\\_info/climate-trends.html#:~:text=Minnesota%20keeps%20getting%20warmer%20and,in%20the%20past%20several%20decades](https://www.dnr.state.mn.us/climate/climate_change_info/climate-trends.html#:~:text=Minnesota%20keeps%20getting%20warmer%20and,in%20the%20past%20several%20decades).

<sup>119</sup> Cmt. Ex. B – 2021 Emerman Report, at 60.

would result, where the flood would go, what development and resources would be affected, or what the long-term effects would be – all critical information with respect to a dam breach. Without this information, DNR cannot actually “anticipate and control” environmental effects of a current dam breach based on the EISs. DNR does not have sufficient detail about what those effects would be. Accordingly, the 1976 and 1977 EISs do not allow DNR to avoid ordering an EIS now.

Additionally, in denying the EAW Petitions, DNR pointed to a 2012 dam breach study by Northshore as part of an Emergency Action Plan. DNR said this study addressed many of the effects of dam failure missing from the EISs.<sup>120</sup> However, the study as released to the public was heavily redacted: “nearly all of the potentially useful information has been blacked out, including maps, tables, model details and assumptions, conclusions, and recommendations.”<sup>121</sup> It is impossible, under these circumstances, to determine whether this study actually provides information that would allow DNR to “anticipate and control effects.” Regardless, this document is entirely useless for fulfilling one of the main purposes of environmental review – providing useable information *to the public* about the environmental effects of a proposed project.<sup>122</sup> DNR cannot rely upon a nonpublic document to avoid doing the public environmental analysis required by the Minnesota Environmental Policy Act.

---

<sup>120</sup> EAW Ex. J7 – 2002 DNR Record of Decision ¶ 223, Document J.

<sup>121</sup> Cmt. Ex. A – 2023 Emerman Report, at 46-47.

<sup>122</sup> Minn. R. 4410.0300, subp. 4A.

**B. DNR’s ongoing regulatory authority is not specific, targeted, and certain to be able to mitigate environmental effects at the tailings basin**

Another factor for DNR to consider in determining the potential for significant environmental effects is “the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority.”<sup>123</sup> DNR may only rely on mitigation measures that are “specific, targeted, and are certain to be able to mitigate” the identified effects to avoid ordering an EIS.<sup>124</sup> In denying the EAW Petitions, DNR relied on DNR’s ongoing regulatory authority under Mile Post 7’s Permit to Mine, Master Permit, and oversight under DNR’s Dam Safety Program to mitigate the environmental effects of the Mile Post 7 Expansion.<sup>125</sup> But DNR does not appear to be exercising its regulatory authority in a way that is specific, targeted, and certain to mitigate the environmental effects of a dam breach, because DNR is failing to exercise all of its regulatory powers over Mile Post 7.

Most importantly, DNR has failed to require a dam safety permit for the Mile Post 7 dams. DNR has asserted that Mile Post 7 did not require a dam safety permit because the tailings basin predated the laws governing dam safety.<sup>126</sup> But in fact, Minnesota’s dam safety laws require that the dams at Mile Post 7 h. Under Minn. Stat. § 103G.531, subd. 1, the only exemption for dam permits is for dams in existence before 1937 – which the Mile Post 7 dams undisputedly were not. In addition, permits under chapter 103G are subject

---

<sup>123</sup> Minn. R. 4410.1700, subp. 7(C).

<sup>124</sup> *Citizens Advocating Responsible Dev. v. Kandiyohi Cnty. Bd. of Comm’rs*, 713 N.W.2d 817, 835 (Minn. 2006)

<sup>125</sup> EAW Ex. J7 – 2002 DNR Record of Decision, at 80.

<sup>126</sup> EAW at 19, n.13.

to “applicable law existing before or after the issuance of the permit.”<sup>127</sup> Accordingly, once laws governing dam safety were in place, DNR had a duty to require Reserve Mining to apply for a dam safety permit. Then, when Northshore acquired the Mile Post 7 facility after Reserve Mining’s bankruptcy, the rules again mandated that DNR require a dam safety permit. As the rules state, no one can transfer ownership of a Class I or II dam without a permit from the commissioner.<sup>128</sup> Finally, DNR’s dam safety rules now require a dam safety permit before the Mile Post 7 Expansion may proceed. The rules require a permit for the “alteration, repair, or removal of a dam,”<sup>129</sup> and “alteration” is defined as any activity that will affect the safety of a dam or alter public waters.<sup>130</sup> Extending and raising the Mile Post 7 dams and adding hundreds of millions of tons of tailings to the tailings basin would affect the safety of the dam, and accordingly, DNR must require a permit. DNR certainly is not acting in a “specific and targeted” way that is “certain” to mitigate concerns about dam safety if DNR does not even require a legally mandated dam safety permit for Mile Post 7.

In addition, as explained above, DNR has failed to require a modern dam breach study that would fully analyze the expected effects of a dam failure at Mile Post 7, and has failed to publicly release the most up-to-date information it has regarding the effects of a tailings basin failure. Nor has DNR sufficiently exercised oversight over Northshore’s operations so as to ensure that Northshore is properly monitoring the stability of the

---

<sup>127</sup> Minn. Stat. § 103G.315, subd. 11(a)(3).

<sup>128</sup> Minn. R. 6115.0370.

<sup>129</sup> Minn. R. 6115.0350.

<sup>130</sup> Minn. R. 6115.0320, subp. 2.

dams. This is shown by the repeated issues with missing or malfunctioning equipment, as explained above. These actions also show that DNR is not acting in a way that is certain to mitigate concerns about dam safety. It is failing in its obligations to inform the public about a potential environmental and safety hazard and to ensure that Northshore is properly monitoring the safety of the dams.

Other issues, too, show that DNR is failing to exert its full regulatory authority over the Mile Post 7 tailings basin. DNR has failed to set a definite term for the 1985 Permit to Mine that Northshore is requesting be amended for the Mile Post 7 Expansion, even though Minnesota statutes require DNR to determine the term necessary for “the proposed mining operation, including reclamation or restoration.”<sup>131</sup> And DNR has failed to require sufficient financial assurance for the Mile Post 7 closure, despite a statutory requirement that DNR review the amount of financial assurance annually.<sup>132</sup> In 2020, Northshore stated in a letter to DNR that its financial assurance for Mile Post 7’s closure costs is only \$4 million in the form of an irrevocable letter of credit.<sup>133</sup> This is clearly an inadequate amount—even in 1988, closure costs were estimated at \$18 million,<sup>134</sup> and they surely have risen due to inflation, new development, and the enlargement of the Mile Post 7 facility over thirty years. These deficiencies reveal a

---

<sup>131</sup> Minn. Stat. § 93.481, subp. 3(a). The 1985 Permit to Mine has a *minimum* duration based on the lifetime of the Peter Mitchell pit, but no limit based on reclamation or restoration, as required by the rules.

<sup>132</sup> Minn. Stat. § 93.49.

<sup>133</sup> Cmt. Ex. O – Cleveland-Cliffs Inc., *Letter to Jennifer Engstrom, DNR*, at 2 (Dec. 15, 2020).

<sup>134</sup> Cmt. Ex. P - *Tailings Basin Closure Consensus Plan for Reserve Mining Co.*, at 38 (Aug. 16, 1988).

pattern, under which DNR has repeatedly failed to exert all of its ongoing regulatory authority over the Mile Post 7 tailings basin.

When DNR has failed to require a dam safety permit, a dam breach study, or the upkeep of dam stability monitoring equipment, and has failed to exercise its regulatory authority over the Mile Post 7 tailings basin in other ways, DNR cannot assert that its ongoing regulatory authority is *certain* to prevent a dam breach. Accordingly, DNR cannot rely on its regulatory authority to avoid an EIS.

### CONCLUSION

The Mile Post 7 tailings basin already holds a massive amount of contaminated water and mining waste within its dams, and if DNR approves the Mile Post 7 Expansion, the tailings basin would hold hundreds of millions of tons more. Before DNR makes a decision about the proposal to expand the tailings basin, it must fully study the potential for significant environmental effects that would arise from a dam breach. As explained by Dr. Emerman, a full environmental review analyzing the effects of a dam breach

enables all stakeholders, including state regulatory agencies, local governments, tribal governments, and the general public, either as individuals or as members of organizations, to determine whether the construction or expansion of a tailings dam is a wise decision. ... There is no way for all stakeholders to decide whether [the Mile Post 7 Expansion] is a wise decision without knowing the full consequences (including all potential environmental, socioeconomic and cultural impacts) in the event of dam failure.<sup>135</sup>

Because of the potential for significant—and in fact devastating—environmental effects from a dam breach at the Mile Post 7 tailings basin, DNR must order an EIS or, at a

---

<sup>135</sup> Cmt. Ex. A – 2023 Emerman Report, at 48.

minimum, supplement the EAW with this information before making any decisions regarding the Mile Post 7 Expansion.

Respectfully submitted,

s/Joy R. Anderson

Joy R. Anderson, Senior Staff Attorney  
J.T. Haines, Northeastern Minnesota Director  
Minnesota Center for Environmental Advocacy  
1919 University Avenue West, Ste. 515  
Saint Paul, MN 55104  
janderson@mncenter.org

Marc Fink, Senior Attorney  
Center for Biological Diversity  
209 East 7th St  
Duluth, MN 55805

Lori Andresen  
Save Lake Superior Association  
P.O. Box 101  
Two Harbors, MN 55616

Elanne Palcich  
Save Our Sky Blue Waters  
PO Box 3661  
Duluth, MN 55803

Chris Knopf, Executive Director  
Friends of the Boundary Waters Wilderness  
2550 University Ave. W.  
Suite 180 S  
St. Paul, MN 55114

Julie O'Leary, President  
W.J. McCabe Chapter, Izaak Walton League of America  
PO Box 3063  
Duluth, MN 55803