Fond du Lac Band of Lake Superior Chippewa

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SENT ELECTRONICALLY
Minnesota Pollution Control Agency
Attention: PolyMet draft §401 Certification Comment
520 Lafayette Road N., Box 45
St. Paul, MN 55155-4194

March 16, 2018

Re: Fond du Lac Band of Lake Superior Chippewa comments and objections to draft NorthMet §401 water quality certification

Dear Commissioner Stine:

The Fond du Lac Band of Lake Superior Chippewa ("Band") appreciates this opportunity to comment on the draft PolyMet Clean Water Act §401 certification. In this letter, the Band submits its comments and objections to the draft certification.[1] As described below, the Band submits these comments both as an interested party and under our delegated Clean Water Act authorities.

I. Statement of Interest and Actions the Commissioner Should Take

The Band is a federally recognized Indian tribe and a member band of the Minnesota Chippewa Tribe ("MCT"). The Band was a cooperating agency on the Project during the National Environmental Policy Act review process, along with the Grand Portage and Bois Forte Bands. All the Bands involved retain hunting, fishing, and other usufructuary rights that extend throughout the entire northeast portion of the state of Minnesota under the 1854 Treaty of LaPointe[2] (the "Ceded Territory"). Band members rely on those rights to hunt, fish and gather natural resources in the Ceded Territory for subsistence, cultural and religious purposes, and the Bands accordingly have a legal interest in protecting natural resources on which those rights depend. In addition, the Fond du Lac Band holds and occupies a Reservation established as the Band's permanent home by Treaty with the United States and which lies directly

[1] *See* Minn. R. 7001.1440 subpt. 1.
[2] Treaty with the Chippewa, 1854, 10 Stat. 1109, in Charles J. Kappler, ed., *Indian Affairs: Laws and Treaties*, Vol. II (Washington: Government Printing Office, 1904), available on-line at http://digital.library.okstate.edu/kappler/Vol2/treaties/chi0648.htm (last visited Mar. 10, 2014).

downstream from the Project. The Band provides governmental services to Band members and other qualifying persons. Among those government functions are those to protect the environment. With regard to water quality, the Band has Treatment as a State status under the federal Clean Water Act for over Reservation waters. The Band accordingly has rights and interests in ensuring that its reservation lands and waters and the natural resources on which Band members depend are not adversely affected by the Project, and therefore submits these comments as an "interested person" under the Minnesota Administrative Rules.[3] Additionally, the Band has an interest in maintaining the water quality of waters of the State and United States affected by this project, because it is a water quality authority that regulates waters downstream of the proposed NorthMet Project under delegated Clean Water Act authority.[4]

Repeating oral testimony that the Band provided at the public hearing in Duluth on February 8, 2018, the Band fundamentally disagrees with MPCA's analysis and conclusions supporting WQS certification for the PolyMet §404 permit. As a downstream water quality authority with a long-term comprehensive water quality monitoring program in place, we know that existing mines upstream of the reservation are polluting reservation waters today.[5] We have not seen sufficient or compelling evidence from other sulfide mines that PolyMet can capture and treat their pollution, nor does it appear that the regulatory framework the state is proposing will assure that environmental controls operate as promised and WQS exceedances (both surface and groundwater) do not occur. We have submitted substantive written comments to the MNDNR on the draft permit to mine, draft water appropriations permits, and draft dam safety permit; and to the MPCA on the draft NPDES/SDS permit and draft air permit. The deficiencies we identified in those draft regulatory instruments also inform our objection to the draft §401 certification.

II. The Band Has Longstanding Concerns that it has Repeatedly Raised with the State and EPA

The Band has repeatedly communicated our concerns that the §401 certification process has not been sufficiently rigorous to ensure the protection of water under the Clean Water Act and Minnesota law and regulations and that from our perspective, the project would not only violate state WQS but also create conditions that could violate tribal WQS and degrade the quality of our water resources downstream. In our comments on the 2009 draft EIS, we noted that MPCA had actually waived certification by default when the USACE permit application was publicly noticed in 2005. As a result, the USACE did in fact re-notice the §404 permit

[3] *See* Minn. R. 7001.0110 subpt. 1.
[4] *See* 33 U.S.C. § 1377(e).
[5] Berndt, M. and T. Bavin, "On the Cycling of Sulfur and Mercury in the St. Louis River Watershed, Northeastern Minnesota", an Environmental and Natural Trust Fund Final Report, August 15, 2012

application, and MPCA did commit to conducting their certification responsibilities. Additionally, we commented:

> As a downstream water quality regulatory agency, Fond du Lac is specifically concerned about this project's potential for further degradation of our most important on-reservation fishery, the St. Louis River. Any additional releases of mercury, or loadings of sulfate that enhance downstream methylation of mercury and bioaccumulation in fish, is an unacceptable violation of our water quality standards authority.[6]

In our review of the supplemental draft EIS, we challenged the conclusion that the NorthMet Project Proposed Action would increase mercury loadings in the Embarrass River but decrease mercury loadings in the Partridge River, with the net effect of an overall reduction in mercury loadings to the downstream St. Louis River.[7] As we explained there:

> This conclusion is not supported by data. The background site-specific analyses and data presented in the SDEIS for total mercury and methylmercury in surface and groundwater is not sufficient to adequately describe existing conditions or evaluate the potential for impact due to changes in hydrology and water quality as a result of the NorthMet Proposed Project. There is very little methylmercury data included in the analysis for any waterbodies, and there is no sediment mercury or methylmercury data used to evaluate and understanding existing conditions. For the data that is presented, there are numerous inconsistencies in reporting limits and method detection limits, casting doubt on data quality and its utility for critical analysis of project impacts.
>
> The SDEIS also fails to evaluate other scientifically documented factors that affect mercury methylation and bioaccumulation. The SDEIS approach to evaluating mercury impacts of the Proposed Project avoids addressing complex but well-studied environmental processes by modeling,[167] and instead relies upon an incomplete mercury mass balance to predict future conditions. It superficially references some of the large body of literature related to sulfate, pH, dissolved organic carbon, iron, and microbial activity, but in some cases erroneously interprets it. Research in northern Minnesota peatlands by Jeremiason, Swain and others has clearly demonstrated the enhancement of mercury methylation by sulfate[168] It considers sediments in downstream waterbodies to be exclusively 'sinks' for mercury, rather than recognizing that these sediments are also active sources of mercury in the ecosystem. The mass balance does not take into account seepage from the saturated overburden at the OSLA, or the load of mercury from Colby Lake stream augmentation. Given the known

[6] Fond du Lac comments to USACE and MNDNR on PolyMet DEIS, February 3, 2010.
[7] PolyMet SDEIS 5-210.

concentrations of mercury in Colby Lake, which consistently exceed the GLI standard, this mitigation measure is clearly not permittable as a discharge that would contribute to an existing water quality exceedance.

The SDEIS assumes that existing tailings in the LTV Tailings Basin will indefinitely adsorb mercury. However, Table 4.2.2-34 Summary of Surface Water Quality Monitoring Data for the Tailings Basin Surface Seeps clearly demonstrates that existing seepage exceed the GLI standard, and are higher than many of the data shown for most of the tributary streams. Given the lack of confidence in predicted seepage capture rates, Tailings Basin seepage is another source that has been greatly underestimated in the SDEIS analysis.

The SDEIS evaluation of mercury impacts is deficient, and the conclusion of no mercury impacts downstream in the St. Louis River watershed is not supported by the information presented. This issue remains a significant impact to reservation and treaty resources.

Subsequent to the DEIS, as the co-lead agencies were determining the information needs to conduct a supplemental environmental review, the USACE asked the Band to clarify our WQS program and concerns as a downstream regulator. The Band responded[8]:

As you review our ordinance, you will note that all designated uses apply to our 22-mile reach of the St. Louis River with the exception of 'Public Water Supply' and 'Cultural - wild rice areas'. All narrative and numeric criteria associated with the designated uses apply, as well as the antidegradation provisions for high quality waters. You will find some of this information generally in Chapter 1, Section 105, "Antidegradation Policy and Implementation", Chapter 3, "General Standards and Designated Uses", and in the appendices, but other specific information may be found throughout the ordinance.

Our water quality standards have been calculated to assume a higher fish consumption rate by Band members, 60 grams/day, than the general public (17.5 g/day), or even the state of Minnesota's consumption rate for the Lake Superior Basin (30 g/day). We will be reevaluating that consumption rate this year during our triennial review process, and may revise it upwards to be consistent with more current studies on Ojibwe diet and traditional lifeways, studies by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) identifying a strong seasonal component to Ojibwe fish consumption rates, and in consideration of the mercury in fish studies we have conducted for Reservation waters. The St. Louis River is the most significant on-reservation fishery resource for the Band, both historically and currently.

[8] FDL letter to USACE (Tamara Cameron), March 2, 2012.

> Based upon results of our water quality monitoring program and additional resource investigations, the Reservation's reach of the St. Louis River is attaining all of its beneficial uses and meeting applicable water quality standards, with the exception of mercury contamination in fish (our human health chronic standard). While mercury concentrations we have measured in St. Louis River samples are below the GLI Chronic Wildlife Standard of 1.3 ng/l, they exceed Fond du Lac's human health chronic standard of 0.077 ng/l. For this reason, we are concerned about any new or expanded discharges to the St. Louis River upstream of the Reservation that may adversely affect mercury bioaccumulation in fish. In order to fully assess the impact of the proposed project on mercury bioaccumulation downstream, we believe it is crucial to collect mercury data in biota (multiple trophic levels) to characterize current conditions in and around the proposed project area, not simply to predict downstream water column mercury concentrations through modeling. There are a number of relevant regional studies and peer-reviewed journal articles that describe sampling strategies and methodologies for lower trophic level taxa such as odonates, crayfish, and prey fish such as yellow perch.

The USACE and other co-lead agencies ultimately declined to require that assessment.

But the Band's concern for protecting downstream aquatic resources is not limited to mercury impacts. We have also clearly communicated our concerns to the state and federal regulatory agencies about protecting our efforts to reestablish lake sturgeon in the St. Louis River upstream of the estuary, where state stocking efforts have been focused. From our SDEIS comments:

> Lake sturgeon have been successfully reproducing in the estuary for several years, and Fond du Lac Resource Management Division's successful reintroduction and tracking efforts in the upper river have been documented.[9] After the construction of hydroelectric facilities on the St. Louis River in the early 1900's, the lake sturgeon population in the upper St. Louis River was isolated from the lower estuary and Lake Superior.[10] The remaining sturgeon population was likely extirpated due to exploitation and pollution from the wood products industry and municipal waste. In addition, many of the upper tributaries were dammed during the extensive white pine logging era (1800's) in order to float logs down during the high water spring runoff. Pollution and

[9] Lake Sturgeon Restoration in the Upper St. Louis River, Minnesota, poster presented at the Great Lakes Lake Sturgeon Coordination Meeting, 3 – 4 December 2012, Sault Ste Marie, MI.
[10] Id.

degraded water quality has been identified as a factor limiting sturgeon abundance in many locations.[11]

A dramatic recovery in lake sturgeon abundance in Rainy River and Lake of the Woods followed improvements in water quality in the Rainy River, which resulted from substantial reductions in the amount of wood fiber and untreated chemical wastes discharged by upstream pulp and paper mills.[12] Evidence from hatchery rearing studies show that juvenile sturgeon can only tolerate salinity < 23 ppt.[13] The Band is concerned about protecting the both the habitat and water quality necessary to support our reintroduction efforts. Uncontrolled contaminant loading from existing mine facilities, along with elevated constituents from the Proposed Project, have the potential to affect the successful establishment of a sustainable lake sturgeon fishery throughout the St. Louis River. This potential impact should be fully evaluated in the SDEIS.

Again, the co-lead agencies declined to address this water quality concern in the supplemental EIS, and repeated their same claim of "an overall reduction in mercury loadings to the downstream St. Louis River upstream of the Fond du Lac Reservation boundary. Therefore the NorthMet Project Proposed Action would not add to any potential exceedance of the Fond du Lac mercury water quality standard of 0.77 ng/l within the reservation."[14] This conclusion in the FEIS was simply an echo from the SDEIS; no new analysis was conducted, and the co-lead agencies baldly refused to address the fact that any increase in mercury loading to the Embarrass River would be a violation under the CWA and Great Lakes Initiative.

III. Actions the MPCA Should Take

As the Band's prior comments and the comments below describe, PolyMet has not shown that it will comply with all applicable pollution control statutes and rules, or the conditions of the permit. For that reason, the MPCA should not issue the §401 certification.[15] Instead, MPCA should not issue a §401 certification until PolyMet and state agencies resolve the pending

[11] Dick, T. A., et al 2006. COSEWIC assessment and update status report on the lake sturgeon (Acipenserfulvescens) in Canada. Ottawa, Ontario. 107 p.
[12] Mosindy, T. E. and J. Rusak. 1991. An assessment of the lake sturgeon population in Lake of the Woods and Rainy River. Lake of the Woods Fisheries Assessment Unit Report 1991- 01. Ontario Ministry of Natural Resources. Kenora, Ontario. 66 p.
[13] A Review of Lake Sturgeon Habitat Requirements and Strategies to Protect and Enhance Sturgeon Habitat March 2011. Steven J. Kerr, Michael J. Davison and Emily Funnell, Fisheries Policy Section, Biodiversity Branch Ontario Ministry of Natural Resources.
[14] PolyMet FEIS 5-10.
[15] *See* Minn. R. 7001.1450 subpt. 1 item B (incorporating Minn. R. 7001.0140 subpt. 2); Minn. R. 7001.0140 subpt. 2 item A.

problems with the draft permit to mine and draft NPDES/SDS permit that are discussed here, and show that PolyMet will be able to comply with all applicable federal and state laws.

IV. The Band's Comments and Reasons Supporting Them

Both federal regulations and Minnesota rules require that a § 401 certification only be issued if "there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards."[16] MPCA must deny §401 certification if it finds that the proposed permittee "will not comply with all applicable state and federal pollution control statutes and rules administered by the agency, or conditions of the permit" or "has failed to disclose fully all facts relevant to the facility or activity to be permitted."[17] In comments submitted to the MPCA regarding the draft PolyMet NPDES/SDS permit, the Band asserts there is ample reason to expect the project to violate applicable water quality standards, but MPCA has not established a sufficient monitoring system (surface and groundwater) to be able to detect violations at either the mine site or plant site. There are substantial information gaps at this late point, after environmental review, regarding both the extent of direct wetland impacts and the verifiable adequacy of proposed mitigation. PolyMet has failed to provide vital analysis of project mercury sources to nearby streams and wetlands, including via groundwater transport, from large scale wetland disturbance, and from plant site and mine site seepage that is not captured or is directly discharged. Further, PolyMet has not provided evidence that it can meet the mercury limit in its single permitted surface discharge point, and MPCA has not imposed a mercury limit on the tailings basin discharge at SD026 proposed for dewatering the former LTVSMC tails in preparation for constructing the additional dams, buttressing and seepage collection system for their project. PolyMet's Cross-Media Analysis is deceptive because it is unreasonably selective in the elements it includes and excludes in its analysis. These problems must be addressed before the MPCA can issue a §401 certification.

In short, the overarching question here is whether the grant of a § 404 federal permit by the Army Corps of Engineers wetlands permit result in violations of water quality standards? For the reasons discussed below, the Band believes that it will.

1. Wetland Impacts Remain Unresolved Because of a Lack of Necessary, Relevant Facts on Wetlands Delineation and the Selected Mitigation Bank

The NorthMet mine project, if permitted, would result in the largest wetlands destruction ever to be approved in this region of the U.S. Army Corps since the Clean Water Act was adopted.

[16] 40 C.F.R. §121.2; Minn. R. 7001.1470.
[17] Minn. R. 7001.1450 subpt. 1 item B; Minn. R. 7001.0140 subpt. 2 items A, C.

PolyMet acknowledges that its project would result in 930 acres of complete loss of wetlands and peatlands from direct removal or immediate fragmentation.[18]

PolyMet proposes to impact 127 wetlands, covering a total of approximately 930.2 acres. Direct impacts from excavation and/or fill are proposed for 903.3 acres of wetland, and the remaining 26.9 acres would become fragmented wetlands (the remnants of a directly impacted wetland). PolyMet has proposed to mitigate the impacts through the purchase of no less than 1282 credits from the Lake Superior Wetland Mitigation Bank, located in the St. Louis River watershed. Arrangements for this credit purchase are already in place, including any necessary approvals from the Minnesota Board of Soil and Water Resources.[19] But the Band has challenged this accounting of direct wetland impacts, in our comments to the MNDNR on the draft permit to mine:

> [B]ased upon an updated GIS analysis done by Dr. Coleman at GLIFWC last summer,[20] the Band believes this fundamental inventory of direct wetland impact acreage has not been confirmed. This issue was raised with the U.S. Army Corps, U.S. Environmental Protection Agency, and U.S. Forest Service staff well before the revised application for the permit to mine was released. At a meeting held at Fond du Lac Resource Management on August 8, 2017, Dr. Coleman presented the results of his analysis which suggests that wetland acreage at the PolyMet mine site may be more than identified during the EIS process, and proposed an approach to resolve the uncertainty raised by his analysis. Dr. Coleman's analysis relied upon newer, higher resolution Lidar elevation data than what was used for PolyMet's original wetland delineation. Using slope analysis and GIS analytical routines, he identified 'lowlands' (i.e., potential wetlands) within the PolyMet mine site project area or in the direct impact footprint that represented up to 28% more area as likely wetlands than PolyMet's analysis. Dr. Coleman suggested that, because of this discrepancy, it would be prudent to verify a set of random points within the areas where his and PolyMet's estimates differ. He proposed that he accompany USACE, MNDNR and PolyMet staff to conduct a field verification, but PolyMet refused to allow him access to the site. The Band understands that staff from the USACE conducted a field verification exercise in September, but to date, despite numerous direct requests to USACE management, we have not been provided with the results of that verification, or even a report of the methods used.

[18] PolyMet Wetland Replacement Plan, Dec. 2017.
[19] PolyMet 401 certification Fact Sheet, p. 8.
[20] See Technical Memorandum from John Coleman to Ralph Augustin, "Wetland mapping at the PolyMet mine site", August 6, 2017.

> Since so many regulatory decisions are based upon the determination of directly-impacted wetlands at the mine site, it is imperative that this basic inventory be accurate. The MDNR should not issue a permit to mine for this project until this issue is resolved with a clear analysis of the field verification data.

When we questioned MPCA staff about their understanding of the status of this wetland field verification at a tribal consultation on March 1, 2018, they responded that to their knowledge, that verification had not been completed and they were incorporating the original EIS acreage in their permitting documents. The Band has since learned, through a third party, that the US Army Corps of Engineers had indeed discovered discrepancies between the original delineation and random field checks of Dr. Coleman's updated delineation, at a field visit in September 2017.[21] The Corps has evidently tasked PolyMet with verifying the wetland delineation, but has not yet received a report from the company.

The full and proper delineation of the wetlands impacted by the project obviously constitute "facts relevant to the facility or activity to be permitted" since the replacement of the impacted wetlands acreage is necessary under state law. Certainly, no permits should be issued until this most fundamental environmental analysis has been completed and fully scrutinized by all of the responsible agencies, the tribal cooperating agencies and EPA, and the public – most appropriately in a supplemental EIS. Not only is the directly-impacted wetland acreage vital to accurately inventory, but the wetland types must also be documented. It is impossible to have trust in the regulatory process when inaccurate baseline information has been incorporated into multiple permitting decisions, especially for a project as large, controversial, and environmentally risky as this one, and after more than ten years of review. For the Band – and the public – to have confidence in a new, accurate direct wetland impact acreage total, the Corps should be taking responsibility for that validation. In the meantime, the MPCA should withdraw its draft §401 certification until a legitimate correction to this primary data element is provided.[22]

2. The Proposed Wetland Mitigation May Not Be Sufficient, and the Suitability of the Wetlands Bank Must be Addressed

The CWA § 401 certification Fact Sheet states "The Wetland Replacement Plan provides updated information that is consistent with PolyMet's request for 401 Certification, its application for a Permit to Mine, and with the information currently submitted by PolyMet to USACE as part of the Section 404 permitting." As the Fact Sheet indicates, both federal and state laws and regulations protect wetlands and govern PolyMet's proposed mine. Minnesota

[21] *See* Exhibit A, Conversation Record Between Marty Rye, SNF Forest Hydrologist, U.S. Forest Serv., and Steve Eggers, Senior Ecologist, U.S. Army Corps of Eng'rs (Mar. 9, 2018).
[22] Minn. R. 7001.0140 subpt. 2 item C.

law provides that it is the policy of the State to preserve wetlands[23], and requires that permits to mine must include a wetlands replacement plan approved by the MDNR commissioner.[24] That plan must "replace the public value of wetlands lost" from the permitted activity, according to a set formula by which the lost wetlands are replaced by a certain amount of new wetlands.[25] This may be done through purchasing credits from an approved wetland bank.[26] The bank offers credits based on the work it does to establish or restore wetlands, according to the type of land restored and the sort of work that the bank does.[27] Credits are then obtained according to a "minimum replacement ratio" under which a permittee must obtain a certain amount of credits for each acre impacted, according to the type of wetland impacted and the location of the replacement wetland.[28] In short, then, the amount of replacement credit a permittee can purchase depends on the amount of acres being impacted – in PolyMet's case, outright destroyed – the location of the replacement acres, and what exactly the bank is doing to restore wetlands.

There are serious and substantial questions about whether the proposed wetland replacement program meets these requirements and the absence of relevant information prevents a determination on whether compliance can be verified. More information needs to be released about what the bank is doing and whether they can meet the ratios required here.

As the Band submitted to the MNDNR in comments on the draft Permit to Mine,

> The amended Permit to Mine application that was released to the public on December 13, 2017 included a completely new and unanticipated wetland replacement plan. This new plan was not included in any environmental review, nor does the permit application provide sufficient information for the Band to determine whether the provisions of Minnesota Rule 8420 have been met. While this fundamental departure from the mitigation plan that has been in front of the public for the past eight years may, on its face, represent an improvement with regards to the location and type of wetlands proposed for mitigation, we are not able to verify that the wetland bank that is the source for mitigation credits has sufficient credits available to replace the public value of the wetlands that will be lost at the site. The Band objects to approval of the wetland replacement plan at this time; the necessary and required information for the application has not been included.

[23] Minn. Stat. § 103A.202.
[24] Minn. Stat. § 103G.222 subdiv. 1(a) (incorporating Minn. Stat. § 93.481 subdiv. 5); Minn. R. 8420.0930 subpt. 2 item B (incorporating Minn. R. 8420.0500 to 8420.0528, 8420.00800, and 8420.0810).
[25] Minn. R. 8420.0522.
[26] *See* Minn. R. 8420.0522 subpt. 4 subpt. 7 item A(4).
[27] Minn. R. 8420.0526.
[28] Minn. R. 8420.0522 subpt. 4.

The Band has sought clarifying information about the quality, condition, and status of the wetlands in the bank with whom PolyMet has purportedly secured a purchase agreement (EIP Credit Co. LLC; Lake Superior Wetland Bank). We have only been able to learn that very few acres of wetland qualify as 'restored', since the bank 'restoration' has only involved plugging ditches with felled trees in drained peatlands. There has not been any vegetation enhancement, and it is uncertain that appropriate hydrology has been reestablished, since this wetland bank was only certified a few years ago. In fact, as recently as March 2013, the state wetland Technical Evaluation Panel (TEP) raised substantial criticisms in its findings and recommendations after reviewing EIP's Concept Plan.[29] The vast majority of the credits available were ultimately classified as 'preservation', which should demand a substantially higher replacement ratio required than for restored wetlands. Given that a majority of the wetlands in the Wetland Replacement Plan are not actually restored wetlands, it is clear that the CWA §404 permit will result in a net loss of wetlands in the St. Louis River watershed and the 1854 Ceded Territory, which is inconsistent with USACE policy and Minnesota wetlands law. The Band considers this an unacceptable degradation of high quality treaty resources.

There are more significant questions about whether the chosen mitigation bank can actually deliver on an adequate mitigation of the wetlands that PolyMet will destroy. In 2014, the bank submitted its draft mitigation bank plan to an Interagency Review Team, of which the EPA was a part, seeking approval for operation as a wetland bank under the Federal Mitigation Rule, 40 C.F.R. pt. 230, subpt. J.[30] EPA raised significant concerns about many elements of the proposed plan, including "[l]ack of hydrologic and hydraulic analysis to depict site conditions and site design," "[l]and title acquisition status from the County and/or State and obstacles anticipated in obtaining title to these lands," "long term management" including "the need to develop a Plan, which discusses specific activities to be undertaken after release from monitoring with a discussion of how these activities will be funded (in perpetuity)," the need to develop a management strategy . . . to address potential unforeseen changes in site conditions," and the establishment of performance standards.[31] And as particularly relevant here, the bank was required to justify its calculation for the level of crediting its lands should receive, and how it could credit some lands for enhancement, that were actually preservation areas.[32] Before the certification is issued, there should be an accounting of how these issues were addressed, if at all, before the bank was authorized to offer credits. This is especially important given that, as far as the Band is aware, this bank has never been involved in such a large mitigation plan.

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[29] *See* Exhibit B, Zim Mitigation BWSR.TEP Findings, March 12, 2013.

[30] Exhibit C, Letter from Peter Swenson, Chief, Watersheds & Wetlands Branch, Region 5, U.S. EPA, to Tamara Cameron, Chief, Regulatory Branch, St. Paul Dist., U.S. Army Corps of Eng'rs, transmitting comments on draft mitigation plan (Sep. 18, 2014).

[31] *Id.* at 2.

[32] *Id.*

The use of the 1:1 replacement ratio for these wetlands is also totally insufficient. Wetland replacement must "be of a size sufficient to ensure that it provides equal or greater public value than the impacted wetland it will replace."[33] The wetlands PolyMet will destroy are exceptionally high quality given their biodiversity. All that is known about the bank's replacement wetlands indicates that they are not nearly as high quality, and they only address mitigation for one wetland type (Type 8), whereas the PolyMet project needs to mitigate six wetland types. A 1:1 ratio will therefore not replace the "public value" of the wetlands that will be destroyed. The draft permit must be revised to either increase the ratio to ensure that the bank provides more replacement wetlands, or that the replaced wetlands are of a higher quality. If the current bank cannot make that assurance, the permit must require other arrangements that comply with Minnesota law.

3. The Antidegradation Determination Rests on an Incomplete Wetlands Mitigation Plan That Is Not Legally Sufficient

The MPCA's PolyMet Clean Water Act Section 401 Water Quality Certification Program Fact Sheet states that[34]:

> PolyMet's submissions provided the MPCA with the information necessary to determine that the antidegradation standards in Minn. R. 7050.0265 are satisfied. The MPCA has made a preliminary determination that the submittal demonstrates that any water quality degradation caused by the proposed Project will be prudently and feasibly avoided and minimized, existing and beneficial uses will be protected, and the proposed activity is necessary to accommodate important economic or social changes in the geographic area in which degradation of existing high water quality is expected.

However, PolyMet's wetlands mitigation plan that supports this determination is not sufficient to meet the antidegradation standards, because it relies on an incomplete wetlands delineation.

The Minnesota Administrative Rules provide that §401 certifications for new federal licenses can only be issued when "existing uses and the level of water quality necessary to protect existing uses are maintained and protected."[35] Existing uses can be preserved by "compensatory mitigation . . . when there is a physical alteration to a surface water" only when certain conditions are met, including that prudent and feasible alternatives are not available to avoid or minimize adverse impacts, the mitigation is sufficient in quality and quantity to ensure

[33] Minn. R. 8420.0522 subpt. 4 item D.
[34] PolyMet 401 certification Fact Sheet, p. 13.
[35] Minn. R. 7050.0265 subpts. 1(D), 2.

replacement of the lost surface water, the mitigation is accomplished by "establishing or enhancing a surface water of the same type," and that it occurs within the same watershed "to the extent prudent and feasible."[36]

If a permittee is seeking compensatory mitigation, then it is required to provide to the MPCA a proposed compensatory mitigation plan.[37] The plan must, among other things, provide a "description of how compensatory mitigation will establish sufficient quality and quantity of uses to preserve existing uses and the level of water quality" needed to preserve them, and "a proposal for monitoring and reporting the changes in existing uses and the level of water quality necessary to protect existing uses of the surface waters in which mitigation will occur."[38] Because PolyMet proposes to destroy an extensive area of wetlands that are "surface waters" under Minnesota law, it has submitted a wetland mitigation plan that it claims will meet these standards.[39] However, it is far from clear that PolyMet's proposed mitigation plan is sufficient, and the §401 certification should not be granted until these issues with the antidegradation standards can be addressed.

The Band has expressed our concerns regarding the incomplete wetland delineation at this critical moment where the public has its single opportunity to review relevant draft permits, and our conclusion that the wetland replacement plan will result in a net loss of wetlands. Those issues alone should be cautionary indication that PolyMet has not provided sufficient evidence that their proposed project will not result in water quality exceedances or degradation of aquatic resources, and the §401 certification should not be issued. But we have additional perspectives on mercury impacts to share, or in some cases reiterate, in response to the draft certification decision and rationale provided by the agency.

4. Mercury Release from Ground Disturbance Has Not Been Properly Considered

The Band has consistently raised concerns for the lack of quantification or even consideration for the mass of mercury that will be released simply by the immense scale of ground disturbance in a peat/wetland dominated landscape. To recap:

> The Project would disturb 1,725 acres of surface lands at the Mine Site and have the greatest effect on upland forest land cover types. The majority of additional ground

[36] Minn. R. 7050.0265 subpt. 3.
[37] Minn. R. 7050.0285 subpt. 2. The permittee must also submit an antidegradation assessment that includes the same information that must be submitted for an NPDES antidegradation assessment. *Id.* (incorporating Minn. R. 7050.0280 subpt. 2). PolyMet has already submitted this information in its application for NPDES permits and incorporates those submissions by reference here. *See* Preliminary Determination for 401 Certification, p. 1.
[38] Minn. R. 7050.0285 subpt. 2 items C, D.
[39] Antidegradation Assessment Prepared for PolyMet Mining, p.3.

disturbance for the Project, including approximately 2,190 acres of Plant Site (including the Colby Lake Pipeline Corridor) and 120 acres of Transportation and Utility Corridors will occur in already disturbed locations.[40]

This description of the 'footprint' of the PolyMet project deliberately downplays the significance of a thousand-acre wetland direct destruction (accuracy as yet unconfirmed) and leaves unstated the potential for thousands more acres of indirect wetland impacts. It exaggerates the predominance of 'already disturbed locations' by neglecting to account for the relatively unimpacted condition of the transportation and utility corridors and the new wetland disturbances that will occur at the toe of the flotation tailings basin (FTB). Yet it completely fails to acknowledge easily predictable impacts such as mercury release from peatland disturbance as the case for nondegradation is being introduced, despite numerous comments from multiple parties during environmental review. For example:

In addition to waste rock sources for mercury, much of the overburden to be excavated prior to mining will contain peat. Peat preferentially sequesters mercury, largely from atmospheric sources, by binding with sulfate groups present in organic matter. Peat can sequester more than 20 times atmospheric emission levels, a rate significantly higher than other land types (Grigal 2003). The peat-rich overburden will be used onsite for construction and reclamation purposes and will be subjected to periodic wetting and drying cycles. Recent research has shown that repeated wet-dry cycles cause oxidative release of mobilized sulfate, mercury, and in particular, methylmercury (Wasik et al. 2015). The latter compound is particularly toxic as it is more readily available for uptake in organisms and tends to biomagnify in the food chain. Similarly, water level fluctuations that would be a part of any groundwater/surface water discharge downgradient of the containment barrier will produce increased mercury mobilization. No analysis of this transport mechanism in groundwater or surface water is provided in the FEIS.[41] The MPCA cannot determine whether the discharge of water from the mine site will comply with water quality standards until the necessary studies are done analyzing the release of mobilized sulfate, mercury, and methylmercury from the stored peat overburden. The §401 certification cannot be issued until this is complete and a determination made that the water quality standards can be met.[42]

5. More Modeling is Required for the Release of Mercury through Groundwater to Surface Water

[40] Id., p. 9.
[41] Gadway Quantum NorthMet EIS comments provided to Minnesota Center for Environmental Advocacy, Dec. 17, 2015.
[42] *See* Minn. R. 7001.1450 subpt. 1 item A (MPCA can issue §401 certification upon "a finding that the discharge" at issue will comply with the Clean Water Act's water quality standards provisions).

We fully agree with USEPA that the tailings basin will contribute to water quality impacts by leaking contaminants into groundwater hydraulically connected to surface water. The FEIS provides no estimate of the release of mercury to groundwater likely to be transported to receiving water such as the Partridge River. Again, as noted during environmental review:

> The groundwater transport model omitted mercury altogether. The abbreviated mass balance for mercury does not address groundwater flows from mine features and makes unrealistic assumptions about the potential for mercury addition by both leaching and deposition. Note that the Partridge and Embarrass Rivers already exceed the mercury water level standard of 1.3 ng/l; the additional leachate and atmospheric-deposited mercury will unquestionably increase total mercury loading to receiving waters.[43]

Without sufficient modeling of how mercury released into groundwater will be transported into receiving surface waters, the MPCA cannot find that water quality standards in those surface waters will be maintained. Accordingly, the §401 certification should not be granted until such modeling is done and can be assessed.

6. Additional Sources of Mercury Have Not Been Adequately Considered

Based on environmental review documents, the hydrometallurgical waste facility would sulfate concentrations above 7,300 milligrams per liter (mg/L), 700 times Minnesota's wild

rice sulfate standard and, over the proposed 20 years of operations, would hold 3,280 pounds of highly toxic mercury[44]

• The hydrometallurgical waste facility would be built on an unstable foundation, including wetlands and slimes, immediately adjacent to a stream. The draft state agency permits we have reviewed do not require PolyMet to excavate unstable foundations, or ship concentrated waste to a dedicated waste storage facility in a safer location.

The WWTS discharge has a limit in the draft NPDES/SDS permit of 1,000 ng/l and 2,000 ng/l, based upon new source guidelines. The GLI criterion is the applicable standard for any receiving water in the Great Lakes Basin. This represents a significant new source of mercury to waters that are already impaired for mercury and do not have a TMDL.

Dust>>>>>>>>>

7. There is Inadequate Treatment to Meet Mercury Limit

[43] Gadway Quantum.

[44] PolyMet FEIS, Appendix A; PolyMet RS33/RS65 Hydrometallurgical Residue Characterization, Feb. 2007.

PolyMet's claim that mercury concentrations in existing LTVSMC tailings seepage is below the 1.3 ng/L Great Lakes Initiative (GLI) water quality standard is based on selective and misleading reporting of available information. Even though PolyMet claims that passing through LTVSMC tails reduces mercury in water, FEIS data on existing conditions at the tailings site clearly contradicts this claim. Mean mercury concentration in the existing Cell 2E pond is 1.4 ng/L; at the toe of the existing tailings facility mercury concentrations range as high as 153 ng/L with a mean concentration of 4.9 ng/L. Contrary to PolyMet's assertion, data presented in the FEIS shows that in passing through existing LTVSMC tailings, mean mercury concentration *more than triples*.[45]

Table 4.2.2-23 Existing Pond Water and Groundwater Quality at the Toe of the Tailings Basin

Parameters	Units	Pond Water Quality (Cell 2E)	Groundwater Evaluation Criteria	Toe of Tailings Basin (GW-001, GW-006, GW-007, GW-008, GW-012, Surficial Aquifer)		
General		Mean		Detection	Mean[1]	Range
Metals – Total						
Aluminum	µg/L	--	200	57 of 83	**1,522**	<10–29,000
Antimony	µg/L	--	6	0 of 80	0.25	<0.25
Arsenic	µg/L	5	10	38 of 80	1.8	<0.25–7.1
Barium	µg/L	--	2,000	82 of 83	133	<5–452
Beryllium	µg/L	--	0.08	4 of 80	**0.19**	<0.1–1.0
Boron	µg/L	278	1,000	66 of 83	319	<25–554
Cadmium	µg/L	--	4	10 of 80	0.17	<0.1–2.0
Chromium	µg/L	--	100	33 of 80	4.3	<0.5–68.2
Cobalt	µg/L	1	--	72 of 80	1.9	<0.1–17.9
Copper	µg/L	2	1,000	79 of 80	7.8	<0.35–205
Iron	µg/L	--	300	69 of 83	**4,709**	<25–31,000
Lead	µg/L	--	--	18 of 80	0.87	<0.25–8.5
Manganese	µg/L	100	50	83 of 83	**1,299**	10.0–4,130
Mercury	ng/L	1.4	2,000	55 of 72	4.9	<0.25–153

The information available in the draft NPDES/SDS permit and draft permit to mine shows that the PolyMet surface discharge from its wastewater treatment system, without definitive treatment for mercury removal, may cause or contribute to exceedances of Minnesota's Lake Superior Basin water quality standard for mercury[46], and exacerbate existing impairments for mercury in the water column and in fish tissue in the Embarrass River, the Embarrass chain of lakes and other downstream waters.

For outstanding international resource waters (OIRWs) of the Lake Superior Basin, which includes all receiving waters downstream of the PolyMet project, if a designated use of the

[45] PolyMet FEIS, Table 4.2.2-23, 4-126, metals excerpt above.
[46] Minn. R. 7052.0100.

water body is impaired, "there can be no lowering of the water quality with respect to the GLI [Great Lakes Initiative] pollutants causing the impairment."[47] These waters downstream of the project are all impaired due to mercury in the water column or methylmercury in fish tissue; therefore no further impairment may be allowed. The §401 certification should be withheld until compliance with these standards can be established.

8. There are Broader Mercury Cycling and Watershed Process Issues Which the Band Has Repeatedly Raised, But Which Are Not Properly Considered in the Draft Certification

The Band has provided extensive comments throughout the environmental review process about the analytical weaknesses and omissions and general lack of critical data in PolyMet's portrayal of their mercury impacts. From comments on the final EIS:

> The background site-specific analyses and data presented in the FEIS for total mercury and methylmercury in surface and groundwater is not sufficient to either adequately describe existing conditions or evaluate the potential for impact due to changes in hydrology and water quality as a result of the NorthMet Proposed Project. There is very little methylmercury data included in the analysis for any waterbodies, and there is *no* sediment mercury or methylmercury data used to evaluate and understanding existing conditions. For the data that is presented, there are numerous inconsistencies in reporting limits and method detection limits, casting doubt on data quality and its utility for critical analysis of Project impacts.

The Band echoed the expert review conclusions provided by Dr. Brian Branfireun to WaterLegacy in their comments on the FEIS. We repeat substantial relevant summaries of Branfireun's analysis and our mercury concerns from FEIS comments below.

Dr. Brian Branfireun, an internationally recognized expert in the fields of watershed hydrology, biogeochemistry and the environmental cycling of mercury, provided his opinion the NorthMet Project[48] on problematic background data, including:

- Data in Table 4.2.2-14 (Partridge River) is questionable; too many non-detects for total mercury, but even with the questionable non-detect results, the maximum result is quite elevated, with an increasing trend in mean concentrations moving downstream. New methylmercury data has errors calling QA/QC into question.

[47] Minn. R. 7052.0300, subp. 2 (emphasis added).
[48] Branfireun, B., *Expert Review of the NorthMet Mining Project and Land Exchange Final Environmental Impact Statement* (December 2, 2015), prepared for Paula Maccabee, Counsel/Advocacy Director for WaterLegacy.

- Data in Table 4.2.2-32 (from Barr 2014d), has too many non-detects, with inconsistent detection limit for that used in Partridge River data; range of concentrations has no upper bound.
- The FEIS approach for dealing with non-detect data is not scientifically supported.

He also noted that the reported high proportion of total mercury as methylmercury is indicative of a strongly methylating environment. This percentage can be interpreted as an indicator of the efficiency with which a sediment or landscape can methylate inorganic mercury.

- % methylmercury (MeHg) in Partridge River increases from 2.2% at SW-001 to 14.6% at SW-004a and remains ~10% downstream; any percentage over 3% MeHg is clear evidence of net MeHg production in the watershed.
- %MeHg in Embarrass River, if one accepts the questionable range, is 10.4% and 8.8%.
- Upstream tributaries are also draining a landscape of high mercury methylation potential; associated with high percentage of wetland land cover, especially ombrotrophic bogs and peatlands.
- Project area watersheds are highly sensitive to both hydrologic impacts (changes in surface or subsurface hydrology) and any additional sulfate deposition (from water or atmospheric deposition).

Other comments on data quality included inconsistencies between newly added source data and the FEIS (Table 4.2.2-15), and continued confusion about detection levels. He notes the failure of the FEIS to conform to standard approaches for data collection and presentation, and states that "The FEIS presentation of arithmetic means and ranges precludes any assessment of explanatory power in the data set, biases the interpretation of changes in loads, and cannot be used to satisfy any analyses of appropriate sample size."

The FEIS also fails to evaluate other scientifically documented factors that affect mercury methylation and bioaccumulation. The FEIS approach to evaluating mercury impacts of the Proposed Project avoids addressing complex but well-studied environmental processes by modeling,[49] and instead relies upon an incomplete mercury mass balance to predict future conditions. It superficially references some of the large body of literature related to sulfate, pH, dissolved organic carbon, iron, and microbial activity, but in some cases erroneously interprets it. Research in northern Minnesota peatlands by Jeremiason, Swain and others has clearly

[49] FEIS 5-462.

demonstrated the enhancement of mercury methylation by sulfate.[50] It considers sediments in downstream waterbodies to be exclusively 'sinks' for mercury, rather than recognizing that these sediments are also active sources of mercury in the ecosystem.

The FEIS acknowledges the need to incorporate Project design elements to reduce sulfate losses to both surface and groundwater pathways,[51] but the presumed seepage capture rates and unspecified treatment technology do not provide enough support to conclude that the proposed mitigation would be effective. The small tributaries near the mine site are clearly sulfate-limited; *any* increase in sulfate loading to the watersheds (either by direct discharge or additional atmospheric deposition) will increase net methylmercury production. The FEIS is inconsistent in its discussion of the sulfate/mercury methylation relationship; in FEIS 5-21 that relationship is "only partially understood", while FEIS 5-313 cites Jeremiason et al (2006) in recognizing that even small increases of sulfate to sulfate-poor wetlands can increase mercury methylation.

Branfireun questions other FEIS conclusions about the methylating environment,[52] and states:

> *As a scientist who has spent my career studying methylmercury, I am troubled that the FEIS argues that there is insufficient scientific knowledge to develop a mechanistic model to evaluate the risk to surface waters from enhanced methylation in the impacted watershed, yet is comfortable speculating about the future geochemical environment in a flooded pit 55 years from now in order to dismiss the potential for enhanced methylation" (in the West Pit). He notes the failure of the FEIS to adequately consider the scope of impacts the Project would have due to changes in hydrology, arguably one of the most significant impacts relevant to increased mercury methylation and mobilization. Further, he argues that a mass balance model* cannot *by definition incorporate mechanistically the input and removal processes for mercury, and* cannot *address the biogeochemical aspects of mercury methylation across the landscape,* ***which are at the root of the potential impacts associated with the PolyMet proposal*** (emphasis added).

In his discussion regarding the MPCA's Mercury Risk Estimation Method (MMREM), Branfireun refutes the assumption of proportionality between mercury deposition and mercury in fish. He considers it an 'archaic approach' which "does not reflect current scientific through or the best available tools." He cautions that "without knowledge concerning the hydrological interactions

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[50] Jeremiason, J.D, D.R. Engstrom, E.B. Swain, E.A. Nater, B. M. Johnson, J.E. Almendinger, B. A. Monson, and R. K. Kolka, *Sulfate Addition Increases Methylmercury Production in an Experimental Wetland,* Environ. Sci. Technol. 2006, *40*, 3800-3806.
[51] FEIS 5-232.
[52] *Id.*

between surface waters and the watershed, predictions about the dominant source(s) of mercury to biota are not possible. By focusing on this inappropriate method of predicting Project mercury impacts,

> *the FEIS "obfuscate(s) the fact that the real concern with the NorthMet development, in my opinion, is not an appreciable increase in local atmospheric deposition of mercury to lakes, but its changes to the hydrology of watersheds, subwatersheds and their surface streams and rivers that are proximal to the propose mine and tailings site. These hydrological changes will increase the methylmercury production potential of the landscape, and ultimately engender downstream impacts on the St. Louis River.*

This conclusion itself is a clear and compelling argument against the §404 permit and the §401 certification for the NorthMet Project. To further connect the technical flaws the Band has identified in the FEIS to Project mercury impact predictions, Branfireun established the correlation between wetland drawdown and enhanced mercury methylation. Project changes to the natural hydrology of the mine site and at the tailings basin will amplify drought-rewetting cycles, and:

> *…independent of any additional releases of sulfate or mercury from the proposed NorthMet development, dewatering of wetlands surrounding the tailings basin through seepage collection and even modest impacts on water table position by underdrainage of mine site peatlands through open pit dewatering could increase total mercury, methylmercury and sulfate in the Partridge, Embarrass and ultimately the St. Louis River.*

Branfireun also provides a clear analysis of Project sulfate deposition impacts, demonstrating that the atmospheric sulfate loading from the Project would be nearly 4X the background sulfate deposition. The experimental wetland research conducted by Jeremiason and Coleman-Wasik showed significant increases in pore water methylmercury, methylmercury export and sulfate regeneration at enrichment levels equivalent to the Project's potential increase in deposition. Consequently:

> *The potential near-doubling of methylmercury export from methylating peatlands receiving an additional sulfate load from the proposed PolyMet development would be reflected in methylmercury concentrations in the upper tributaries, and the Embarrass and Partridge Rivers, given the role these wetlands play in supplying water to these streams and rivers. Increased methylmercury would also be expected to impact the Upper St. Louis River…*

In his concluding statement, Branfireun completely disputes the FEIS conclusion that the proposed NorthMet Project would not increase risks of methylmercury production and transport in the Partridge and Embarrass River watersheds, and that:

> *It is my opinion that the NorthMet development could create a substantial risk of ecologically significant increase in water column and fish methylmercury concentrations in downstream waters, including the St. Louis River. Finally even if appropriate monitoring for biogeochemical changes in wetlands and sediments near the development were to be designed and implemented (a difficult and complex undertaking requiring collection of baseline data not supplied in the FEIS), it is highly likely that lag times for expression of methylmercury increases, multiple mechanisms of transport, and the likelihood of legacy regeneration of sulfate stored in the watershed would preclude effective adaptive management prior to irreversible impairment of downstream waters.*

The FEIS evaluation of mercury impacts is exceptionally deficient, and the conclusion of 'no mercury impacts' downstream in the St. Louis River watershed is not supported by the information presented. Our analysis and the expert opinions of mercury researchers conclude that **the FEIS approach is not scientifically defensible, and the NorthMet Project is likely to result in significant and long-lasting downstream mercury impacts to aquatic life, wildlife and human health.** Furthermore, the Band would bring attention to the alarming lack of regulatory controls for the very processes that will most likely contribute to the identified mercury impacts, with the sole exception of the §404 permit and connected §401 certification.

To date, neither MPCA nor any of the state or federal co-lead agencies for the environmental review have specifically responded to these well-supported analyses. The Band is convinced that the PolyMet project, when examined holistically for its direct and indirect impacts to surrounding watersheds and waterways, will contribute to mercury exceedances in downstream and downgradient waters, and will contribute to existing wildlife and human health impairments. Section 401 certification should not be issued for the project as it cannot comply with all applicable pollution control requirements.

9. The Cross-Media Mercury Analysis Is Insufficient

The cross-media mercury analysis has been strangely (or strategically) constrained from evaluating many obvious pathways for mercury release and methylation. PolyMet explicitly excludes any effects of mercury in tailings basin seepage in the "water component" of their cross-media analysis of mercury and methylmercury, again assuming it "will be collected be collected by the FTB seepage capture systems."[53] But more broadly, any impacts of mercury seepage cannot be included in the mercury analysis, because PolyMet has not been required to

[53] PolyMet Cross-Media Mercury, *supra*, p. 19.

characterize mercury in wastes or wastewater either during environmental review, or in its Permit to Mine and NPDES/SDS permit applications.

PolyMet is proposing that any mine site water not in direct contact with mining surfaces, OSLA storage or construction will be considered non-contact "stormwater." This stormwater will not be managed to prohibit the release of dissolved or suspended contaminants to surrounding surface waters, including wetlands. The stormwater "will be separated from mine water and controlled through a system of ditches, dikes, and ponds; and will discharge off-site either directly or after being routed through on-site sedimentation ponds to reduce total suspended solids (TSS)."[54] PolyMet has not provided any analysis for either the effect of mercury in mine site stormwater, or the effect of sulfate in stormwater on mercury methylation within the "wetland of interest" or any other adjacent wetlands that may receive captured mine site stormwater. Despite this omission, it should be recognized by the regulatory agencies that all stormwater channeled off the proposed PolyMet mine would effectively be "contact" stormwater because of the ubiquitous deposition of reactive dust from blasting and hauling. The impacts of this direct surface water drainage to wetlands and streams adjacent to the proposed PolyMet mine must be included in any cumulative analysis of the impacts of the project on mercury release, methylation and transport.

The cross-media analysis also fails to evaluate the impacts of loading inorganic mercury directly to wetlands, which are primary sites for methylation. In spite of more than thirteen years of planning for the NorthMet project, PolyMet has not been required to monitor the wetlands into which treated tailings basin seepage would be discharged. Barr's memo on the mercury mass balance explained that degradation analysis would be performed a mile or more away from the north side of the tailings facility, rather than the Trimble Creek and Unnamed Creek headwater wetlands, because "No mercury monitoring has been conducted in these wetlands."[55] This critical data gap has been noted in the Band's comments on the draft NPDES/SDS permit as well.

PolyMet neglected to incorporate any analysis of the impacts of drying and rewetting on any wetlands affected by dewatering at the mine site or FTB seepage collection in any aspect of its cross-media analysis, despite specific comments regarding this methylation pathway by Branfireun and others.

The PolyMet cross-media analysis claims, "The primary potential source of mercury emissions for the Project is the Autoclave Stack, which will be located at the Plant Site. Mercury emissions

[54] *Id*., p. 13.
[55] Barr 2017 Mercury Mass Balance, *supra*, p. 4, autop. 348 of PolyMet NPDES/SDS App. Vol. III – WWTS, *supra*.

are concentrated at the plant site, particularly on the south side of the site, where the plant facilities are, contributing as much as 3 percent of mercury background concentrations south of the tailings site.[56] The analysis further notes that, along with increased surface discharge of mercury from the wastewater treatment system (WWTS) at the Second Creek discharge point (SD026),[57] "Mercury deposition from Project air sources is also focused in the Second Creek watershed."[58]

But the PolyMet cross-media analysis fails to evaluate mercury air deposition from plant site stack emissions at any site near the emissions sources. The closest site at which air deposition to Second Creek is evaluated is 11 miles downstream at MNSW8.[59]

Even so, PolyMet concluded that sulfate from Project air emissions could cause a small increase (0.003 to 0.005 ng/L) in water column methylmercury in the Partridge River and Embarrass River watersheds, but this small increase would not be "measurable."[60] The only "measurable" change PolyMet acknowledged was an increase due to the surface discharge of treated water at the headwaters of Second Creek (SD026) prior to their mine operations, as the LTVSMC tailings are being dewatered.[61] The Band has already commented extensively that this is a violation of state and federal water quality regulations.

Because the cross-media analysis fails to evaluate so many sources of mercury and their impacts, it does not disclose all facts relevant to the operation of the mine, and it does not support the conclusion that PolyMet will comply with all applicable pollution control laws and regulations that limit mercury levels in the State's waters. Therefore, the MPCA cannot issue the §401 certification until the cross-media analysis is amended to address all these gaps in its assessments.

V. Summary

The Fond du Lac Band's decision, more than twenty years ago, to pursue federal delegated authorities under the CWA was centered on Anishinaabe values for water (nibi) and the cultural and spiritual basis for the shared sense of responsibility to protect her. Clean water is not just essential for life, it *is* life, and must be guarded and protected if we and all other beings are to survive on this earth. We come from water; we are made of water. This is not a radical

[56] PolyMet Cross-Media Mercury, *supra*, p. 15.
[57] See p. ___ of these comments, *supra*.
[58] PolyMet Cross-Media Mercury, *supra*, p. 124.
[59] The MNSW8 monitoring site is at the location USGS 04016000 on PolyMet FEIS Figure 4.2.2-1 *supra* and was selected since the PolyMet FEIS.
[60] *Id*., p. 4.
[61] *Id*., pp. 4-5.

perspective (although some choose to paint it that way); it is very simple, pragmatic, and respectful.

In considering how we might go about using the regulatory tools and authorities of the CWA to better protect water, our default premise has always been to interpret and implement the rules as simply and straightforwardly as possible. Throughout the environmental review process and now the permitting process, there has been a fundamental disconnect or lack of understanding on the part of the state and federal regulatory agencies about just how essential it is, for all of our well-being, to keep protection of this vital element first and foremost.

Regardless of the length of time and money spent on processes that have brought us to this decision point, PolyMet simply has not shown that it will comply with all applicable pollution control statutes and rules, or the conditions of the permit; nor have the permitting agencies clearly indicated that they will enforce limits and conditions according to state and federal regulations. MPCA should not issue a §401 certification until PolyMet and state agencies resolve the pending problems with the draft permit to mine and draft NPDES/SDS permit that have been raised by the Band and many other concerned Minnesota citizens, and show that PolyMet will be able to comply with all applicable federal and state laws.

Sincerely,

Nancy Schuldt, Water Projects Coordinator