Fond du Lac Band of Lake Superior Chippewa

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SENT ELECTRONICALLY
Minnesota Pollution Control Agency
Attention: PolyMet Water Quality Permit 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 NPDES/SDS permit

Dear Commissioner Stine:

The Fond du Lac Band of Lake Superior Chippewa ("Band") appreciates this opportunity to comment on the draft PolyMet NPDES/SDS permit. In this letter, the Band raises objections to the draft Permit under Minn. R. 7001.1070 subpt. 1 (incorporating Minn. R. 7001.0110), and presents comments raising its other concerns with the draft permit. Because these comments describe ways in which the draft permit fails to comply with the law, they are "significant" comments to which the MPCA must respond under Minn. R. 7001.1070 subpt. 3. The Band requests that this response be made in writing.

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[1] (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

[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).

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 downstream from the Project. The Band provides governmental services to Band members and other qualifying persons. 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. For that reason, it constitutes an "interested person" under the Minnesota Administrative Rules.[2]

PolyMet has applied for a state National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit for its proposed NorthMet mine project. The NPDES/SDS permit is intended to control discharges to surface waters and provide groundwater protection in the project area. PolyMet applied for a permit authorizing only a single discharge point (SD001) that splits flow to three small streams near the Flotation Tailings Basin (FTB) at the plant site. Other conditions in the permit are intended to protect groundwater resources under state standards, Minn. R. 7060.0100-.0900.

1. Legal Standards for Approval of NPDES Permit

In Minnesota, with exceptions not relevant here, "no person may discharge a pollutant from a point source into the waters of the state without obtaining a national pollutant discharge elimination system [("NPDES")] permit" from the MPCA.[3] The Minnesota Administrative Rules governing NPDES permits provide that "[e]ach draft and final permit must contain conditions necessary for the permittee to achieve compliance with applicable Minnesota or federal statutes or rules, including . . . any conditions that the agency determines to be necessary to protect human health and the environment."[4] These conditions are described in Minn. R. 7001.1080.[5] They include effluent limitations, standards, and prohibitions, when feasible, for each pollutant to be discharged from each outfall or discharge point of the permitted facility.[6] When establishing these effluent standards, the MPCA Commissioner must "consider . . . effluent standard or limitations applicable to the permittee" under the CWA and its

[2] *See* Minn. R. 7001.0110 subpt. 1.
[3] Minn. R. 7001.1030 subpt. 1.
[4] Minn. R. 7001.0150 subpt. 2.
[5] *See* Minn. R. 7001.1080 subpt. 1 (stating that "conditions to be included" under Minn. R. 7001.0150 subpt. 2 include the conditions described in Minn. R. 7001.1080 subpt. 2).
[6] Minn. R. 7001.1080 subpt. 2.

implementing regulations,[7] as well as the Minnesota water quality standards.[8] Permits must also include monitoring requirements to ensure compliance with permit limitations.[9]

The MPCA cannot issue a final NDPES permit unless it determines that "the proposed permittee . . . will, with respect to the facility or activity to be permitted, comply or will undertake a schedule of compliance to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the agency, and conditions of the permit and that all applicable requirements of Minnesota Statutes, chapter 116D, and the rules adopted under Minnesota Statutes, chapter 116D, have been fulfilled."[10] Chapter 116D of the Minnesota Statues require state agencies to interpret and administer the laws of the State to, among other things, "utilize a systematic, interdisciplinary approach that will insure the integrated use of the natural and social sciences and the environmental arts in planning and in decision making which may have an impact on the environment . . . ."[11]

MPCA is justified in denying a permit if the proposed permittee "will not comply with all applicable state and federal pollution control statutes and rules administered by the agency," if "the permittee has failed to disclose fully all facts relevant to the facility or activity to be permitted," or if "the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a modification of the conditions of the permit . . . ."[12]

2. MPCA's Draft Permit Does Not Meet These Standards

The permit application pertains to the first five years of mine construction and operations, although in some sections it describes the mine plan for eleven years, and in other sections refers to closure. The application defines eleven sources of wastewater generated by the project:

- Mine water: water collected by the mine water management systems, which includes runoff and groundwater from the mine site. Ostensibly, this is only water that has contacted mine sources, such as pit wall, waste rock, or ore, and has been collected from the pit sumps or various collection systems on the mine site.
- Treated mine water: water routed from the mine site to the plant site, after collection and treatment at the mine site water treatment facility.

[7] *Id.* subpt. 2 item B(2).
[8] *Id.* subpt. 2 item B(3) (incorporating Minn. R. 7050.0100 to 7050.0220, 7050.0300 to 7050.0380, 7055.0010 to 7055.0120, and 7055.0250 to 7055.0310).
[9] *Id.* subpt. 5.
[10] Minn. R. 7001.0140 subpt. 1. Minn. Stat. ch. 116D.
[11] Minn. Stat. § 116D.03 subdiv. 2(2).
[12] Minn. R. 7001.0140 subpt. 2 items A, C, D.

- Process water: water used in beneficiation or hydrometallurgical process.
- Sewage: water from sanitary facilities.
- Tailings basin water: water in the tailings basin pond or the pores of the tailings, which includes process water, treated mine water route to the tailings basin, tailings basin seepage, treated sewage, and precipitation on the tailings.
- Tailings basin seepage: tailings basin water that infiltrates through the tailings basin.
- Hydrometallurgical residue facility (HRF) water: water collected and stored within the HRF.
- Plant reservoir water: water stored in the plant reservoir, including makeup water from Colby Lake and precipitation on the plant reservoir.
- Industrial stormwater
- Construction stormwater
- Non-contact stormwater

Under existing conditions, runoff from the northernmost area of the Mine Site generally drains north into One Hundred Mile Swamp and associated wetlands along Yelp Creek and the Partridge River. These wetlands form the headwaters of the Partridge River, which meanders around the east end of the Mine Site before turning southwest. Runoff from the majority of the Mine Site naturally drains to the south through culverts under Dunka Road and the adjacent rail line, into the Partridge River downstream of the Dunka Road crossing. The Partridge River hydrology is affected by periodic and variable dewatering of the Peter Mitchell Pit operated by the Northshore Mining Company near the headwaters of the Partridge River, upstream of the proposed Mine Site.[13]

The majority of the Plant Site is located in the Embarrass River watershed, upstream of the Embarrass River chain of lakes. A small portion of the Plant Site, including stormwater from the Process Plant Area, and Areas 1 and 2 Shops, drains south to Second Creek. Under existing conditions, groundwater and surface water seepage from the existing LTVSMC tailings basin drain towards Unnamed (Mud Lake) Creek to the north, Trimble Creek to the northwest, and Unnamed Creek to the west. Runoff from the outer slopes of the existing LTVSMC tailings basin is tributary to these creeks. Tributaries to the Embarrass River, located between the existing LTVSMC tailings basin and the Embarrass River, which may potentially be affected by the Project include Unnamed (Mud Lake) Creek, Trimble Creek, and Unnamed Creek. Other tributaries located between the Tailings Basin and the Embarrass River that are not expected to

[13] PolyMet 401 certification Fact Sheet, p. 10.

be affected by the Project include Spring Mine Creek, which drains LTVSMC's former Mine Area 5N, (another) Unnamed Creek, and Heikkila Creek, and Bear Creek.[14]

The infrastructure corridors for roads, rail lines, and pipelines connecting the Mine Site and Plant Site cross Wetlegs Creek, Longnose Creek, and Wyman Creek.[15]

As stated in the NPDES/SDS Fact Sheet, MPCA has determined that the Project as designed does not have reasonable potential to cause or contribute to any violations of any applicable water quality standards in waters of the state. These standards include numeric and narrative water quality criteria, antidegradation standards for surface water, nondegradation standards for groundwater, and beneficial use designations. The draft permit includes extensive requirements to ensure that the Project will comply with all applicable water quality standards. The draft permit also includes requirements to ensure the Project will be constructed and operated consistent with the design reviewed in the final environmental impact statement (FEIS).[16]

The NPDES/SDS permit is one of the most critical regulatory control documents for this project, and as such, the Band has been awaiting this opportunity to learn specifically how the state proposes to protect surface and groundwater resources given our reasonable trepidation about the likelihood of adverse impacts despite PolyMet's universally optimistic predictions during environmental review.

There are many disputed issues of material fact, however, that are common to both the draft Permit to Mine and the draft NPDES/SDS Permit, and the Band incorporates our recently submitted comments to the MNDNR on the draft Permit to Mine with our comments on this permit, including:

- The ability for the PolyMet project to comply with Clean Water Act requirements and meet MN water quality standards is predicated on the agencies' unsupported faith in seepage capture systems at the Mine Site and Plant Site working flawlessly for centuries.
- The draft NPDES/SDS permit completely fails to regulate any pollution seeping from groundwater and welling up in adjacent wetlands and streams, apparently disregarding the strong and repeated recommendations from the EPA throughout the course of the EIS and developing the draft permit. The MPCA's draft permit sets no limits on surface water contamination resulting from this toxic seepage.[17]

[14] Id., pp. 10-11.
[15] Id., p. 11.
[16] MPCA Summary Statement, NPDES/SDS Fact Sheet.
[17] MPCA, Draft NPDES/SDS (Industrial Wastewater Discharge) Permit.

- The draft NPDES/SDS permit fails to require monitoring of water quality in wetlands and streams near PolyMet's mine pits, tailings basin or concentrated waste storage facilities.[18] Without targeted surface water monitoring, even if PolyMet pollution violates Minnesota standards, it could be decades before the contamination of nearby waters is detected.
- PolyMet's Final EIS committed to upgrading seepage collection on the south side of the existing LTV tailings basin to have zero discharge to either surface or groundwater.[19] However, the NPDES/SDS permit contains no such requirements.[20] The draft permit fails to disclose whether the existing seepage capture system will protect downstream water, or allow polluted discharge into groundwater where it surfaces into Minnesota streams.
- Contaminant modeling by PolyMet does not consider important flow path details near the mine site or the tailings basin, leading to inaccurate analysis of pathways for contaminants to reach the Partridge and Embarrass Rivers.
- Proposed surface and groundwater monitoring is grossly insufficient to ensure the environmental controls are protecting downstream water resources, detecting exceedances, or identifying problematic hydrologic conditions.
- PolyMet's application, and the draft permit, have not considered evidence that shows that mercury discharges will likely violate water quality standards

But perhaps most disturbing, the draft NPDES/SDS permit does not reflect the EPA's clearly and consistently conveyed recommendations throughout the environmental review period, including during the supplemental EIS phase when EPA became a cooperating agency. For instance, EPA summarized its NPDES permitting concerns in a 2015 email to the MPCA[21], noting that the MPCA had requested that "specific responses to our comments on NPDES related issues be deferred to the permitting phase of the project rather than during the EIS development phase." EPA had accommodated that request, but was seeking a 'shared understanding of the issues and documentation of decisions and approaches we agreed upon.' EPA wanted to verify their understanding of MPCA's expected permitting approach, and explained again, for the record, EPA's position regarding the applicability of NPDES permit requirements for point source discharges of pollutants to surface waters, including those that occur via subsurface flow. EPA noted that because they had deferred settling these issues with MPCA until permitting, they did not anticipate that the information in the EIS would necessarily be sufficient to address the concerns they had raised. Further, EPA stated:

[18] MPCA, Draft NPDES/SDS Permit.
[19] PolyMet FEIS.
[20] MPCA, Draft NPDES/SDS Permit.
[21] EPA email to MPCA, PolyMet NPDES Requirements (April 7, 2015).

> Discharges are proposed for the NorthMet site which require NPDES permit coverage in order to be in compliance with the CWA. The project proponent has a duty to submit an NPDES permit application to seek coverage for all proposed pollutant discharges, so that the permit can be in place when the proposed pollutant discharges occur. The MPCA is responsible for issuing an NPDES permit, where appropriate, that contains conditions and limits which assure compliance with all applicable requirements of the CWA and regulations, including limitations controlling all pollutants which are determined to cause or have reasonable potential to cause or contribute to an excursion from any state WQS. The enclosure highlights the more significant issues that we have identified to date for this facility and that must be addressed during the NPDES permitting process.[22]

Those issues in the enclosure included:

- MPCA's apparent disagreement with EPA's interpretation of the CWA as it applies to discharges of pollutants from a point source to surface water, specifically those via hydrologically connected groundwater
- MPCA's rationale for deferring NPDES permit issuance at the Mine Site until "a point source water discharge adds pollutants to waters of the US.[23] EPA comments on the SDEIS[24] had earlier raised concerns about PolyMet's modeling approach and that the Partridge River would not be the first receiving water of mine site discharges (adjacent wetlands would be).
- MPCA had not been clear about how they would apply potential future NPDES permitting authorities to mine site discharges, based upon monitoring associated with the SDS permit that was intended to cover the mine site. Uncertainties regarding timely detection of pollutants that could trigger NPDES permit development did not provide assurance that PolyMet could avoid noncompliance. Simply applying for a permit does not provide the coverage needed to authorize discharges of pollutants to surface waters under the CWA.
- An NPDES permit for discharges of pollutants would need numeric and/or narrative effluent limitations necessary to protect WQS of the receiving waters, as well as any limitations necessary to ensure that downstream WQS are protected. 40 CFR § 122.44(d).

[22] Id., cover email.
[23] Draft PFEIS language, Section 5.2.2.3.6 Monitoring.
[24] EPA comments on NorthMet Supplemental Draft EIS, March 13, 2014.

- As a "new source", as defined in 40 CFR § 122.2, the PolyMet facility must be able to meet standards at the time of permit issuance; it would not be eligible for variances or schedules of compliance.
- If PolyMet did not have NPDES permit coverage for identified pollutant discharges prior to pollutants reaching surface waters, then the company will be discharging without a permit in violation of the CWA – and there is no minimum threshold of predicted pollutant load needed to trigger the requirement to submit a permit application.[25]

Additionally, at the plant site, MPCA's criteria for assessing "permittability" of the tailings basin, as outlined in a memo to MNDNR[26], included that groundwater seepage from the tailings basin should not exceed 500 gallons/acre/day, which they considered equivalent to an engineered lined system. For PolyMet, this could translate to over two million gallons/day, yet the tailings basin would not be subject to NPDES requirements. "Excess" wastewater from the tailings basin (that discharges to the Embarrass River) during operations must meet effluent limits based upon the 10 mg/l wild rice sulfate standard, but MPCA further explained that they would "seek evidence the facility will not have a statistically significant impact on sulfate in receiving waters…groundwater quality standards can be met at the property boundary, and all applicable surface water quality standards can be met in surface waters at the facility."

BEPA also warned MPCA that the CWA does not include exemptions that would limit NPDES permit coverage to only "excess" wastewater discharges that are deemed to have a "statistically significant" impact on receiving waters at the property boundary. There is no exclusion or exemption for discharges from facilities based on technology or engineering controls, and again, failure to obtain NPDES coverage for discharges of pollutants to waters of the US would put PolyMet at risk of violating the CWA. EPA expressed bewilderment that the MPCA did not clearly understand these issues after substantial interagency discussions over several years, and in fact believed it had been understood and agreed to by both parties some time ago.

And now, the MPCA is asking for public comments on a draft NPDES/SDS permit that defies EPA's clear recommendations and warnings that MPCA's approach for regulating water quality impacts from the proposed PolyMet project is not consistent with the CWA, and leaves surface and groundwater resources at foreseeable risk. Given what we know about the MPCA's track record in regulating hard rock mining in Minnesota, this does not come as a surprise. But it is

[25] The contents of a complete permit application are descried in 40 CFR § 124.3 and for new industrial sources at §§ 122.21(f), and (k).

[26] MPCA to MNDNR, "Minnesota Pollution Control Agency Staff Recommendations on Impact Criteria Related to the Permittability of the Proposed PolyMet Tailings Basin," June 20, 2011.

entirely unacceptable for the agency to offer this water quality permitting scheme for the first of potentially many other copper-nickel mines, and profess that they are protecting northeastern Minnesota's irreplaceable water resources. The Band submits the following additional specific comments relevant to major environmental concerns that we have consistently raised throughout our engagement in the environmental review process. As we show below, PolyMet's proposed mining project relies on remediation and containment designs that are untested, have not yet been finished, or that will not function properly to prevent the discharge of pollutants into the waters of the State in violation of the State's water quality standards and the CWA. We do not believe that the draft NPDES/SDS permit sufficiently dispels those concerns, nor does it comply with the Clean Water Act or Minnesota rules intended to protect the waters of the state; rules that we also rely upon to protect vital treaty resources. It should be denied as currently written, and the Commissioner should take action to resolve these issues – consistent with EPA's recommendations - so that when a revised NPDES/SDS permit is issued, it is based on proper scientific and engineering analyses, and subject to clear limits and conditions that ensure the project complies with the law.

II. The Band's Comments and Reasons Supporting Them

The Band's comments, and the specific reasons supporting them, are as follows.

1. Compliance with permit unrealistically assumes unsupportable seepage capture rates

The issuance of the NPDES/SDS permit relies upon a finding that the Applicant will comply with conditions established in the permit,[27] including the condition requiring recapture of the contaminated groundwater leaving the tailings basin, the Hydrometallurgical Residue Facility (HRF) and Category 1 waste rock storage pile, in order to maintain compliance with applicable water quality standards. This perspective was confirmed in a consultation meeting between MPCA and tribes on March 1, 2018.[28]

The Band submitted extensive comments to the MNDNR on the draft permit to mine, summarizing our concerns that no evidence has been presented to demonstrate that the predicted rate of seepage capture was feasible. Among our comments:

> The PolyMet FEIS claimed that, during mine operations, 3,860 gallons per minute (gpm) of the total 3,880 gpm of seepage modeled would be collected from the unlined, permanent FTB. This represents a nearly perfect collection rate of 99.5%.[29] It estimated

[27] Minn. R. 7001.0140 subpt. 1.
[28] PolyMet Tribal Consultation Questions, 3/9/18.
[29] PolyMet FEIS, 5-181, Table 5.2.2-37.

a similar collection rate of 98.8% during long-term maintenance.[30] In order to arrive at this conclusion, the FEIS first assumed that all but 200 gpm (5%) of total NorthMet tailings seepage will be "surface seepage."[31] Then, based on PolyMet's modeling, the FEIS assumed that 100% of both tailings surface seepage and groundwater seepage would be captured on both the east side and the south side of the tailings waste facility,[32] and that 100% of the surface seepage and 90% of seepage retained in groundwater would be captured at the north, northwest and west toes of the tailings storage facility.[33]

Verification of this prediction is fundamental for determining whether this project can even be permitted (both the permit to mine and the NPDES/SDS permit): whether the barrier walls surrounding the tailings basin and the waste rock stockpiles will function as predicted to capture nearly 100% of mine-impacted surface and groundwaters. As Dr. Myers pointed out in his independent expert analysis of the NPDES/SDS permit, compliance with nondegradation requirements is crucially dependent on the seepage collection system "operating perfectly."[34] The proper functioning of this system will also determine whether the project complies with permit to mine regulations at Minn. R. 6132.2200, 6132.2500, and 6132.3200. But such verification has not been done.

Despite its promises in the FEIS, in its permit to mine application, PolyMet walks back from its promises in the FEIS that more than 99.5% of total tailings facility seepage will be contained by its seepage capture system. Instead PolyMet states, "tailings basin seepage will be *collected to the extent practical* by the FTB seepage capture systems."[35] This change is substantial and effectively eliminates performance standards.

PolyMet states that it will build various segments of a seepage containment system on the west, north and part of the east sides of the tailings storage facility,[36] but the draft special conditions do not specify any performance standards for this system. PolyMet

[30] *Id.*
[31] *Id*., 5-179.
[32] *Id*., 5-8, 5-102.
[33] *Id*., 5-186.
[34] Dr. Tom Myers, *Technical Memorandum: Review of PolyMet Project NPDES/SDS Permit Application*, February 19, 2018, for Minnesota Center for Environmental Advocacy) ("Myers NPDES Comments") submitted to the DNR as Exhibit 7 to the Joint Petition for a Contested Case Hearing by Minnesota Center for Environmental Advocacy, the Center for Biological Diversity and the Friends of the Boundary Waters Wilderness (Feb. 28, 2018).
[35] PolyMet Permit to Mine Application, p. 354 (emphasis added). This is one of many examples where the permit application substantially departs from the elements of the proposed project as evaluated in the FEIS.
[36] *Id*., p. 269.

proposes to furnish criteria, such as containment system trench wall thickness, conductivity and depth "prior to system construction."[37] Despite more than a decade of project planning, revisions and refinements, PolyMet seeks a Permit to Mine based upon a "conceptual" layout and cross-section of the tailings facility seepage containment system.[38] Consistent with its obligations under the Administrative Rules, MNDNR should establish in the special conditions the design and performance criteria that PolyMet must meet in order for this seepage containment system to function as described in the FEIS. Otherwise, Minnesota water quality standards simply cannot be met at the Plant Site.

On the south side of the tailings waste facility, PolyMet acknowledges that groundwater from the existing LTVSMC tailings basin is currently flowing south toward NPDES/SDS monitoring station SD026 at the headwaters of Second Creek, downstream to the Partridge River.[39] But PolyMet's permit to mine Application fails to fulfill commitments made during the FEIS process – commitments that ensured environmental protections and the ability to acquire necessary permits - for 100% collection on the south side of the tailings facilities. Now, however, PolyMet is apparently deferring implementation of critical environmental controls with a statement that does not lead to enforceable permit conditions:

PolyMet is working with Cliffs Erie and MPCA *to evaluate possible improvements* to this system, which will be called the FTB South Seepage Management System for the Project. . . A geotechnical investigation is required to determine *if additional improvements are needed and to develop a design for these improvements, if deemed necessary. If improvements are necessary*, design drawings will be submitted to the DNR for approval and potentially a permit amendment, as determined by the DNR, prior to the initiation of construction.[40]

Again, during the March 1, 2018 consultation with MPCA, the agency called the tribes' attention to the "different objectives" that currently control this permitted discharge point:

A surface seepage pumpback system was installed by Cliffs Erie in 2011 as part of a short-term mitigation plan required by the Consent Decree between Cliffs Erie and MPCA. This system currently is collecting a portion of the south seepage for the purpose of complying with the 1000 umh/cm specific conductance effluent limit in the existing

[37] *Id*.
[38] *Id*., p. 270, Figure 10-6.
[39] *Id*., p. 83. *See also* PolyMet FEIS, A-625, "It is acknowledged that there is currently incomplete capture of impacted water at SD026."
[40] *Id*., p. 270 (emphasis added).

Cliffs Erie permit. (Note: complete capture is not required by the Consent Decree – it needs only to capture an amount sufficient to meet the permit conductivity limit). This capture system will become part of PolyMet's FTB South Seepage Management System. PolyMet has committed to collecting essentially all of the seepage from the basin in this area as part of the NorthMet project. Geotechnical investigations are planned to identify the subsurface conditions in order to identify a final design to achieve this. Options that have been considered to date include lining the existing collection dam with bentonite, injecting grout into the existing dam and/or constructing a second collection dam with a clay or concrete cutoff wall extending to bedrock. Details on the final design depend on the geotechnical findings.[41]

As the Band reviews the draft NPDES/SDS permit, it appears we are expected to trust that PolyMet will come up with a design, sometime in the future, that will assure 100% capture of seepage at the south discharge of the FTB. Existing conditions under Cliffs Erie's management under the Consent Decree are not in compliance with even the less rigorous 'objective' of complying with the state specific conductance standard; nor is this discharge meeting the existing sulfate standard for wild rice, and Second Creek is a wild rice water. Clearly, this South Seepage Management System is critical for PolyMet to meet WQS, but no plan has yet been developed and neither water quality monitoring nor limits have been proposed. This is a major deficiency in the draft NPDES/SDS permit that must be corrected.

2. **The draft permit assumes, without scientific support or enforceable conditions, that the contaminated groundwater containment systems at both the flotation tailings basin and the waste rock stockpiles will maintain an inward hydrologic gradient at all times.**

As the Band stated in its comments and objections to the draft permit to mine, the assumption that the contaminated groundwater containment systems at both the flotation tailings basin and waste rock stockpiles will maintain an inward hydrologic gradient at all times, is not supported by any scientific analysis or enforceable conditions. This problem, and our comments on it, are equally applicable to the draft NPDES/SDS permit, as MPCA staff explicitly stated to the tribes during consultation that their confidence in PolyMet's capture system was based upon the maintenance of an inward hydraulic gradient, unlike similar capture systems at U.S. Steel Minntac and the existing system at SD026 managed now by Cliffs under Consent Decree.

In PolyMet's modeling for the FEIS, the contaminated groundwater containment systems at both the Flotation Tailings Basin (FTB) and the waste rock stockpiles, including the Category 1

[41] PolyMet Tribal Consultation Questions.

Waste Rock Stockpile were assumed to collect ninety percent of groundwater moving out of these facilities.[42] Here too, despite numerous requests to the co-lead agencies, we have not been provided with any evidence that this level of effectiveness has ever been achieved before for a cut-off wall, drain, and pump type of system. The co-lead agencies accepted PolyMet's assumption of ninety percent efficiency solely on the presumption that the systems are designed to maintain an inward hydraulic gradient. Under those conditions, any breach in the containment wall would result in water flowing into the tailings basin side of the wall, rather than water escaping from the tailings basin into the surrounding environment.

But that assumption of ninety percent efficiency presumes that the inward hydraulic gradient would be maintained at all times. The FEIS never discusses any scenarios or any percentage of the year during which the inward gradient might be compromised. The Permit to Mine application maintains this unrealistic assumption. The application states:

> The FTB Seepage Containment System will draw down the water table on the Tailings Basin side of the cutoff wall, maintaining an inward gradient and mitigating the potential for tailings basin seepage to pass through the cutoff wall (i.e., any seepage through the cutoff wall would be inward into the FTB Seepage Containment System).[43]

As to the Category 1 Stockpile, the application states:

> The groundwater containment system will collect stockpile drainage and draw down the water table on the stockpile side of the cutoff wall, thereby maintaining an inward gradient along the cutoff wall and eliminating the potential for stockpile drainage passing through the cutoff wall. Potential leakage through the cutoff wall, if it occurs, will be inward into the groundwater containment system.[44]

However, when seeking to find any enforceable requirements of the systems, the only reference for operational requirements that could be found in the Permit to Mine application is the statement that "Proposed performance monitoring for the FTB Seepage Containment System is described in Appendix C of Reference (4)."[45] This cited document is PolyMet's NPDES/SDS permit application. Appendix C states:

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[42] *See* FEIS 3-47, 3-119, 5-51, 5-65, 5-76 to 81, 5-120, 5-145, 5-184 to 187; PolyMet PTM Application at Groundwater Modeling of the NorthMet Flotation Tailings Basin Containment System, Att. C to Water Management Plan, Plant Site.

[43] PolyMet PTM Application, p. 270.

[44] PolyMet PTM Application, pp. 288-89.

[45] PolyMet PTM Application, p. 269.

> Successful containment system performance will be defined by: maintenance of an inward hydraulic gradient during average annual conditions; and consistent pumping rates, with changes attributable to weather.

"Average annual conditions" is not defined. And although it downplays the risk for reversing the gradient, the permit application does admit:

> *As long as heads are higher on the exterior side, there will be negligible flow escaping capture* through the cutoff wall. It is possible that there could be temporary localized ponding of water on the interior side of the cutoff wall during certain events, such as large rain events or snowmelt, *causing heads to temporarily be higher on the interior side* of the containment system than on the exterior side.[46]

The draft NPDES/SDS permit also states:

> The Permittee shall maintain an inward hydraulic gradient across the Category 1 Waste Rock Stockpile Groundwater Containment System as determined by comparing water level measurements from the paired monitoring wells and piezometers taking into account temporary conditions that may result from short-term precipitation or snowmelt events. Short-term precipitation or snowmelt events on the stockpile side of the low-permeability hydraulic barrier must not cause overtopping of the barrier.[47]

There are no clear or specific criteria for "taking into account temporary conditions that may result from short-term precipitation or snowmelt events". This vague language does not ensure that PolyMet must maintain an inward hydraulic gradient at all times, as had been assumed in the modeling for the FEIS. Both state permitting agencies seem to be ignoring the potential for cracks or other breaches in the containment wall, or for water flowing under the bottom of the wall. The permit to mine assumes that these systems will operate flawlessly for hundreds of years, yet visual inspections are not possible, nor does the permit include any specific conditions under which a detailed investigation would be required. These deficiencies in the design make it impossible to ensure that PolyMet will meet the conditions of the permit, and these deficiencies must be addressed before the permit can be issued.

At the tailings basin, FEIS modeling suggested that any contaminated water escaping the system would escape through the bedrock aquifer, and would not surface until miles downstream. But if the hydraulic gradient were reversed for a period of weeks during snowmelt conditions or heavy rain events, the result would be contaminated water escaping through the

[46] PolyMet NPDES/SDS Application, App. C.
[47] PolyMet draft NPDES/SDS Permit, p. 41.

surficial aquifer and surfacing quickly in the wetlands and headwaters of Embarrass River tributaries, where the impact on water quality would be significant.

The FEIS conclusion that *no* groundwater would escape the containment system on the east side of the tailings basin is particularly dubious. The FEIS completely omitted any explanation for why the co-lead agencies assumed that PolyMet could collect 100 percent of seepage in this location, but that assumption is highly unlikely if an inward hydraulic gradient is not maintained at all times. The area immediately below the toe of the dam on the east side is a wetland that receives overflow from the Spring Mine Creek headwaters.[48] Along with Yelp Creek and Second Creek, the FEIS provided no predictions for potential water quality impacts to this waterbody, which would become the headwaters of Mud Lake Creek after the east side of the tailings basin is built up to a higher elevation. This information must be made available for public review before a permit to mine – or, for that matter, an NPDES/SDS permit – can be issued.

These unsupported and unsupportable assumptions apply equally to the waste rock stockpile liners, and in particular, the Category 1 stockpile, as it will remain a permanent post-closure feature generating reactive mine waste for centuries. The FEIS assumed that all water escaping the collection system would exit via the bedrock aquifer, and virtually all of that water would flow into the mine pits. However, water escaping north of the stockpile, because of a reversal in the hydraulic gradient from mine pit pumping, would likely flow through the surficial aquifer to nearby Yelp Creek. No analysis of this potential groundwater flow path or water quality impacts on Yelp Creek and the uppermost reaches of the Partridge River has been done – but must be, before permitting can proceed.

In both the draft Permit to Mine and the draft NPDES/SDS permits, the state regulatory agencies are relying exclusively on monitoring to not only demonstrate performance of the containment systems but also to reveal any failures and contaminant release to nearby surface and groundwaters. But proposed monitoring wells are spaced to far apart to reliably detect groundwater plumes escaping the containment systems. As described by Dr. Myers, the primary problem with the design's location of the monitoring wells is that the well monitors can only detect contaminants in groundwater that flows directly past them.[49] But the monitoring wells are in very close proximity to the stockpiles and the tailings basin, such that "detailed modeling of the mine site and the plant site showed that contaminant plumes would miss much of the proposed monitoring."[50] This despite the fact that Minnesota law requires NPDES permits to include monitoring requirements that will ensure compliance with water quality standards.

[48] PolyMet FEIS 5-199, Fig. 5.2.2-48.
[49] Myers NPDES Comments at 74.
[50] Myers NPDES Comments at 74.

In short, absent studies that addresses these issues, and absent the imposition of clear conditions in the permit that would require PolyMet to meet specific performance standards, the permit to mine violates Minnesota law. Compliance with Minnesota law clearly relies upon an 'engineered design' that will prevent violations of the State's water quality standards of the State and a monitoring design that will ensure compliance with the permit. The necessary studies must be done and any permit to mine must be amended to include such conditions.

3. Elimination of WWTF at mine site does not ensure protection of Partridge River watershed

As described in PolyMet's application for the permit to mine, incorporated into MNDNR's draft permit to mine, PolyMet has changed how it plans to undertake waste water treatment at the mine and plant sites. As the Band described in its comments to the MNDNR on the PolyMet draft permit to mine:

> Throughout the entirety of environmental review - in the draft EIS, supplemental draft EIS and the final EIS - PolyMet's operations plan have included a mine site [Waste Water Treatment Facility ("WWTF")]. Beginning with the release of the supplemental draft EIS, PolyMet has assured that their project would protect water quality in the Partridge River watershed by upgrading the mine site WWTF during closure to provide reverse osmosis treatment of discharge and collected seepage.[51] In the final EIS, the WWTF is an essential part of the company's plans to protect water quality at the mine site during operations, closure and post closure, and provides flexibility for adaptive engineering and contingency mitigation. The WWTF is referred to hundreds of times in the final EIS, and FEIS modeling of solute levels in mine site surficial aquifer and surface water included treatment at the WWTF as a fundamental assumption.[52]

However, PolyMet has now eliminated the previously proposed WWTF at the mine site, and replaced its prior plan with a single Waste Water Treatment System (WWTS) at the plant site. A single WWTS cannot handle the volume of water from mine site and plant site, as shown by the Water Management Plan and Water Appropriations Permit. Elimination of the WWTF appears to be part of a strategy to avoid issuing an NPDES/SDS permit in the Partridge River watershed, even though there **will** be contaminated discharges that must be regulated.

In its comments, the Band also raised significant concerns about the highly concentration contaminant waste stream being pumped across eight miles of wetlands and streams from the mine site to the single treatment facility at the plant site, and the risk to those surface waters

[51] MDNR et al., PolyMet NorthMet Supplemental Draft Environmental Impact Statement, Nov. 2013 ("PolyMet SDEIS"), see e.g. ES-24, Fig. 3.2-1, Fig. 3.2-13. Fig. 3.2-19.
[52] PolyMet FEIS, see 5-117 to 5-118, 5-162 to 5-178, 5-224 to 5-232 regarding solute modeling.

from spills or ruptures. Treatment of contaminated process water at the mine site would now depend solely on uninterrupted operation of pumps and pipelines, and in the event of any disruption in the central pumping system or pipelines, no method of treatment would be available to address contaminated groundwater seepage being managed at the mine site, or any overflow of wastewater from equalization basins. We cautioned that PolyMet's characterization of the quality of mine site wastewater being pumped to the plant site is incorrect and misleading; that in fact the concentration of pollutants in pipeline water referenced in the permit to mine application[53] were based on earlier modeling that assumed a mine site WWTF would treat mine wastewater before piping it from the mine site to the plant site.[54] We noted in a major departure from the FEIS, the PolyMet draft permit to mine shows the Equalization Basins have been relocated and are now the closest mine features to the Partridge River. There are no apparent provisions for adequate water management that will prevent overflow of these Basins or other mine site wastewater features, which will quickly end up in the Partridge River.

These concerns are supported by the Myers technical memorandum:

> The mine site would not intentionally discharge directly to surface water, but waste rock stockpiles, mine ponds, and open pits are potential sources of contamination to groundwater, as the following subsections describe. There are also sources throughout the mine site. Runoff from stockpiles could contaminate shallow groundwater. Mine ponds are potential sources of contaminants to groundwater if they are not lined or if the liners leak. Each time they fill, groundwater seepage will cause a plume to enter groundwater. This includes stormwater ponds if runoff from dumps will enter stormwater ditches and flow to a pond.
>
> There are many examples of how the mine site could be a source of groundwater and surface water degradation. For example, if water reaches the ditch on the north side of the Category 2/3 dump, it will reach the stormwater pond from which it could seep into groundwater. The pond on the NE corner of the Category 1 dump collects runoff from all along the NE and NW side of the dump, essentially half of the dump. Vol II Sheet SW-008 shows no liner on Pond A and sheet SW-017 shows no liner for the North Perimeter Stormwater Ditch. There is also no liner for the ditch on the north side of the Category 2/3 stockpile. The ditches would carry mine-impacted water and the pond would contain mine-impacted water at least until the dump is reclaimed. The ditch essentially overlies the cutoff ditch, so that seepage would be into the one-inch rock filling the

[53] PolyMet Water Mgt. Plan - Mine, *supra*, Large Table 12, in Appx. 11.2 to PolyMet PTM Application.
[54] *Id*., citing the February 2015 PolyMet NorthMet Project Water Modeling Data Package – mine Site as the source of the data.

cutoff trench. GCS-010 shows the cutoff trench and stormwater ditch do not coincide. On the north side, the stormwater ditch, unlined, lies outside of the perimeter of the dump and cutoff trench. On the south, there is no stormwater ditch and the cutoff is between the dump and the pit lake. The combination of unlined ditches, cutoffs, and ponds could lead to a significant contaminant source not prevented by the NPDES/SDS permit.[55]

In summary, not having a treatment plant at the mine site is not the equivalent of no discharges; it just means that the inevitable discharges to the Partridge River watershed from multiple sources will not be controlled or regulated. This is unacceptable, from a permitting standpoint and for protecting natural resources proximal to the mine site.[56] But it also leaves PolyMet at substantial risk for significant liabilities for unauthorized discharges, for instance if/when the Equalization Basins overtop or stormwater collection systems around waste rock stockpiles are overwhelmed and pollutants enter the State's waters.[57]

4. EPA has consistently interpreted the Clean Water Act (CWA) to apply to discharges of pollutants from a point source to surface water, including those that occur via hydrologically connected ground water. MPCA's draft permit does not.

Currently, the EPA is requesting comment on their previous statements regarding the CWA and whether pollutant discharges from point sources that reach jurisdictional surface waters via groundwater or other subsurface flow that has a direct hydrologic connection to the jurisdictional surface water may be subject to CWA regulation.[58] They have not stated that CWA permits are required for pollutant discharges to groundwater in all cases, but they have clearly expressed their position and underlying rationale to the MPCA about this issue as it specifically pertains to the PolyMet project as well as other MPCA-permitted mining discharges. Even though the groundwaters are not considered "waters of the US", EPA has interpreted that NPDES permitting authority exists and in fact is required because such discharges are effectively discharges to the directly connected surface waters.[59] The permit requirements are intended to protect surface waters which are contaminated via a groundwater (subsurface) connection.

This issue has been litigated throughout the US, with various court interpretations and decisions. However, one court noted that "it would hardly make sense for the CWA to

[55] Myers NPDES comments.
[56] *See* Minn. R. 6132.0200; 6132.1100 subp. 6 item C; 6132.2000.
[57] Minn. R. 7001.1080 subpt. 2 item B(2) (NPDES permit must include conditions requiring the permittee to comply with CWA water quality standards and effluent limitations under 33 U.S.C. §§ 1312-1314, 1317, 1328, 1342, and 1345).
[58] 83 FR 34, pp. 7126-7128, February 20, 2018
[59] Final General NPDES Permit for Concentrated Animal Feeding Operations (CAFO) in Idaho ID-G-01-0000, 62 FR 20, 178 (1997)

encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater."[60] It is hard to imagine a more appropriate analogy to the proposed PolyMet project, but MPCA has developed a draft NPDES/SDS permit that does not align with that interpretation. MPCA must clearly articulate and support their alternative interpretation of the CWA so that the Band and the public can discern whether the agency is seeking to protect water resources and the public interest, or PolyMet.

5. MPCA has not placed any controls at all on discharge to groundwater that seeps to wetlands, streams and rivers at the mine site and plant site, inconsistent with EPA recommendations.

The Clean Water Act requires protection of surface water from pollution released through connected groundwater.[61] Yet, there do not appear to be any enforceable requirements anywhere in the draft NPDES/SDS permit for the treatment of mine and plant seepage. PolyMet has admitted that more than 5,250,000 gallons of contaminated wastewater from the mine site and over 10,500,000 gallons of contaminated wastewater from the tailings site would be released without treatment into Minnesota groundwater.[62] Additionally, the MPCA failed to perform a reasonable potential analysis for any mine site or plant site discharge to surface water via hydrologically connected groundwater. As a result, the draft MPCA wastewater permit fails to control or even to monitor the effects of polluted seepage on adjacent wetlands and streams. All of these issues must be addressed before a permit may be issued.

Without a clear statement of prohibition, the Draft NPDES/SDS Permit appears to actually allow PolyMet to discharge untreated water from its tailings facility to surface waters via hydrologically connected groundwater. The Draft Permit only conditions that there will be "no direct discharge from the FTB (Flotation Tailings Basin) Pond to any receiving waters"[63] and that "Direct discharge to surface waters from the FTB Seepage Containment System is prohibited."[64] Nowhere is groundwater addressed.

The MPCA Fact Sheet appears to sidestep the issue by stating that, "based on typical defect size and frequency, expected hydraulic head, and measured hydraulic conductivity of system components" for the hydrometallurgical residue facility ("HRF"), "no leakage is expected

[60] *N. Cal. River Watch v. Mercer Fraser Co*., No. 04-4620, 200
[61] *See* 56 Fed. Reg. 64,876-01, 64,892 (Dec. 12, 1991); (cited in 66 Fed. Reg. 2960, 3015 (Jan. 12, 2001)).
[62] *See In the Matter of the Final Environmental Impact Statement for the PolyMet Mining, Inc., NorthMet Mining Project and Land Exchange*, MDNR Record of Decision ("DNR FEIS ROD"), March 3, 2016.
[63] Draft NPDES/SDS Permit, *supra*, p. 6.
[64] *Id.*, p. 41.

through the lower composite liner."[65] But this does not address the issue, because as the Band described in its comments on the draft Permit to Mine, the proposed HRF site is located on wetlands, which are inherently unsuitable for a toxic waste storage facility because they are structurally unstable.[66] As described by MDNR's consultants, "The soft ground beneath the proposed residue facility consists of up to 30 feet of slimes, peat and tailings concentrate. This will not be an adequate foundation for the 80 foot high basin. . . . The basin will have a geomembrane or geosynthetic liner. The liner could deform and fail if the existing underlying material cannot support the material added to the basin."[67] PolyMet has proposed compressing the wetlands before building the HRF to avoid this problem, but this engineering approach did not work as intended under similar conditions at a recent Superfund remedial site in the St. Louis River Area of Concern.[68] If the liner fails, leakage will occur. Although PolyMet has proposed some leakage capture for HRF maintenance post-closure, that maintenance will "eventually cease once the [HRF] cover system has been completed, once vegetation has become established, and once it is confirmed that there are no areas where surface runoff is becoming channelized and causing erosion of the facility dams.[69]

Despite the risk of failure and inadequate capture plan, which create a real and unacceptable risk of seepage into groundwater that is hydrologically connected to surface water, the Draft NPDES/SDS Permit establishes no limit on discharge of HRF pollutants through groundwater. The Draft Permit simply says, "Direct discharge from the HRF Pond and/or the HRF Leakage Collection system to surface waters or to the FTB is prohibited."[70] The Draft Permit describes a lengthy investigation work plan that MPCA will require for a preload design and liners, but includes no conditions that would revoke the authority being granted in the permit that the "HRF is permitted to receive hydrometallurgical residue and process water."[71] Both the MNDNR and the MPCA propose to issue permits for the HRF, although neither agency nor permit has resolved concerns regarding the site, stability and potential leakage from the HRF.

The EPA has been providing clear and consistent recommendations to MPCA since early in the environmental review process regarding how the proposed PolyMet project should be

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[65] MPCA NPDES/SDS Fact Sheet, *supra*, p. 68.
[66] This was confirmed by the engineering consultants retained by the DNR to review HRF dam safety, who considered the risk of liner deformation from land instability. *See* EOR (Emmons & Oliver Resources) Review Team, PolyMet Dam Safety Permit Applicable Review, May 15, 2017, p. 5, MDNR website at http://files.dnr.state.mn.us/lands_minerals/northmet/dam-safety/memo_dam_safety_permit_review20170515.pdf.
[67] *Id.*, pp. 5-6.
[68] Sediment Operable Unit Remediation Project Completion Report – Revision 1, St. Louis River/Interlake/Duluth Tar Site (2013), prepared for XIK Corp. by aether dbs.
[69] PolyMet PTM Application, Residue Management Plan, p. 36.
[70] Draft NPDES/SDS Permit, *supra*, p. 48.
[71] Id., p. 48.

regulated under the CWA to protect surface and groundwater resources, although apparently, they were not necessarily valued. For example, in their agency comments on the Preliminary SDEIS, EPA states:[72]

> **Recommendation:** The SDEIS should consider surface water criteria applicable to the Partridge River as evaluation criteria for the contaminated groundwater entering the Partridge River due to activities at the mine, in addition to the groundwater criteria used in the PSDEIS.
>
> According to EPA's ATTAINS database, none of the receiving waters immediately adjacent to the Mine Site, including the Partridge River, Yelp Creek, Unnamed Creek, have been assessed. Biological data consists of measuring community health by sampling and characterizing macroinvertebrates and fish. Minnesota does not have numeric water quality standards based on aquatic life for parameters known to be present in the discharge for many mining and mining related operations. However, the state does have a narrative water quality standard of no toxics in toxic amounts.
>
> **Recommendation:** The SDEIS should acknowledge that the narrative water quality standard- no toxics in toxic amounts - is relevant to NPDES permitting for the NorthMet project and its receiving waters, and that how to address that narrative standard will be considered in the NPDES permitting process. EPA will consult with MPCA in the context of permitting regarding approaches to protecting aquatic life and habitat in receiving waters.
>
> *Implementation of Effluent Limitations Guidelines (ELGs):* Discharges from the Mine Site which impact surface waters would be subject to effluent limitation guidelines (ELGs) found at 40 CFR 440 Subparts G, J, and K. These ELGs apply to discharges from mine drainage. Mine drainage is defined at 40 CFR 440.132 as "any water drained, pumped, or siphoned from a mine." A mine is defined as "an active mining area, including all land and property placed under, or above the surface of such land, used in or resulting from the work of extracting metal ore or minerals from their natural deposits by any means or method, including secondary recovery of metal ore from refuse or other storage piles, wastes, or rock dumps and mill tailings derived from the mining, cleaning or concentration of metals ores." Based on these definitions, all drainage from the Mine Site collected as stormwater is subject to these ELGs. It is

[72] Alan Walt letter to PolyMet co-lead agencies, Preliminary Supplemental Draft Environmental Impact Statement for the NorthMet Mining Project and Land Exchange, Hoyt Lakes, St. Louis County, Minnesota, August 7, 2013.

expected that the ELGs will be implemented in an individual NPDES permit for the Mine Site.

Implementation of water quality standards: Section 301 of the CWA prohibits point source discharge to surface waters, either directly or via directly connected ground water, unless the discharge complies with a NPDES permit. Section 502(12)(A) of CWA defines "discharge of a pollutant" as any addition of any pollutant to navigable waters from any point source. Further, at CWA § 502(7), "navigable waters" are defined as "the waters of the United States, including the territorial seas." The definition of "Waters of the United States" includes lakes, rivers, streams, creeks, and wetlands, etc., and applies to all surface waters on the NorthMet Project site. See 40 CFR 122.2.

The PSDEIS seems to anticipate that there will be discharges from the Mine Site to the Partridge River as well as other surface waters such as the West Pit Outlet (aka Unnamed Creek), and on-site and off-site wetlands, but does not conclude that the Mine Site will require an individual NPDES permit. Based on currently available information we believe that an NPDES permit is required at both the Mine and Plant Sites, with limits and monitoring requirements applied at the points of discharge. To comply with the CWA, the permit will need to have been issued when the discharge occurs. WQBEL's must be developed based on water quality standards, including downstream standards, and standards applicable to wetlands. WQBEL's must be calculated based on low flow (7Q10) conditions in the receiving waters.

Although Yelp Creek is in close proximity to the Category I stockpile we have not found any discussion in the PSDEIS of whether there will be a discharge from Mine Site features to Yelp Creek (taking into account measures to prevent discharge from the Category 1 stockpile).

Recommendation: Identify whether there will be discharges to Yelp Creek; and if so indicate that these discharges will be addressed through NPDES permitting

Upon publication of the SDEIS, EPA submitted additional comments, including:[73]

Comment# 7. The SDEIS anticipates that pollutants will be discharged from mine site features, travel via groundwater pathways and reach the Partridge River several years following the start of the mining project. See SDEIS Table 5.2.2-26. However,

[73] Alan Walts letter to PolyMet co-lead agencies, Supplemental Draft Environmental Impact Statement for the NorthMet Mining Project and Land Exchange, Hoyt Lakes, St. Louis County, Minnesota – CEQ No. 20130361, March 13, 2014.

> as EPA has stated previously, the pollutants originating from mine site features may discharge to jurisdictional wetlands and tributaries prior to reaching the Partridge River. CWA Section 301 prohibits any point source discharge of pollutants to waters of the United States, either directly or via directly connected ground water, unless the discharge complies with a NPDES permit. Waters of the United States include jurisdictional wetlands and tributaries. See 40 CFR 122.2.

Finally, in a communication to MPCA regarding PolyMet's NPDES Permit Application, EPA related the results of their focused review of the application[74], specifically new industrial discharges but also describing other deficiencies they noted in the application materials. They again called attention to the lack of request by the applicant for NPDES permit coverage for discharges at the mine site, as identified in the FEIS:

> EPA's position, as we explained previously during the development of the FEIS, is that the incorporation of the FEIS into the Application without ensuring that NPDES permit coverage is fully consistent with the information presented in the FEIS could create potential enforcement and permit shield issued under Section 402(k) of the Clean Water Act (CWA). If the application is not revised to either request NPDES permit coverage for the specific discharges proposed in the FEIS or to remove all references to the FEIS and supporting documentation, then any draft permit must include a prohibition on discharges from mine site point sources to surface waters including those discharges that occur via a direct hydrologic connection, as documented in the FEIS.

The draft NPDES/SDS permit fails to address these issues, and an NPDES/SDS permit cannot be issued until these matters are fully addressed. Even the proposed special conditions for the draft permit are inadequate[75]:

> **Special Permit Requirements – No Unauthorized Discharge**
>
> *Permit conditions to ensure there are no unauthorized discharges from the Mine Site and Plant Site:*
>
> - Permit conditions specifically prohibiting discharge to surface waters from the Mine Site and from the FTB Seepage Containment System and the HRF Leachate Collection Systems at the Plant Site.
> - Requirement for all water collected by the groundwater containment systems at the Category 1 Waste Rock Stockpile and the FTB seepage capture systems to be routed to the WWTS or pumped to the FTB.

[74] EPA to MPCA, NPDES Permit Application for PolyMet Mining Corporation's NorthMet Mine, November 3, 2016.
[75] MPCA NPDES/SDS Draft Fact Sheet, p. 69.

- Requirement to monitor and maintain a series of paired piezometers and wells at the Category 1 Waste Rock Stockpile and the FTB Seepage Containment System.
- Requirement for the facility to maintain an inward gradient at Category 1 Waste Rock Stockpile and the FTB Seepage Containment System and mitigation requirements to begin in the event inward gradients are not maintained.
- Requirement to conduct regularly scheduled inspections of the FTB Seepage Containment System and HRF Leachate Collection System

Glaringly absent from this list of special permit requirements is an explicit prohibition from discharges to surface waters via hydrologically connected groundwater. Without this condition, PolyMet will be able to discharge their mine site and plant site wastes and not be considered in violation of their permit. MPCA must establish this prohibition; otherwise, it will be clear that the agency is seeking to protect PolyMet, not the public or the environment.

6. The draft permit does not have sufficient monitoring of surface and groundwater resources to determine compliance with permit conditions and applicable law

The Band does not find that proposed surface and groundwater monitoring system associated with the NPDES/SDS permit is adequate to detect issues at either the mine site or at the plant site so that corrective actions can be taken in a meaningful time period. Additionally, in some cases the permit allows improper or insufficient monitoring limits.

Insufficient Discharge Limits

In reviewing the draft Fact Sheet for the NPDES/SDS permit and attachments, the Band notes that the discharge at SD001 (which monitors the WWTS) has a mercury limit of 2,000 ng/l (daily max) and 1,000 ng/l (calendar monthly average).[76] While this is one of the required federal limits (technology based effluent limit or TBEL) for new industrial sources (taconite), it is not the controlling limit for mercury in the Lake Superior Basin. The Great Lakes Initiative ("GLI") chronic wildlife criterion of 1.3 ng/l is the applicable standard for this discharge,[77] and this is particularly critical for a new or expanded discharge to a watershed that is already impaired for mercury yet does not have a TMDL in place. The draft permit must be modified to use the GLI criterion.

There is no discharge limit defined for specific conductance, even though there are exceedances to the Class 3 and 4 standards in the receiving waters from existing legacy

[76] MPCA NPDES/SDS Draft Fact Sheet Attachment 1, Summary of Monitoring Stations & Monitoring Requirements.
[77] Minn. R. 7052.0100 subpt. 3.

contamination, and assessed aquatic life use impairments in the Embarrass River that have been correlated with elevated specific conductance.[78] The Band has urged the MPCA to promulgate a protective aquatic life use criterion for specific conductance in its next triennial review; in the meantime, the existing standard should be applied in this permit to ensure that the pollution attenuation expected by PolyMet environmental controls can be clearly distinguished from new loadings.

Monitoring Will Not Detect Mine Site Discharges

Although EPA has established that any mine site discharge to surface water via hydrologically connected groundwater would be a permit violation under the Clean Water Act, mine site surface water quality monitoring actually seems to be designed to avoid detection of such a violation. For example, it appears that MPCA is proposing to monitor as "background" sites that may in fact be impacted by the PolyMet project. From the draft Fact Sheet:

> Monitoring of the upstream background monitoring stations will be used to establish background/baseline conditions at the Mine Site against which downstream monitoring can be compared. Monitoring of the upstream stations will be required monthly for Group B parameters and twice per year for Group C parameters.[79]
>
> Background Surface Water Monitoring
>
> A total of four surface water monitoring stations will be located upstream of the Mine Site:
>
> - Partridge River – upstream of the Mine Site at SW002
> - Wyman Creek – upstream of the Transportation and Utility Corridors at PM-6
> - Longnose Creek – upstream of the Transportation and Utility Corridors at LN-2
> - Wetlegs Creek – upstream of the Transportation and Utility Corridors at WL-2
>
> Downstream Surface Water Monitoring
>
> A total of four surface water monitoring stations will be located downstream of the Mine Site:
>
> - Partridge River – downstream of the Mine Site at SW004c
> - Wyman Creek – downstream of the Transportation and Utility Corridors at PM-5
> - Longnose Creek – downstream of the Transportation and Utility Corridors at LN-1
> - Wetlegs Creek – downstream of the Transportation and Utility Corridors at WL-1

[78] MPCA, St, Louis River Watershed Stressor Identification Report, Dec. 2016, pp. 22,33, available at https://www.pca.state.mn.us/sites/default/files/wq-ws5-04010201a.pdf .
[79] MPCA NPDES/SDS Draft Fact Sheet pp. 53-54.

The Band is concerned that if groundwater contours and likely flowpaths of pollutants through the surficial aquifer are closely examined, the sites designated as "background" may actually be downstream of PolyMet groundwater seepage from either the mine site or tailings site, and would reflect mine-influenced conditions rather than unimpacted or reference conditions. Such a closer evaluation should be made to verify that this is not the case, and should also consider the pattern of the mapped fractures, which generally flow from northeast to southwest.

The draft permit's requirements for internal waste stream monitoring at the mine site, pit dewatering, waste rock stockpiles, ore surge pile, and Overburden Storage and Laydown Area (OSLA), unreasonably assume complete capture of all seepage associated with these reactive mine waste sources. For the OSLA and Construction Mine Water Basin, even fewer monitoring requirements are imposed. As summarized by the draft NPDES Fact Sheet:

> *Overburden Storage & Laydown Area (OSLA) and Construction Mine Water Basin:* Monitoring of runoff collected at the OSLA will be monitored for Group A parameters once per month. Because the OSLA and Construction Mine Water Basin will store materials that are not expected to release harmful constituents, a reduction in the parameter list from what is monitored at other stockpile locations is appropriate.[80]

The draft NPDES Fact Sheet also states:

> The OSLA runoff is expected to be of sufficient water quality so as not to require treatment beyond settling to remove suspended solids prior to pumping to the FTB. Any mercury that may be released from the stored peat will be removed with the settled solids in the collection pond and/or via filtration and adsorption by tailings particles at the FTB.
>
> Groundwater downgradient of the OSLA will be monitored using one monitoring well screened in the surficial aquifer. This well (GW411) will be monitored quarterly for a focused set of key parameters and annually for a wider set of parameters.[81]

Since these are unlined mine wastewater storage features, and dissolved pollutants can migrate quickly through shallow groundwater to downgradient surface water features (wetlands and Partridge River), there should be a mercury limit (1.3 ng/l) associated with these monitoring locations.

[80] MPCA NPDES/SDS Draft Fact Sheet Draft Fact Sheet Attachment 1.
[81] MPCA NPDES/SDS Draft Fact Sheet p. 65.

Minnesota rules require that every permit issued by the MPCA contain monitoring requirements "that are sufficient to yield representative data to determine whether there is compliance with the terms and conditions of the permit or compliance with Minnesota and federal pollution control statutes and rules."[82]

The draft permit should be revised to do this.

North Flow Path Bedrock Aquifer Monitoring Is Insufficient to Capture Plumes

During the preparation of the FEIS, Dr. John Coleman with the Great Lakes Indian Fish and Wildlife Commission provided the co-lead agencies compelling evidence that groundwater from the Mine Site could potentially flow north into the Rainy River Basin via the Northshore Mining Company's Peter Mitchell Pit (Northshore Mine) at mine closure.[83]

The Co-Lead Agencies considered this possibility, and concluded that such northward flow was possible, but not reasonably foreseeable. Following publication of the FEIS, additional comments were submitted regarding the possibility of northward flow. DNR's adequacy decision concluded that even if northward flow were to occur, it would be possible to detect and prevent effects within the Rainy River Basin. The USFS similarly concluded that northward flow to the Rainy River Basin was unlikely, and that any potential northward flow could be detected and prevented. A monitoring plan for assessing hydrogeologic conditions in the area between the NorthMet pits and the Northshore Mine has been submitted to the DNR and Minnesota Pollution Control Agency (MPCA) separate from this Application (Reference (10)).[84]

The Band's submitted comments on the MNDNR draft permit to mine addressed this issue, and noted that the MPCA also bore regulatory oversight through their permitting and monitoring responsibilities. Excerpted from those comments:

> Neither PolyMet in its revised application nor the MNDNR in its draft special conditions address EPA's position on what needed to be done to address the northward flow. In its comments on the PolyMet FEIS, the EPA agreed with experts that "a northward flow path is a possibility." The EPA stated that "further impact assessment is needed *during the permitting process*, including information on water quality and quantity impacts that may occur as a result of a

[82] Minn. R. 7001.0150, subp. 2, item B.
[83] Letter from John Coleman to co-lead agencies, "Comments on PolyMet mine site contaminant northward flowpath and groundwater model calibration", August 11, 2015.
[84] Revised permit to mine application, Environmental Setting p. 78.

northward flow path and/or contingency mitigation measures."[85] The EPA recommended:

> Recommendation I: Given the possibility of a northward flow path, analyses of environmental impacts associated with this possibility should be conducted and evaluated *during the permitting process*. These analyses should include anticipated direct and indirect environmental impacts that may occur if one or more of the proposed contingency mitigation measures are implemented.[86]

But rather than follow EPA's recommendations and resolve this controversial issue by including as part of the permitting process, specific conditions to prevent northward flow, the MNDNR would allow PolyMet to defer analysis just long enough to avoid scrutiny and reduce its own leverage to deny or condition the PolyMet permit to mine. The MNDNR's draft special conditions simply recite that:

> ¶66. Prior to blasting within any mine pit footprint, the Permittee must submit a report and supporting data assessing the potential for current and future northward groundwater flow at the Mine Site. If the DNR concludes that this report, or other monitoring data, indicates a reasonable likelihood of northward groundwater flow at the Mine Site, then the DNR will require adaptive management or mitigation.
>
> ¶67. Any required management or mitigation must be approved by the DNR.[87]

The Band believes these MNDNR draft Conditions are vague, unenforceable, and shield PolyMet from their obligation to demonstrate that their proposed mine project will meet legal requirements. The draft Permit is deficient because the MNDNR has not specified their authority to review and approve the report, and because the way that "adaptive management or mitigation" will be implemented under the Permit is not clear. The Permit should establish the required content for the report, and define their guidelines for approving the report. If the report is approved, and if the information in the report supports the conclusion that there is the potential for a northward groundwater flow, the MNDNR should:

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[85] EPA, Letter and Detailed Comments on the NorthMet Mine Final Environmental Impact Statement, Dec. 21, 2015, p. 4 (emphasis added)
[86] *Id*., emphasis added.
[87] DNR draft Conditions, p. 8.

- require PolyMet to submit a plan for how that flow will be mitigated
- define the agency's criteria for approval of the mitigation plan, and
- provide for a process under which the approved plan will be incorporated into the permit as an amendment.

Given the nature of this disputed issue, the MNDNR should require that these reports be submitted to the MPCA as well for its review and approval, and the plans should be incorporated into the Permit to Mine and NPDES/SDS permit through formal amendments.

No Limits at Mine Site Surface Water Monitoring Stations

According to the draft NPDES/SDS Fact Sheet, the only allowable discharges from the Mine Site are those authorized by Minnesota's Industrial Stormwater General Permit and Construction Stormwater General Permit. The draft permit explicitly prohibits any discharge of wastewater to surface waters from the Mine Site. All mine-related wastewaters will be collected in various sumps and collection systems, routed to equalization ponds at the Mine Site, and then pumped via pipeline to the Plant Site for treatment and discharge at that location.

The draft permit envisions that each of the Mine Site features will be constructed and managed such that there is no point source discharge to surface waters nor a discernable impact to surface waters or groundwater. To that end, the draft permit requires monitoring of the performance of the Mine Site engineering controls and the groundwater quality downgradient of the Mine Site features.

But both the limited number of monitoring sites proposed for baseline conditions and those proposed to identify surface water impacts are insufficient to detect performance failures of the engineering controls. Similarly, the sites on Longnose Creek and Wyman Creek are intended to monitor impacts of any spills or leakage from the railway and pipeline corridor between the mine site and the plant site.[88] Yet only a single surface water site (identified on the map as SW004c) is proposed to monitor impacts from discharge via groundwater to surface water from the entire mine site. This lone monitoring site, located on the Partridge River approximately a mile south of the mine site,[89] simply cannot be expected to capture evidence of systems performance failure for the entire mine site.

The PolyMet Draft NPDES/SDS permit must be revised to include additional surface water monitoring sites at the mine site, and in wetlands and streams in proximity to mine site sources

[88] MPCA NPDES/SDS Fact Sheet, *supra*, pp. 53-54.
[89] PolyMet Permit App. Vol. I, Large Fig. 8, *supra*, See MPCA Draft NPDES/SDS Permit, pp. 19, 92.

of contamination in order to ensure that PolyMet is complying with the draft permit's prohibition of the discharge of pollutants into surface water

Insufficient Hydrology, Water Quality Monitoring and Lack of Protective Thresholds in Partridge River Watershed

The MPCA proposes to include a condition referencing the stream hydrology monitoring required by the DNR Water Appropriation permits for the Project. If monitoring indicates an annual average change in hydrology of greater than 20% from existing conditions at the Plant Site – that is, conditions before the implementation of the tailings basin pumpback systems, which are short term mitigation measures as part of the Cliffs Erie Consent Decree – in Unnamed Creek, Trimble Creek, Unnamed (Mud Lake) Creek, or Second Creek at the Plant Site, the certification requires the permittee submit to the MPCA the stream hydrology data, along with an analysis of whether existing and beneficial uses of the stream(s) have been affected. The certification also requires a proposal for adaptive management, including possible mitigation, as appropriate, to address any loss of existing uses.[90]

But no such conditions are proposed to protect hydrology in the Partridge River watershed. In 2008, Barr Engineering provided Cliffs Natural Resources with a Long Range Hydrology Study ("LRHS") for the NorthShore Mine Peter Mitchell Pit. On page 20 this study states that "Flows in the upper Partridge River immediately downstream of the post-closure watershed boundary may be reduced by close to 100 percent relative to current conditions." The 4.5 mile reach of the Partridge River that the LRHS suggests might completely dry up is the portion of the Partridge River that winds around the PolyMet mine pits. Based upon this prediction, the DNR *must* consider how augmentation to flows in the Partridge River could be implemented through enforceable conditions in PolyMet's water appropriation permit. Additionally, wetlands near the mine site may need augmentation and treated water may be needed to prevent a northward flowpath of contaminated groundwater from the mine pits at closure.[91] Water quality evaluation points have apparently been negotiated with the regulatory agencies with minimal input from the public. Inexplicably, the FEIS does not include any model evaluation or monitoring points for the first three-mile (or longer) section of the Partridge River that may be impacted. It appears that the model evaluation and monitoring points for the Partridge River were chosen to minimize the potential impacts from the mine project that are shown by modeling or monitoring.

Impacts to the Partridge River would presumably be greatest along the primary groundwater recharge zone closest to mine operations. Based on predicted pathways for discharges to the

[90] 401 cert fact sheet., pp. 16-17.
[91] GP FDL comments on draft Water Appropriations Permits, 2017.

river from mine features, monitoring and evaluation points are more than three miles downstream from this point and are just below the discharge from a creek. Selection of these monitoring and evaluation points ensures that the discharges likely to be highest in pollutant concentrations are not caught by monitoring until well downstream, having been diluted by presumably clean groundwater and by surface water from an area less likely to be affected by mine operations.

The failure to monitor surface water at the actual point of contact with groundwater and surface water closest to the mine is directly contrary to GLI requirements and standards to ensure that water quality will not be lowered for impaired waters. The FEIS methodology fails to evaluate the receiving water nearest the actual discharge to the Partridge River, and therefore is inadequate to address potential impairment.[92]

Plant Site

The draft NPDES/SDS permit would require five surface water quality monitoring stations, the nearest of which is approximately one mile from the northern edge of the tailings facility.[93] However, there are streams that originate significantly closer to the FTB than the surface monitoring stations selected. And like the mine site, there are wetlands located immediately adjacent to the sources from which FTB contamination would originate: both the discharge outfalls and the seepage containment system.[94]

Additional surface water quality monitoring sites must be established in all surface water features (streams and wetlands) in proximity to the FTB, in order to ensure the performance of the engineered controls intended to prevent the release of pollutants to the environment.

Insufficient Seepage Containment System Groundwater Monitoring Stations: at the HRF

According to the NPDES/SDS Fact Sheet, the Hydrometallurgical Residue Facility (HRF) is a closed-loop system that will not have a discharge. Water is recirculated through the facility and reused in the hydrometallurgical process. The draft permit requires monthly monitoring of the HRF Pond water at WS004 and any leachate collected by the HRF Leakage Collection System at WS005 for Group B parameters and annual monitoring for Group C parameters.

The Draft NPDES/SDS permit requires monthly inspection of HRF pond and HRF leakage collection system to "evaluate the effectiveness of the liner and Leakage Collection System."[95]

[92] Gadway Quantum.
[93] See Barr, Mass Balance Calculations for Mercury, Sept. 25, 2017, ("Barr 2017 Mercury Calc.), p. 4, autop. 348, Attachment F to PolyMet NPDES/SDS Application Vol. III –WWTS, updated Oct. 2017.
[94] PolyMet FEIS, Figure 4.2.3-5.
[95] MPCA Draft NPDES/SDS Permit, p. 48.

Yet, although there are monitors for internal waste streams at the HRF, there are zero monitoring sites that could actually detect liner leakage at the HRF: no bedrock groundwater monitoring sites, no surficial aquifer monitoring sites and no surface water quality monitoring sites.[96] This despite the fact, as discussed above, that the location of the HRF invites liner failure and subsequent seepage.

Given the potential for failure of the liner system, and the need to comply with the monitoring requirements of the Minnesota Administrative Rules,[97] the PolyMet NPDES/SDS permit must also include strategically placed groundwater and surface monitoring sites to determine whether the liners for the HRF are leaking. The HRF will contain highly toxic wastes, including a large mass of mercury, on an unsuitable site with an unstable foundation; therefore, it is imperative that MPCA verify effective leakage capture, not assume.

All monitoring results from the PolyMet project should be immediately made available online so that members of the public will have timely and transparent information as to PolyMet's compliance with Minnesota water quality standards and the requirements of the federal Clean Water Act. Surface water monitoring sites located in wetlands should also specifically measure sulfate, mercury, methylmercury and water fluctuations, to address concerns about increased mercury contamination resulting from the PolyMet project.

Effluent Limits at Monitoring Locations are not Sufficiently Protective

Federal regulations require that any new copper mine must comply with new source performance standards which provide technology-based effluent limitations (TBELs).[98] The only effluent limits contained in the Draft NPDES/SDS Permit for the PolyMet copper-nickel mine project are set at SD001, the monitoring station for surface discharge from the plant site wastewater treatment system (WWTS); those limits are based on TBELs.[99] But if treated wastewater was discharged at the contaminant levels allowed under new TBELs for copper mining, it would greatly exceed Minnesota water quality standards.

While each NPDES permit must include TBELs, where applicable,[100] these TBELs serve as a floor, not a ceiling:

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[96] Id.
[97] Minn. R. 7001.1080 subpt. 5.
[98] 40 C.F.R. §440.104.
[99] See Draft NPDES/SDS Permit, pp. 70-71 setting monthly average limits of 500 µg/L for arsenic, of 50 µg/L for cadmium, of 150 µg/L for copper, of 300 µg/L for lead, of 1000 nanograms per liter (ng/L) for mercury and of 500 µg/L for zinc.
[100] 40 C.F.R. §122.44(a)(1); See 33 U.S.C. §§ 1311,1316.

> Generally, the Clean Water Act uses two different types of standards "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters": technology-based standards and water-quality standards. 33 U.S.C. § 1251(a). Technology-based standards set a minimum level of treatment that must be performed by those who discharge pollutants into waters. That level is predetermined by EPA to be both technologically available and economically achievable. . . . In contrast, water quality standards depend on the purpose for which a particular body of water is used. 40 C.F.R. § 131.3(i).

Each NPDES permit must also include water quality-based effluent limits (WQBELs) and requirements in addition to or more stringent than technology based standards, to the extent necessary to achieve water quality standards established under section 303 of the Clean Water Act, including state narrative criteria for water quality."[101]

Annual Assessment to Ensure no Unauthorized Discharges from the Mine Site and Plant Site Lacks Enforcement Mechanism

The draft permit contains special requirements for both an Annual Groundwater Evaluation Report and an Annual Comprehensive Performance Evaluation Report in addition to the permit conditions mentioned above. The purpose of these reports is, in part, to utilize all available monitoring and operating data (including groundwater quality, groundwater elevation, waste stream monitoring and pumping records) to fully evaluate facility performance on an annual basis and to assess whether there is, or is the potential for, a discharge to surface waters. The annual evaluations will provide a comprehensive assessment of the facility engineering controls at the Mine Site and Plant Site in minimizing impacts to water resources downstream of the facility and will require an assessment of potential mitigation options or adaptive management is needed if the potential for an unauthorized discharge to surface waters exists. The Annual Groundwater Evaluation Report and the Annual Comprehensive Performance Evaluation Report are further discussed in the sub-section of the same name below.

Monitoring data evaluation and reporting are key elements for MPCA's regulatory oversight of any permitted facility. But the draft NPDES/SDS permit lacks any penalties or repercussions for evidence that engineering controls are not meeting performance requirements, or if a violation has occurred. MPCA has wide ranging authority to enforce permit violations, including "criminal prosecution; action to recover civil penalties; injunction; action to compel performance; or other appropriate action" under Minn. Stat. § 115.071.[102] The failure to describe what actions MPCA will take to enforce the permit is a major deficiency of the draft

[101] 33 U.S.C §§1311(b)(1)(C); 1312(a); 1342(b) and 40 C.F.R § 122.44(d)(1).
[102] *Id.* subdiv. 1.

permit, and must be rectified so that the public will be assured that PolyMet will be held accountable for failing to meet permit requirements.

7. The Draft Permit Does Not Sufficiently Address Mercury Impacts

The MPCA NPDES/SDS Fact Sheet states that a reasonable potential analysis for mercury wasconducted as part of the permit application review and the Agency determined there is no reasonable potential for concentrations of mercury to cause or contribute to an exceedance of water quality standards.[103] The Band remains entirely unpersuaded by the arguments put forward by PolyMet and apparently adopted by the MPCA, that mercury impacts from the project will be insignificant.

FAs the Band described in its comments and objections on the MNDNR draft permit to mine:

> Throughout its PTM Application, PolyMet has failed to include mercury in its characterization of wastes or water quality. As noted above, two of the areas where mercury is of greatest concern are not characterized at all – the HRF in which 164 pounds of mercury will be deposited each year[104] and the unlined OSLA, where mercury-containing peat will be stored. We have found multiple tables in PolyMet's Water Management Plans and draft permit to mine that estimate water quality in various locations where water contacts waste, from the toe of the FTB to mine pits and waste rock seepage. But none of these tables estimate levels of mercury in the seepage or wastewater, even though all of the receiving waters for the proposed PolyMet project (the Partridge River and Embarrass River; Embarrass, Sabin, Wynne, Esquagama and Colby Lakes; the Whitewater Reservoir and numerous downstream segments of the St. Louis River) are all listed by MPCA under the Clean Water Act 303(d) as impaired due to mercury.[105] MNDNR should require PolyMet to revise its application to analyze and disclose mercury concentrations in *all* project wastes and in *all* water quality associated with mine site or plant wastes or ores before a permit to mine can be issued.

PolyMet continues to overlook mercury impacts. PolyMet's NPDES/SDS Application does not assure any level of mercury removal efficacy for its proposed treatment. PolyMet states, "Some mercury removal is expected across the greensand filter. However, the influent concentration of mercury to the tailings basin seepage treatment train is expected to be below the WWTS

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[103] MPCA NPDES/SDS Fact Sheet, *supra*, p. 42.
[104] PolyMet Facility Mercury Mass Balance Analysis (RS66) (March 2007).
[105] MPCA, Draft Impaired Waters List 2018, excerpt with St. Louis River, Lake Superior Basin 2018 Mercury Impaired Waters full listing at https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list.

discharge treatment target."[106] To support this conjecture, PolyMet cites a "bench-scale study" of the effectiveness of flotation tailings for removing mercury[107] and concludes that the concentration of future FTB seepage "is expected to be similar to the concentrations in the seepage from the existing LTVSMC tailings basin, which is approximately 1.0 ng/L."[108] This conclusion is entirely unsupported; PolyMet's seepage will have an entirely different chemical "fingerprint" than seepage from taconite tailings.

Although neither the draft PolyMet Permit to Mine nor the NPDES/SDS permit applications provide the underlying data to assess these claims, documents produced during the course of environmental review made the same claims and supplied underlying documents that allegedly supported them. Yet, neither the bench-scale study of flotation tailings adsorption of mercury nor monitoring data from the existing LTVSMC tailings basin support PolyMet's claims that PolyMet's tailing seepage would have mercury concentrations below the levels required to comply with Minnesota's 1.3 ng/L standard.

Nevertheless, the draft permit accepts PolyMet's view that mercury impacts are likely to be insignificant:

> *Mercury*
> A Reasonable Potential analysis for mercury was conducted as part of the permit application review. Based on its review, the Agency has determined there is no reasonable potential for concentrations of mercury to cause or contribute to an exceedance of water quality standards. The MPCA expects no measurable change in mercury concentrations downstream in the St. Louis River at Forbes or below. The draft permit requires weekly monitoring of the effluent at SD001 for total mercury using analytical method 1631 and clean-sampling method 1669. The applicable TBEL under the NSPS for mercury is a daily maximum of 0.002 mg/L and a monthly average of 0.001 mg/L.[109]

The Band has already identified this error in the applicable mercury permit limit. The draft permit should not be issued until mercury impacts can be properly assessed in light of the bench-scale study and monitoring data from the existing LTVSMC tailings basin, which indicate that mercury concentrations will *not* comply with applicable standards.

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[106] PolyMet NPDES/SDS App. Vol. III, supra, p. 85. See also Draft NPDES/SDS Permit, *supra*.
[107] Id., p. 97, citing "Reference (45)," which is not listed among the references on p. 118.
[108] *Id.,* p. 99, citing Section 6.9 of PolyMet NorthMet Project Water Mgt. Plan - Plant (v6). August 2017. This version of the Water Mgt. Plan was not provided in any public record; version 7 of the Plan, contained in the Permit to Mine Application as Appendix 11.3, includes no information regarding mercury.
[109] MPCA NPDES/SDS Fact Sheet, p. 42.

More broadly, the Band has consistently 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.[110] We provide additional extensive comments on unmeasured, unmodeled, yet predictable mercury impacts from the PolyMet project in our comments on the draft §401 certification, also submitted today. 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.

8. The Resolution of Legacy Contamination is Uncertain under the Draft Permit

MPCA's Fact Sheet for the draft permit includes a section referencing how the agency expects to see legacy contamination issues from the former LTVSMC facility addressed if the PolyMet project is permitted and the company acquires land and facilities currently subject to a Consent Decree. Again, the agency bases its determination that the legacy contamination will be attenuated and the PolyMet project can achieve compliance with these conditions by assuming a seepage capture rate of 100% at the tailings basin[111] – which, as the Band has already described, is implausible. The Fact Sheet goes on to state:

> Water quality in the wetlands and other waters downgradient of the existing tailings basin, which LTVSMC operated until 2001, has been affected by ferrous (legacy) surface seepage and groundwater seepage. Baseline monitoring in Mud Lake Creek, Trimble Creek, and Unnamed Creek has documented exceedances of surface water quality standards for several parameters associated with the former ferrous operations, namely total dissolved solids (TDS), specific conductance, alkalinity and hardness.
>
> …When the Project begins operating, the existing legacy seepage and future nonferrous seepage captured by the seepage containment system will no longer contribute to the hydrology of the downstream wetlands and creeks. To obtain the benefits of the seepage capture system while at the same time maintaining the functional hydrology of these downstream waters, the collected seepage will be replaced with treated water from the Waste Water Treatment System (WWTS). The treated water, which will meet all surface water quality standards, will be discharged in a dispersed manner to the headwater wetlands immediately downstream of the capture system in the Trimble and Unnamed Creek watersheds.

[110] eg., PolyMet SDEIS 5-210, PolyMet FEIS 5-10

[111] Attentuation of Legacy Tailings Basin Pollutants, MPCA NPDES/SDS Fact Sheet, p. 73.

> …Once PolyMet begins operating the FTB Seepage Containment System and starts collecting the existing ferrous tailings basin seepage for treatment at the WWTS with subsequent discharge of treated augmentation water downgradient of the containment system, there will be a beneficial effect on downstream water quality. However, because there will be previously impacted waters attributable to pre-Project conditions remaining in waters downgradient of the containment system (both wetland water at the surface and deeper seepage that has yet to up-well into surface waters), there will be a period of time following the startup of FTB Seepage Containment System and WWTS before the pollutants in downstream waters are fully attenuated. In other words, there will be a lag in time before PolyMet's capture of seepage and discharge of treated water will completely disperse the remaining legacy contaminants presently in downstream waters.[112]

The MPCA's assumption that augmenting the three affected streams with treated water will completely disperse the legacy contaminants is, again, based upon the unrealistic assumption of 100% seepage capture at the FTB. The failure of the Draft NPDES/SDS Permit to set water quality-based effluent limitations for this direct discharge from the existing LTVSMC tailings basin prior to the construction of the FTB and its seepage containment system fails to comply with the Clean Water Act, its implementing rules or Minnesota water quality standards. During future project construction, or under a scenario where the PolyMet Project does not proceed for any reason, existing LTVSMC tailings seepage discharge to surface waters would clearly have the potential to cause or contribute to exceedances of Minnesota's water quality standards. The MPCA must conduct a reasonable potential analysis for existing LTVSMC discharge, and the Draft NPDES/SDS Permit must incorporate water quality-based effluent limitations (WQBELs) for any parameters that have the potential to cause or contribute to exceedances of Minnesota's numeric and narrative water quality criteria.

The EPA has advised the state that enforcement of Minnesota surface water quality standards is not discretionary under the Clean Water Act.[113] Regardless of the time elapsed before PolyMet commences operations, the MPCA has no discretion under applicable federal or state law to decide not to regulate a direct discharge from the existing LTVSMC to waters of the United States. The Band is just as deeply concerned about the MPCA's broader policy regarding the cleanup of mining pollution at the plant site, for which PolyMet will be assuming the liabilities that Cliffs now holds. From the Band's comments on the draft Permit to Mine:

> PolyMet has long planned to acquire, repurpose and reuse former LTVSMC facilities at the Plant Site from Cliff's, including the tailings basin. These properties are identified as

[112] *Id.*, pp. 72-74.
[113] EPA (T. Hyde), Letter to Sen. Bakk and Rep. Dill, May 13, 2011, pp. 1-2.

the LTVSMC Legacy Properties for purposes of Section 16 of the revised PTM application[114], and PolyMet provided a Legacy Closure Plan and specifically associated financial assurance to replace Cliffs Erie's closure plan and financial assurance under Cliffs' permit to mine. This Legacy Closure Plan (Appendix 15.1) includes provisions for investigations and remedial actions in accordance with MPCA's voluntary investigation and cleanup program (VIC), and other reclamation activities such as dewatering of the tailings basin. After consistently questioning MPCA and the co-lead agencies about their anticipated regulatory oversight for addressing LTVSMC's legacy contamination throughout the entire EIS process, the Band is astounded to see that PolyMet will not be held to any water treatment activities or costs to remedy legacy pollution at the tailings basin[115]. The Band objects to this proposed decision, as it is a clear violation of the Clean Water Act and must be rejected and revised.

This determination that no water treatment would be required, nor any associated costs included in the financial assurance for the Legacy Closure Plan, is apparently based on a December 12, 2017 memorandum from the Minnesota Pollution Control Agency (MPCA) to the DNR. This memorandum states: "…should the PolyMet copper-nickel mine project never become operational (scenario II), no treatment or mitigation would be required for potential exceedances of mercury, sulfate, alkalinity, hardness, total dissolved salts and specific conductance at the LTVSMC tailings facility.[116]

The tailings basin is currently regulated under an existing Cliffs NPDES/SDS permit (MN 0042536) and a Consent Decree, which requires Cliffs to implement a Long Term Plan for testing and implementing active and passive water treatment at two outfalls, SD026 (south discharge from tailings basin) and SD033 (Area 5N). MPCA has been exceptionally lenient in enforcing the timelines in the Consent Decree as (we can only assume) it has been anticipated that PolyMet would be assuming the environmental liabilities associated with the LTVSMC properties it intends to acquire. But now, according to the Foss memo, "It is important to note that operation of the proposed NorthMet project absolves any legacy water quality issues at the ferrous Basin."[117]

[114] PolyMet PTM Application, p. 453.
[115] Legacy Closure Plan for Ferrous LTVSMC Legacy Areas subject to Assignment from Cliffs Erie, L.L.C., Dec. 2017, Appx. 15.1 to PolyMet PTM Application, autop. 6 of Appx. 15.
[116] Ann Foss, MPCA Metallic Mining Sector Director, Legacy Permitting/Financial Assurance for Change in Assignment Former LTV Steel Mining Company (LTVSMC) Tailings Basin and Plant Site (Dec. 12, 2017), Attachment O to Legacy Closure Plan for Ferrous LTVSMC Legacy Areas subject to Assignment from Cliffs Erie, L.L.C., Dec. 2017, Appx. 15.1 to PolyMet PTM Application, Attachment O provided in Exhibit 41.
[117] *Id.,* pp. 1, 2, 10.

The memo goes on to specify that for mercury, without public review of its analysis, MPCA has determined that high concentrations of mercury exceeding Minnesota water quality standards in surface water surrounding the LTVSMC Basin "are most likely due to influences from precipitation and background concentration, not from seepage from the existing Basin."[118] Thus, under scenario II, "no treatment/mitigation is necessary in final closure for mercury."[119]

Similarly, for sulfate, MPCA assumes that high sulfate at the Basin "will likely not result in an exceedance of the calculated sulfate standard (or alternative sulfate standard in the proposed rule) if the MPCA's proposed rule revision goes into effect."[120] However, if the proposed wild rice rulemaking revision were not completed (which it is not), the MPCA suggests "another regulatory option available to the State would be to consider developing a site-specific standard based on the science at that time."[121] MPCA also cited current state law that prohibits the agency from requiring in any permit financial expenditures to design or implement sulfate treatment technologies.[122] So regardless of circumstances, MPCA declares that under scenario II, "no treatment/mitigation for sulfate would be required for protection of wild rice."[123]

Finally, regarding an array of Class 3 and Class 4 pollutants known to be discharging in exceedance of MN water quality standards from the LTVSMC tailings site (alkalinity, hardness, total dissolved salts and specific conductance), MPCA stated that the Agency "has made this rulemaking a high priority and expects to propose revisions in 2018." Ms. Foss continued, "Based on current information, MPCA expects that these standards will either remain unchanged or become less stringent."[124] The memo also suggested that, even if those criteria were not weakened, "At any point, the MPCA can consider other regulatory options such as site-specific standards (SSS), a use attainability analysis (UAA), a use and value demonstration (UVD), or a variance."[125] Thus, if the PolyMet project did not become operational (scenario II), "no treatment/mitigation for alkalinity, hardness, TDS and specific conductance would be required."[126]

[118] MPCA, Legacy Permitting Attachment O, *supra*, p. 4.
[119] *Id*., see also p. 5.
[120] *Id*., p. 4.
[121] *Id*.
[122] *Id*., p. 6.
[123] *Id*., p. 7.
[124] *Id*., p. 4.
[125] *Id.*, p. 9.
[126] *Id*., pp. 4, 10.

Apparently, the state permitting agencies are prepared to give PolyMet a free pass from the liabilities we were led to believe they would assume when acquiring the properties from Cliffs – whether or not their project ever becomes operational. If they do move forward and build the project, simply operating it "resolves any legacy water quality issues at the ferrous Basin." Further, the Band's interpretation of the table labeled "Legacy Tailings Basin Cells 1E and 2E – Order of Magnitude Estimate of Closure Costs (05/24/2017) suggests that PolyMet, in preparing the tailings basin for the operation of their project, will be dewatering the basin by moving water from Cell 2E to Cell 1E, then from Cell 1E to the discharge point at SD026, *without treatment.* However, if they receive permits, acquire the properties, but do not build or operate the project, the treatment/mitigation that Cliffs is now responsible under the Consent Decree would not be required.

MPCA cannot make these determinations (nor should the DNR be relying upon them), as they are expressly prohibited under the federal Clean Water Act. Mercury exceedances in watersheds that are already impaired for mercury may not be simply dismissed without an analysis of whether discharge from tailings basin seeps is causing or contributing to violation of surface water quality standards.[127]

Any conjecture about exceedances of sulfate standards that are based upon the MPCA's proposed rulemaking are no longer applicable. In January 2018, an Administrative Law Judge, with the concurrence of the Chief Judge disapproved the repeal of Minnesota's 10 parts per million (mg/L) wild rice sulfate standard, and disapproved the replacement of the existing standard with an equation based formula.[128] Through a series of analyses and opinions, the ALJ concluded that repeal of Minnesota's existing wild rice sulfate standard would conflict with the Clean Water Act and its implementing regulations.[129]

Regarding the other water quality constituents that are currently covered under the Consent Decree, it is not consistent with the either Clean Water Act or MPCA's claim that their focus is the "protection of surface water quality and existing uses in the area of the Basin," to simply wave away water quality standards compliance requirements solely on the rationale that the agency has made rulemaking (weakening of these standards) a "high priority". The Band and other concerned citizens and environmental groups have in fact provided the agency with input to their triennial review process

[127] 40 C.F.R. §122.44(d)(1)(i)-(iii).
[128] *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers,* OAH 80-9003-34519 Revisor R-4324, Report of the Administrative Law Judge, Jan. 9, 2018, ("ALJ Wild Rice Rule Report") p. 5.
[129] *Id*.

urging them to establish a specific conductance standard to protect aquatic life[130]. There are multiple waterbodies in proximity to the tailings basin that have aquatic life use impairments, with elevated specific conductance determined to be contributing to those impairments.[131]

9. Failure to meet zero-discharge requirements

The PolyMet project would likely also violate the "zero discharge" requirement. A "zero-discharge requirement applies to the process facilities, including tailings impoundment. The zero- discharge standard is described as follows:

> 40 C.F.R. § 440.104(b)(1): Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

PolyMet will violate the zero-discharge standard in two ways. First, tailings seepage not captured by the collection system will violate the standard, regardless of the effect on groundwater quality. PolyMet plans to effectively meet the zero discharge by planning to collect and recycle all tailings water that seeps beneath the facility (Vol. III, § 5.2) even if the collected seepage would be treated and later discharged to surface streams. But, seepage that escapes the tailings seepage collection system will violate the zero-discharge standard because it will not be part of the combined waste stream and will reach the Embarrass River or tributaries. If PolyMet's assumption regarding seepage collection does not manifest, PolyMet will violate its permit. Second, mine dewatering water would violate the standard if dedicated dewatering wells become necessary. As discussed in the NPDES modeling section, there is a substantial chance that the dewatering requirements will exceed the predicted rates. If dewatering needs exceed the predicted rates, and PolyMet requires dedicated dewatering wells, PolyMet will violate the permit. Both of these deficiencies must be addressed before the permit can be issued.

[130] Fond du Lac Comments on MPCA 2017 Triennial Standards Review, sent to Catherine O'Dell, Environmental Analysis and Outcomes, MPCA February 9, 2018.
[131] St. Louis River watershed Stressor Identification Report (2016).

10. Antidegradation

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." 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 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."

If a permittee is seeking compensatory mitigation, then it is required to provide to the MPCA a proposed compensatory mitigation plan. 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." 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. 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 Antidegradation Evaluation and MPCA's subsequent review demonstrate that water quality degradation caused by the proposed Project cannot be avoided, but will be prudently and feasibly 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. The proposed Project will implement the best technology in practice and treatment. Therefore, the MPCA has made a preliminary determination that the Project will satisfy antidegradation standards in Minnesota Rules 7050.0265, 7052.0300, and 7052.0330. (NPDES Fact Sheet)

11. Nondegradation for Groundwater

Minnesota Rules part 7060.0500 identifies a Nondegradation Policy applicable to underground waters of the state.

Because MPCA's review of the Groundwater Nondegradation Evaluation was completed prior to submittal of the October 2017 updated permit application, the review did not fully capture or acknowledge some of the specific updates that were included in the updated application. For example, MPCA's hydrogeological review recommended installation of an additional monitoring well in a particular hydrogeologically-favorable area at the Mine Site with the result that this well location was included in the updated application and draft permit. MPCA also incorporated into the draft permit the hydrogeological review's recommendation on the use of appropriate statistical methods in the review of groundwater monitoring data.

The Nondegradation of Groundwater Evaluation and the MPCA's subsequent review demonstrate that the requirements set forth under Minnesota Rules 7060 for protection of groundwater resources have been satisfied and that the proposed groundwater monitoring included in the NPDES/SDS permit will verify the protection of the groundwater resources. Therefore, the MPCA has made a preliminary determination that the project satisfies the nondegradation standards in Minnesota Rules 7060.

Furthermore, the MPCA has determined that even though its review of the Groundwater Nondegradation Evaluation occurred prior to submittal of the October 2017 updated application, its conclusions and preliminary determination would not be different than had the updated information been available.

12. MPCA record in regulating hard rock mining

Minnesota has repeatedly failed to control water pollution, even when required to do so under the federal Clean Water Act. The MPCA has a long history of delayed and inadequate permits and poor enforcement of limits on mining pollution. In fact, the State is under investigation for failure to comply with the Clean Water Act and failure to control pollution from existing mines. Permits are being administratively continued long past expiration dates, with no new limits imposed regardless of monitoring data or reasonable potential analysis.

This draft permit is a continuation of the status quo, not a responsible example for how the agency intends to regulate new, more environmentally hazardous mining projects and protect high quality waters that sustain ecologically, economically and culturally significant resources.

13. Summary

In summary, the NPDES/SDS permit does not meet the requirements of state law. It does not contain conditions that will ensure that PolyMet will achieve compliance with applicable Minnesota or federal statutes or rules, or with the terms of the permit itself. As the Band describes above, the designs that PolyMet has provided and that are effectively adopted by the draft permit, do not ensure that PolyMet will meet applicable effluent limitation, standards,

and prohibitions for pollutants that will be discharged by the mine and associated facilities. Nor does it provide sufficient monitoring to ensure that PolyMet will continue to meet permit limitations. More modeling must be done, and amendments made to the draft permit conditions, to ensure that PolyMet's operations will not harm human health and the environment. For those reasons, MPCA cannot issue the permit as currently drafted and must take the actions the Band has requested above to make the permit compliant with applicable laws.

Sincerely,

Nancy Schuldt, Water Projects Coordinator