UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

AUG 0 7 2013

E-19J

Timothy Dabney
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Barbara Naramore
Assistant Commissioner
Minnesota Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4040

Tamara Cameron
Chief, Regulatory Branch
U.S. Army Corps of Engineers – St. Paul District
180 5th Street East, Suite 700
St. Paul, Minnesota 55101-1678

Re: Preliminary Supplemental Draft Environmental Impact Statement for the NorthMet Mining Project and Land Exchange, Hoyt Lakes, St. Louis County, Minnesota

Dear Mr. Dabney, Ms. Naramore, and Ms. Cameron:

The United States Environmental Protection Agency (EPA) has reviewed the Preliminary Supplemental Draft Environmental Impact Statement (PSDEIS) for the NorthMet Mining Project and Land Exchange, which was prepared by Environmental Resources Management (ERM), consultant to the U.S. Army Corps of Engineers (USACE), U.S. Forest Service (USFS), and the Minnesota Department of Natural Resources (MDNR). These agencies are collectively referred to as the "co-lead agencies." EPA's review was conducted pursuant to our authorities under the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act, Section 404 of the Clean Water Act (CWA), and our June 27, 2011 agreement to participate as a cooperating agency.

The PSDEIS, along with the additional information provided to EPA during its review, reflects significant progress in designing and clearly documenting the project. EPA appreciates the collaborative and constructive discussions we have had with the co-lead agencies since receiving the PSDEIS. In these discussions, we have covered all of the areas where EPA had

questions or comments. You have asked that we provide written comments and recommendations confirming our previous discussions to bring any remaining issues to closure. Enclosed are a number of recommendations to assist the co-lead agencies in preparing a supplemental draft EIS (SDEIS) for public review and comment that will clearly and adequately describe the project.

EPA is committed to working with the co-lead and cooperating agencies during development of the SDEIS. Please feel free to contact me at 312-353-8894 or Kenneth Westlake of my staff at 312-886-2910 to schedule this discussion.

Sincerely,

Alan Walts
Director, Office of Enforcement and Compliance Assurance

Encl: NorthMet Project PSDEIS Detailed Comments

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INDEX
EPA DETAILED COMMENTS
NORTHMET PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT

EPA DETAILED COMMENTS
NORTHMET PROJECT – PRELIMINARY SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT

I. Water Quality

A. Mine Site

Ground water

Figure 5.2.2-13: A combined sample mean is used for water quality samples from surficial wells that terminate at bedrock, and for wells that are strictly 10 meters deep. Because of different chemical interactions at and near the C-R soil horizon contact (e.g. bedrock-soil contact zone), water quality data from those wells will vary from wells that encounter surficial soils no deeper than the B soil horizon (e.g. 10-meter-deep wells).

> **Recommendation:** Documentation of sample results in the SDEIS should not merge sample data from both well types into a single mean for each chemical parameter. Each type of well should exhibit a separate mean value for each chemical parameter.

Waste rock management

Section 5.2.14: While the evaluation of the sulfur content of overburden and waste rock appears consistent with a state-of-the-art approach, it may be difficult to clearly distinguish each category of waste rock (categories 1,2,3, and 4) during open pit operations.

Section 3.3.3: The assumption that Category 1 waste rock can be classified as non-acid generating rock with no potential to leach metals is overly broad. Such rock may have a low potential to leach metals, but all rock leaches metals to some degree over time.

> **Recommendation**: The SDEIS should identify life-of-mine waste rock and tailings metal mobility testing and monitoring, as recommended and further explained in the global acid rock drainage guide, as a project component that will be addressed in permitting. EPA and the Minnesota Pollution Control Agency (MPCA) have agreed that the details of such testing and monitoring should be addressed in permitting.

Wastewater and stormwater management

5.2.2-85: The PSDEIS is unclear whether the East/West equalization basins will be designed to assure that they always have a minimum of two feet of freeboard.

> **Recommendation:** The SDEIS should explain if the east and west equalization basins will always contain a minimum of two feet of freeboard.

Bedrock fractures in the Duluth Complex

Page 5.2.2-27: Fractures are known to commonly occur in the bedrock of the Duluth Complex. (*See* Foster, M.E. (1986). "Fracture cleavage" in the Duluth Complex, northeast Minnesota, *Geological Society of America Bulletin*, 97:1, 85-96.)

Recommendation: The SDEIS should acknowledge the potential occurrence of fractures, and note that appropriate engineering controls will be put into place if fractures are encountered during active mining.

Spilled Ore

Page 5.2.2-86: The PSDEIS notes that a spilled ore plan with monitoring and mitigation measures will be developed.

Recommendation: When developed, the spilled ore plan should include measures to mitigate fugitive dust. To the extent that these measures are already known, they should be briefly identified in the SDEIS.

B. Plant Site

Surface water

Page 5.2.2-40, 1st paragraph: The text cites U.S. Geological Survey (USGS) gauging station 04017000 as being located just downstream of PM-12.3.

Recommendation: The SDEIS should include the location of USGS gauging station 04017000 in Figure 5.2.2-6 (Page 5.2.2-37).

Ground water

Page 5.2.2-39, 1st paragraph states that "the estimated total discharge rate of flowpath groundwater into the Embarrass River is 292 gpm [gallons per minute]." However, the discharge rate to tributaries is not included.

Recommendation: The SDEIS should state the groundwater discharge rate to tributaries of the Embarrass River.

Figure 5.2.2-6, and Figure 5.2.2-11: These figures do not provide the applicable units for groundwater elevation contours. Additionally, contour data are presented to the hundredths digit. Providing contour data to this many significant figures implies a knowledge and level of precision of the groundwater elevation system that is not likely accurate. The level of precision also makes it difficult to quickly evaluate contour intervals.

Recommendation: The SDEIS should provide groundwater contours for the above-named figures. The contour intervals depicted should be revised to reflect an appropriate

level of understanding of the groundwater elevation system and should include a unit of measurement.

C. Water Quality Standards

Pages 5.2.2-81 through 5.2.2-100 describe how solute contaminated water moves from the Mine Site via groundwater to the Partridge River. Mine Site sources of wastewater with elevated concentrations of solutes due to mine activities include the West Pit (which eventually includes the East Pit overflow), Category 1 Stockpile, Category 2/3 Stockpile, Overburden Storage and Laydown Area, Ore Surge Pile, reverse osmosis (RO) concentrate from Plant Site wastewater treatment plant (WWTP), wastewater equalization basins, and seepage through liners. Taken together, Tables 5.2.2-21 and 22 suggest that much lower concentrations reach the Partridge River than leave the Mine Site. However, the PSDEIS does not identify how this reduction in concentration occurs.

Recommendation: For pollutants that leave the mine property via groundwater at concentrations greater than those projected to enter the Partridge River, the SDEIS should provide a more detailed explanation of the processes responsible for the reduction in concentration; or identify the relevant supporting technical document containing this explanation (and ensure that this document is available to the public during the SDEIS comment period). This explanation does not need to be at the level of detail that will be required for National Pollutant Discharge Elimination System (NPDES) permitting in order to determine water quality-based effluent limits and establish control and mitigation measures that ensure attainment of Minnesota's water quality standards in the Partridge River and other downstream surface. However, it should be sufficiently detailed for the reader to understand what processes are responsible for the reduction in concentration.

The PSDEIS concludes that concentrations of solutes reaching the Partridge River will be acceptable using groundwater evaluation criteria. However, surface water evaluation criteria apply when the contaminated groundwater enters the Partridge River and should be considered as well. In some cases the surface water criteria are more stringent than the groundwater criteria (e.g., sulfate [10 mg/L vs. 250], arsenic [53 ug/L but 2 µg/L downstream in Colby Lake vs. 10], copper [9.3 µg/L vs. 1000 or 1300], lead [3.2 µg/L vs. 15], mercury [1.3 ng/L vs. 2000], silver [1.0 µg/L vs. 100], and zinc [120 µg/L vs. 5000]). Also, in some cases surface water criteria exist where there are no groundwater criteria (e.g., hardness, cobalt and specific conductance). The surface water criteria would be used for any NPDES permitting of groundwater discharges that are hydrologically connected to surface waters.

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.

Page 5.2.2-5: "The evaluation criteria for these three solutes [beryllium, manganese, and thallium], where background levels naturally exceeded the water quality standard, were developed in accordance with USEPA guidance ...."

Recommendation: Include a specific reference to the EPA guidance used to develop these evaluation criteria.

Table 5.5.5-1: The computations provided in this table assume that the concentrations of beryllium, manganese, and thallium solutes are naturally occurring. However, the PSDEIS does not support this assumption with evidence that these concentrations are truly natural and not anthropogenic. Natural background must be based on conditions independent of anthropogenic impacts. Computing a 95th percentile value from existing monitoring data is not adequate for this purpose, since it does not discount anthropogenic sources from past and current uses of this area. Any site-specific criteria based on natural background will need to be established during NPDES permitting.

Recommendation: Evaluation criteria in the SDEIS should be set at Minnesota's water quality standards (WQS) unless an evidence-based analysis shows that levels are due solely to natural background and not anthropogenic sources. The SDEIS should also recognize that any site-specific water quality criteria based on natural background will need to be developed, adopted by Minnesota, and approved by EPA before being used in the context of NPDES permitting.

Page 6-56, Section 6.2.3.7.4: The PSDEIS concludes that no cumulative effects on aquatic resources are expected because the NorthMet Project is not predicted to result in any short- or long-term exceedances of surface water evaluation criteria in the Partridge River, Colby Lake, and the Embarrass River (as discussed in Section 5.2.6.2). The GoldSim does predict that the proposed project will increase levels of several contaminants above the current baseline or "no action" conditions (Table 5.5.5-29, e.g., antimony, arsenic, cadmium, cobalt, copper, lead, and nickel). Chapter 6 does not consider how the increased contaminant concentrations caused by the NorthMet Project, combined with all other past, present, and reasonably foreseeable future actions as tabulated in Chapter 6, may cumulatively affect aquatic resources. The lower projected stream flows could also potentially affect this analysis.

Recommendation: The SDEIS should acknowledge and consider how the modeled impacts of the NorthMet Project, including projected increased contaminant concentrations above baseline or "no action" levels, in combination with other past, present and reasonably foreseeable actions, may cumulatively impact aquatic resources. Consider also including the concomitant effect of projected lower stream flows in this analysis. EPA and the co-leads have agreed to further discuss this recommendation before issuance of the SDEIS.

D. National Pollutant Discharge Elimination System

As we have discussed, the co-leads will include a more complete description of NPDES requirements in the SDEIS, starting from their "Draft Outline for Additional Information on Permitting in SDEIS." This section of EPA's comments discusses some of those requirements in more detail, and recommends approaches to addressing them in the SDEIS. EPA will review NPDES permit applications, draft permits, and supplemental information in accordance with our Memorandum of Agreement with MPCA. At that time, EPA and MPCA will determine compliance with water quality standards.

NPDES permitting requirements include compliance with Minnesota's nondegradation provisions for surface waters (Minn. R.§§ 7050.0180 and 7052.0300) and groundwater (Minn. R. § 7060.0500). The co-lead agencies and MPCA will address nondegradation during the permitting phase of the project. However, some further discussion of nondegradation in the SDEIS is appropriate since additional mitigation may be needed to develop a successful nondegradation demonstration and permit, and since the proposed project is projected to increase concentrations of several contaminants above existing levels. As we have discussed, the co-leads should coordinate closely with the MPCA to ensure compliance with nondegradation requirements.

> **Recommendation**: The SDEIS should discuss the need for compliance with Minnesota's nondegradation water quality standards provisions; and should note that compliance (including any necessary additional mitigation) will be addressed during NPDES permitting.

The co-lead agencies are using a 90th percentile (P90) projection to evaluate whether or not evaluation criteria are being met. As we have discussed, this is not equivalent to how water quality based effluent limits (WQBELs) will be developed for NPDES permitting. Rather, appropriate WQBELs must be derived based on water quality standards and implemented in the permit. Discharges will be evaluated during the NDPES permitting stage and WQBELs applied according to 40 CFR 122.44(d). The procedures for conducting a reasonable potential analysis and calculating WQBELs are found at 40 CFR 132 and Minn. R. § 7052.

> **Recommendation:** The SDEIS should note these NPDES permitting requirements and should be clear that the evaluation criteria used are not equivalent to WQBELs.

Page 3-71: *"As a requirement of the NPDES stormwater permit and/or reclamation plan for the facility, discharges from these outlet control structures would be monitored as necessary to ensure that runoff to the Partridge River meets water quality discharge limits."* This appears to be describing a discharge that is subject to the federal effluent limitations guidelines.

> **Recommendation:** This portion of the SDEIS should describe how the federal effluent limitations guidelines found at 40 CFR 440 will apply to this project, and should reference portions of the SDEIS that describe how stormwater management is designed

into the project. In addition, the SDEIS should discuss how the project plans to address any stormwater associated with industrial activity (see 40 CFR 122.26(b)(14)).

The PSDEIS discusses the existing permit applicable to the Plant Site, but does not describe whether an NPDES permit would be required to ensure that discharges from the Mine Site which impact surface waters will be in compliance with the CWA.

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 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.

Recommendation: The SDEIS text should be revised to reflect the understanding that one or more NPDES permit(s) will be required for the Mine Site in order for this project to comply with the CWA, and to discuss how the project is designed to comply with NPDES permits and applicable water quality based effluent limits. The document should also indicate how parameters of concern will be identified for the purposes of NPDES permitting.

Although Yelp Creek is in close proximity to the Category 1 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.

Additional information provided to EPA on July 1indicates that MPCA plans to transfer the NPDES permits for the tailings basin (MN0042536, MN0054089) from Cliffs Erie to PolyMet. Since PolyMet proposes significant changes to the tailings basin, significant changes would have to be made to the existing permits. Based on the information provided with the PSDEIS, the character of the wastewater discharge will be altered from its current composition because the tailings will be from a different type of mining and processing operation. If this occurs, different effluent limitations guidelines would apply. Physical attributes of the basin will also be altered to include the hydrometallurgical residue disposal facility and the additional pumping and recirculation system which will impact site hydrology over existing conditions.

Recommendation: The SDEIS should include a discussion outlining the permitting actions that will be taken to address proposed changes to the tailings basin.

In the following sections, the PSDEIS draws conclusions about the existing discharges at the Plant Site in relation to surface water quality standards. Additional relevant data can be found in discharge monitoring reports, and in the documentation provided by Cliffs Erie to the MPCA in support of its application for NPDES permit reissuance. We expect that MPCA will evaluate this information relative to water quality standards during the permit reissuance process as part of its analysis to determine which pollutants in the discharge have a reasonable potential to cause or contribute to violation of a water quality standard (the "reasonable potential analysis").

Page 4.2.2-64, *"Water quality monitoring from 2006 to 2008 as part of the MPCA-issued NPDES Permit MN0042536 (SD026), as shown in Figure 4.2.2-9, shows that Seeps 32 and 33 were generally consistent with surface water standards with the exception of hardness and Total Dissolved Solids (TDS) (NTS 2009). Table 4.2.2-20 summarizes the surface water quality monitoring data for Station SD026."*

Page 4.2.2-96-97: *"Several of these seeps have been, or are being monitored for water quality pursuant to NPDES/SDS permit MN0054089 (Table 4.2.2-34). The monitoring data indicate that these seeps generally met surface water quality standards other than for mercury at several stations, although the mercury concentrations were well below those found in local precipitation (approximately 10 ng/L)."*

Recommendation: The SDEIS should reflect that a reasonable potential analysis will be conducted as part of NPDES permitting.

EPA expects downstream water quality standards to be considered and protected through the NPDES permitting process. While discharges at the Mine Site and Plant Site may be to wetlands that are connected to streams and rivers, as well as directly to streams and rivers, all

applicable water quality standards need to be considered, including Minnesota's wetlands standards. In addition, the PSDEIS is unclear as to how certain specific standards are being considered:

Mercury: The PSDEIS refers to 1.3 ng/L as the relevant numeric standard for mercury. However, the PSDEIS notes that the St. Louis River downstream is not meeting the 0.77 ng/L standard that applies at that segment of the River.

Sulfate: The water quality standard for the protection of wild rice is applicable in the Partridge River. There is an associated numeric standard for sulfate at 10 mg/L. The PSDEIS does not address this standard, presumably because the wild rice is located downstream.

Recommendation: The SDEIS should discuss how downstream water quality standards (including wetlands standards, standards applicable in the rivers and streams immediately adjacent to the sites, and the mercury and sulfate standards) will be considered and protected through NPDES permitting.

Water from Colby Lake will be withdrawn via an existing pumping station and pipeline to augment flows to streams and wetlands outside of the tailings basin containment system. If water withdrawn from Colby Lake will be subject to an intervening industrial, municipal, or commercial use prior to its discharge to surface waters, it should be evaluated during the permitting process.

Recommendation: The SDEIS should acknowledge that MPCA will determine during permitting how the project will comply with the Water Transfer Rule. (See http://www.epa.gov/npdes/regulations/water_transfers_finalrule.pdf.)

The PSDEIS does not appear to discuss biological or habitat conditions of the immediate receiving waters, other than noting that some of them are not on the CWA §303(d) list. 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.

II. Wetlands

Wetland compensatory mitigation

Page ES-20 states that a final list of mitigation measures will be included in the Record of Decision.

> **Recommendation:** To the extent they are known, the SDEIS should identify wetland mitigation measures to be implemented as part of the proposed project. Where it is premature to identify specific measures to be implemented, a brief discussion describing how those additional mitigation measures will be developed during permitting would strengthen the SDEIS.

Page ES-20: The executive summary states: "The determination of final mitigation credits suitable for USACE, MPCA, and MDNR purposes that would be acceptable for offsetting effects due to the NorthMet Project Proposed Action would be determined by the agencies during wetland permitting." This document lacks the detail needed to review all wetland permitting documents, and the EPA wetlands program will likely have additional comments on the mitigation and monitoring plans during the CWA Section 404 Permit process. For example, the Section 404 permit should include baseline data and wetland evaluation points in its monitoring protocol. To promote habitat connectivity, EPA recommends that the Section 404 permit process consider use of wildlife crossings, such as culverts, under the rail line and Dunka Pit Road, as part of the mitigation package. EPA looks forward to reviewing the CWA Section 404 Permit Application, including best management practices for managing invasive species, monitoring and assessment protocols for indirect impacts (as described on Page ES-31), and wetland and stream compensatory mitigation during the CWA Section 404 Permit Review.

> **Recommendation:** The SDEIS should note that final mitigation credits to offsetting effects due to the proposed action will be addressed in the CWA 404 permit.

Section 5.2.3: The U.S. Army Corps of Engineers May 29, 2013 Draft Memorandum on *The Application of the Federal Mitigation Rule and St. Paul District Policy Guidance on Compensatory Mitigation* describes mitigation ratios that EPA recommended to USACE for temporal loss of wetland functions and compensatory mitigation outside the Great Lakes Basin for impacts within the Basin.

> **Recommendation:** The SDEIS should acknowledge the need for higher mitigation ratios based on the temporal loss of wetland functions and for compensatory mitigation outside of the Lake Superior watershed.

Page 5.2.3-5 states that "Additional compensation may be required if determined necessary based on monitoring results." EPA believes compensatory mitigation will be necessary for indirect impacts, which makes the impact monitoring and assessment and indirect impact compensatory mitigation protocols vital for making sure that aquatic resource functions are not lost on site and within the watersheds. This will be addressed during CWA Section 404 permitting.

Wetland and stream monitoring

Page 4.2.2-44 describes the Upper Partridge River's geomorphology, which is important baseline data to determine potential impacts during monitoring. However, similar data is not included for tributary streams to the Partridge River (e.g. upper Wetlegs Creek and the West Pit Overflow stream). Geomorphic and hydrologic baseline information for these smaller streams will be necessary to monitor potential impacts to small streams near the Mine Site.

> **Recommendation:** We understand that there is ongoing collection of baseline monitoring data. Available stream baseline data for all tributaries of the Upper Partridge River should be provided in the SDEIS.

Page 4.2.2-54: The West Pit Overflow stream (formerly known as Unnamed Creek) is not mentioned, and no hydrologic modeling or baseline survey was included for the West Pit Overflow stream, as well as Wetlegs, Longnose, and Wyman Creeks.

> **Recommendation:** We understand that there is ongoing collection of baseline monitoring data. Available baseline data for those streams should be included in the SDEIS.

Surface water/ground water and wetland interaction: Mine Site

Page 5.2.2-2 shows the MODFLOW model for river reaches. The West Pit Overflow stream and upper reaches of Wetlegs Creek are not included in this evaluation.

> **Recommendation:** Baseline data and wetland evaluation points for the West Pit Overflow stream and the upper reaches of Wetlegs Creek should be included in the monitoring protocol, or the rationale for not including these waters should be stated in the SDEIS.

Section 5.2.3, Figures 5.2.3.5; 5.2.3.6; 5.2.3.7; 5.2.3.8: Depiction of the analog zone includes a number of surface waters, such as Yelp Creek, the Partridge River, Wetlegs Creek, South Branch of Partridge, Stubble Creek, and the West Pit Outflow. It is unclear how these bodies of water specifically will be affected by the groundwater drawdown and later seepage. The PSDEIS states that only wetlands within the 1000-ft zone are "highly likely" to be affected, which is where many of the streams mentioned reside.

> **Recommendation:** The SDEIS should describe the impacts to aquatic habitat, hydrology, and water quality, etc., which will occur to the above-named streams as a result of groundwater drawdown from pit dewatering, and later groundwater seepage.

Indirect wetland impacts

Figure 5.2.3-4: This figure underestimates indirect impacts to wetlands such as fragmentation. A majority of wetlands within the Mine Site will be fragmented and subdivided by mine features, and although they may still maintain wetland condition, they will have lost most wildlife functions and the size and quality of contiguous wetlands will be decreased. The

co-lead agencies should identify a majority of wetlands within the Mine Site boundary as being indirectly impacted by mine features.

> **Recommendation:** The majority of wetlands within the Mine Site boundary should be considered indirectly impacted by mine features. The SDEIS should also either describe compensatory mitigation for these lost functions, or describe how mitigation will be developed during permitting.

Page 5.2.3-21: The PSDEIS acknowledges uncertainty regarding aquifer drawdown and its impact on wetlands. Because of the heterogeneous geology at the Mine Site, the wetland and stream impact assessment, monitoring, and compensatory mitigation protocols are vital. Much of the wetland assessment and mitigation protocol will be developed during the CWA Section 404 permitting, and EPA looks forward to evaluating those plans. We will continue to collaborate with USACE regarding continued refinement of indirect wetland impact boundaries. We are committed to reviewing and providing feedback on wetland assessment and mitigation protocol during the CWA Section 404 permitting process.

Page 5.2.3-51: "The deposition modeling results for dust, metals, and sulfur would likely not have an adverse effect on wetlands; however, the modeling only indicated those areas that had deposition rates greater than 100 percent of background deposition."

> **Recommendation:** Describe why the threshold increase in deposition for determining adverse effects is 100 percent of background deposition, and why a lesser percentage of background deposition would pose no adverse effects.

Page 5.2.4-18: The PSDEIS anticipates the use of organic amendments (peat) to the top one foot of the tailings basin to improve soil and water quality and promote the development of shoreline and near-shoreline vegetation. EPA notes that bog soils in northern Minnesota, such as peat, often contain mercury. Disturbance of such soils can lead to mobilization of mercury via air and water.[1] EPA understands that the MDNR's permit to mine will include an overburden management plan, including all Mine Site overburden reuse, and that MDNR is aware of the potential for mercury mobilization.

> **Recommendation:** The SDEIS should indicate that the permit to mine will include an overburden management plan that will address all Mine Site overburden reuse, including soil chemistry and the potential for mercury mobilization.

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[1] Source: Kolka, R.K., Grigal, D.F., Nater, E.A., & Verry, E.S. (2001). Hydrologic cycling of mercury and organic carbon in a forested upland-bog watershed. *Soil Science Society of America*, 65(3), 897-905.

III. Air Quality

Asbestos-like minerals

Page 5.2.7-49: The PSDEIS states: "Thus, there remains an uncertain level of potential health risk from airborne amphibole fibers for the NorthMet Project Proposed Action." However, it does not identify possible mitigation measures in response to this potential risk. The federal Mine Safety and Health Administration has a regulatory scheme to identify such risks before and during project operation, and authority to mitigate risks.

> **Recommendation:** The SDEIS should explain MDNR's blasting regulations and MPCA's expectations that the air permit for the tailings basin will include a plan for fugitive dust. The SDEIS should also indicate that the project will be required to comply with applicable laws and regulations implemented by the Federal Mine Safety and Health Administration, including regulations that implement health standards for asbestos exposure.

Anti-idle policy

Section 5.2.7.4: The PSDEIS acknowledges that project emissions of nitrous oxides (NOx) and sulfur dioxide (SO_2) are primarily attributed to mobile sources (e.g., diesel trucks, locomotives, and mining equipment). These mobile sources also contribute particulate matter. These air emissions can be reduced by implementing a voluntary anti-idle policy for mobile sources. Reduced emissions via an anti-idle policy will benefit miners and vehicle operators.

> **Recommendation:** We recommend that PolyMet consider a voluntary anti-idle policy for all internal combustion vehicles and equipment used during construction, operation, and closure phases of the proposed project; and that the SDEIS acknowledge this consideration.

IV. Financial Assurance

In 3.2.2.4.1 through 3.2.2.4.3, the financial assurance requirements, coverage, and process under state law is adequately described at this stage of the NEPA/MEPA process. This discussion of financial assurance is generally consistent with the agreement that EPA and the co-leads reached following our review of the DRAFT Chapter 3 Financial Assurance language in the PSDEIS (dated March 4, 2013). EPA appreciates inclusion of this financial assurance discussion, including PolyMet's preliminary range of estimated financial assurance costs as shown in Table 3.2-15.

On Page 3.2.2.4.1, the PSDEIS is not clear what financial assurance amount should be set for post-closure, when the wastewater treatment facility (WWTF will need to operate with reverse osmosis. If perpetual treatment is in fact needed, the SDEIS should state when this financial assurance mechanism would be put into place.

Recommendation: The SDEIS should discuss when financial assurance will be determined if perpetual treatment is needed. We recommend that, if additional refinements of the PSDEIS financial assurance estimates are available at the time of future versions of the EIS, those refinements be included.

In 3.2.2.4, the PSDEIS states, "Compensatory wetland mitigation is expected to be constructed and approved in advance of wetland effects and therefore not require financial assurance." EPA expects that the Clean Water Act Section 404 permit will include performance measures and monitoring requirements for successful establishment of wetland mitigation sites, including vegetation/trees. The process of establishing successful mitigation is expected to take many years, and may extend beyond the time of initial wetlands impacts, especially for indirect wetland impacts, which are currently not well known. The CWA Section 404 Mitigation Rule requires financial assurance for construction and long-term monitoring and management to compel successful mitigation performance before USACE can release the permittee from all performance and monitoring requirements.

Recommendation: USACE should provide to the applicant its expectations for financial assurance for successful wetland mitigation performance, so that wetland financial assurance is addressed in the draft CWA Section 404 permit application. Financial assurance should also be provided for monitoring and compensatory mitigation for indirect impacts.

V. Other Topics

Impacts to Tribal Resources

Section 4.2.9 discusses cultural resources, including properties of significance to Tribes (referred to as Traditional Cultural Properties).

Recommendation: The co-lead agencies should work closely with the Chippewa Tribe to provide access to Traditional Cultural Properties, and should discuss these measures in the SDEIS.

Noise and vibration impacts

Page 5.2.8-30: The PSDEIS explains that "people that recreate within an 0.84-mile radius of the Mine Site and 0.47-mile radius of the Plant Site could experience noise levels that approach or exceeded the Minnesota daytime noise standards." The PSDEIS did not include a discussion of mitigation measures related to noise impacts (Section 5.2.8.2.4). However, the co-lead agencies have informed EPA that the SDEIS will include mitigation measures for the Superior National Forest receptors as described above. We understand Section 5.2.8.2.4 will be included in the SDEIS, and will discuss proposed mitigation for noise impacts.

Pages 3-52/53: Blasting at the Mine Site will cause ground vibrations in the vicinity of the NorthMet Site, including on public and other private lands.

> **Recommendation:** The SDEIS should discuss what physical impacts may occur to infrastructure at the Mine and Plant Sites, including impacts to pipelines, liners, and containment systems.

EPA's role as a cooperating agency

Pages 1-1 and 4.2.9-1, 1st paragraph: This language does not accurately reflect EPA's role. EPA has not participated in production of any components of the PSDEIS or the NorthMet Project. As stated in the EPA, MDNR, USACE, and USFS Memorandum of Understanding (MOU) (6/27/2011):

> "U.S. EPA will not be signatory to the EIS nor be responsible for preparing any portion of the EIS or related technical reports. However, U.S. EPA will participate in team workgroups, and coordinate with other agencies as outlined in the Coordination and Communication Plan developed by the co-lead agencies" (MOU, p. 3).

As a cooperating agency, EPA has provided an independent review of the NorthMet Project under our authorities, and EPA has interacted in this capacity with the co-lead agencies between 2005 and present. However, the co-lead agencies have independently determined what EPA positions, comments and/or suggestions are to be incorporated into the EIS.

> **Recommendation:** We recommend paragraph 1 on both pages be changed to read as follows: "MDNR, USACE, and USFS, have prepared a joint state-federal SDEIS for the proposed NorthMet Project Proposed Action and Land Exchange Proposed Action. USEPA, the Fond du Lac Band of Lake Superior Chippewa, the Bois Forte Band of Chippewa, and the Grand Portage Band of Lake Superior Chippewa (herein referred to as the Bands) participated as cooperating agencies based on regulatory authority and/or subject matter expertise. Cooperating agencies have not participated in production or endorsement of any components of the EIS or the NorthMet Project."

GoldSim

The PSDEIS does not clearly identify when the term "GoldSim" is being used to reference either the platform or the model. A platform is an engine that is used to build a model, while a model is a simulation of a process, and is used in conjunction with a platform.

> **Recommendation:** The SDEIS should clearly identify when "GoldSim" is being used to reference either the platform or the model.

Public availability of documents and clarity of SDEIS for public review

Technical documents relating to the NorthMet Project, such as finalized data packages and management plans, should be made available to the general public during the public comment period for the SDEIS.

Recommendation: The SDEIS should be provided on one of the co-lead agencies' website. Also included on the website should be finalized technical documents, such as those noted above. In addition, CD/DVD copies of the SDEIS and technical documents should be placed at all public libraries within fifty miles of the NorthMet site.

Recommendation: In order to improve the readability of the document, the SDEIS should cite and cross-reference all discussions, especially where conclusions are reached or where the rationale for these conclusions relies on information provided elsewhere in the document.

Material disposal during reclamation

Page 3-127, Special Material Disposal: The PSDEIS does not provide sufficient detail regarding management and/or disposal of special materials during reclamation activities.

Recommendation: The SDEIS should identify federal and state regulations that govern how wastes are properly managed and/or disposed of, and explain how the project will adhere to those regulations.