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

NOV 03 2016

REPLY TO THE ATTENTION OF:
WN-16J

Ms. Ann Foss
Metallic Mining Sector Director
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194

Re: NPDES Permit Application for Polymet Mining Corporation's Northmet Mine

Dear Ms. Foss:

On July 11, 2016, Polymet Mining Corporation (Polymet) submitted an application for a National Pollutant Discharge Elimination System and State Disposal System (NPDES/SDS) permit to the Minnesota Pollution Control Agency (MPCA) for discharges related to the proposed Northmet project ("Application"). The U.S. Environmental Protection Agency obtained the Application via the MPCA's website. On August 2, 2016 MPCA informed Polymet that the application is complete for processing but also indicated that MPCA may have additional information requests as MPCA further processes the application. EPA appreciates the significant effort that went into MPCA's review of this application, and we hope you find this letter useful as you continue to review and process the application materials submitted by Polymet.

As you know, Section II of The Memorandum of Agreement (MOA) between MPCA and EPA describes the process by which EPA reviews NPDES permit applications that have been submitted to the MPCA. The MOA states that:

> If the EPA determines that the NPDES application form is not complete the deficiencies shall be identified by letter to the Director. No NPDES application shall be processed by the Agency until the deficiencies are corrected and it has been advised in writing by the EPA that the NPDES application form is complete. *MOA, Part. II, Section 124.23 Transmission of Data to Regional Administrator, Paragraph 1.*

Consistent with the MOA, EPA has conducted a focused review of the application materials for that portion related to the NPDES coverage sought for the proposed Northmet project, specifically the information submitted on and referenced in the EPA Form 3510-2D (Rev.8-90) for new industrial discharges. The enclosure to this letter describes the deficiencies[1] EPA has found regarding the application materials and identifies additional concerns raised by the application materials, including:

[1] We use the term "deficiencies" because that is the term used in the MOA. We interpret "deficiencies" to refer to omissions, inconsistencies, mistakes, and other circumstances where we believe the information provided by the applicant is not responsive to the directions given on the application form. As used in the MOA, the term does not refer to any deficiencies in MPCA's application review process.

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Recycled Paper (100% Post-Consumer)

- Antidegradation requirements, and
- Federal effluent limitations guidelines as they pertain to the proposed Northmet project.

In addition, EPA notes that although: 1) the Final Environmental Impact Statement (FEIS) for the Northmet project details discharges to surface waters predicted to occur at the mine site[2]; and 2) the permit application contains numerous references to the FEIS[3], the applicant specifically does not request NPDES permit coverage for these discharges[4].

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 issues 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.

EPA's position as explained above is consistent with EPA's past interpretation that the CWA applies to discharges of pollutants from a point source to waters of the United States, including those made through a ground water hydrologic connection.[5] The CWA defines point sources as follows:

> The term 'point source' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture. *33 U.S.C 1362(14)*

The need for an NPDES permit is highly dependent on the facts surrounding each situation. 66 *Fed. Reg.* at 3015; 63 *Fed. Reg.* at 7881. As EPA has explained:

> The determination of whether a particular discharge to surface waters via ground water which has a direct hydrologic connection is a discharge which is prohibited without an NPDES permit is a factual inquiry, like all point source determinations. The time and distance by which a point source discharge is connected to surface waters via hydrologically connected [ground] waters will be affected by many site specific factors, such as geology, flow, and slope. . . 66 *Fed. Reg.* at 3017.

Finally, we emphasize that it is important that the content of the application be fully documented and that the record before the permitting Agency be complete and transparent. As MPCA continues to receive supplemental information from the applicant (including, any materials provided by the

---

[2] For example, Page 5-35, Figure 5.2.2-7, Table 5.2.2-8, of the FEIS.

[3] Including references to the project description, modeling results, monitoring data, effluent, ambient and downstream water quality predictions, and including predicted point source discharges to surface waters from the mine site including Figure 5.2.2-7 of the FEIS.

[4] Application, Vol. 1, Chap. 2.0 states that, "The Mine Site will not discharge mine water or process water to surface waters from a point source; therefore, no NPDES permit is required and only SDS coverage is requested."

[5] See, Proposed National Pollutant Discharge Elimination System Regulations for Concentrated Animal Feeding Operations, 66 *Fed. Reg.* 2960, 3015 (Jan. 12, 2001); NPDES General Permits for Storm Water Discharges from Construction Activities, 63 *Fed. Reg.* 7,858, 7,881 (Feb. 17. 1998).

applicant to MPCA after July 11), we strongly recommend that this information be added to the permitting record and be made available to the public and to EPA in a timely manner.

Again, we appreciate MPCA's efforts in reviewing the Polymet application and we look forward to working with you to resolve the issues identified in this review as MPCA moves forward to draft the NPDES permit for this proposed facility. We will conduct a formal review of any draft permit that MPCA proposes to issue consistent with our MOA. Please contact me or Krista McKim of my staff at (312) 353-8270 or mckim.krista@epa.gov with any technical questions. For legal questions please contact Barbara Wester of the Office of Regional Council at (312) 353-8514 or wester.barbara@epa.gov.

Sincerely

Kevin M. Pierard, Chief
NPDES Programs Branch

Enclosure

**U.S. EPA's Review of the Polymet – Northmet NPDES permit application to MPCA**

This enclosure presents issues identified in EPA's October 2016 focused review of the Northmet NPDES/SDS permit application. EPA looks forward to working with MPCA to obtain additional information and/or clarification to fully address these issues prior to MPCA's proposal of a draft permit for the project, consistent with the MOA.

**Deficiencies Found EPA's Review of Form 2D**

The deficiencies[1] identified below are organized by referencing the specific Item number or Part in "EPA Form 3510-2D (Rev. 8-90)." The Applicant submitted this form as part of its application. Unless otherwise stated, when referring to the application instructions, EPA is referring to the specific instructions for each Item or Part identified in the above-referenced form. The information requested through this form is based on the federal requirements found in 40 C.F.R. Part 122.

**Item I.** The applicant has provided locational information for three outfalls, SD002, SD003 and SD004. Latitude and longitude coordinates are provided for each. However, for SD003, the applicant has indicated that the "coordinates represent the average of six surface water discharge outfalls". This is not an appropriate manner for describing the outfall locations. The application should describe each outfall and its actual location. In addition, when the application is revised to include all six proposed discharge locations, please be sure to name the immediate receiving water for each outfall. In some cases, the immediate receiving water may be wetlands.

In addition, we noticed that the application materials contain conflicting or inconsistent information in some places. For example, the locations given for SD002, SD003 and SD004 elsewhere in Volume I are inconsistent with the information on the Federal form. We did not attempt to identify every instance where the applicant provided locational information for the outfalls but the applicant should ensure correct information regarding the outfall locations throughout the application.

It is important to resolve this issue with the applicant as incorrect or inconsistent locational information could result in (1) confusion for regulators and the public regarding where discharges will occur; (2) failure to identify appropriate water quality standards for the receiving waters; and (3) inability to enforce discharge limits in a final permit.

**Item III-A.** The application instructions require the applicant to list the average flow contributed by each outfall. For SD003 2,400 gallons per minute [gpm] is given. In providing information regarding each specific outfall location, the applicant should update this section to include an estimated average flow rate for each outfall. At this time, it is unclear if 2,400 is meant as an average flow for the 6 outfalls or a total. The applicant should provide any needed recalculations at this time as well.

It is important to provide detailed flow information because it is needed to ensure that the permit includes limits necessary to meet applicable water quality standards. Additionally, this information is needed to provide an estimate, along with the expected pollutant concentrations, of pollutant loading to

[1] We use the term "deficiencies" because that is the term used in the MOA. We interpret "deficiencies" to refer to omissions, inconsistencies, mistakes, and other circumstances where the information provided by the applicant is not responsive to the directions given on the application form. As used in the MOA, the term does not refer to any deficiencies in MPCA's application review process.

the receiving waters, and to inform decisions the permitting authority needs to make regarding implementation of federal regulations for new source performance standards.

**Item III-B.** The application instructions require a line drawing

> … depicting the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

For this requirement, the applicant referenced "Large Figures" 2 and 3 in Volume III of the application as the response to this item. We believe the information provided in the applicant's line drawings as depicted in these two figures is incomplete in the following respects:

- Source of water was not provided.
- Each operation contributing wastewater was not provided or identified.
- Estimation of flow – The application depicts "Average P90 Flows". However, the applicant should clarify whether this represents the average flow rate that is expected.
- Flow diagrams do not depict the complete route taken by water from intake to discharge as required by the instructions. Figures 2 and 3 taken together are limited to only the route taken by water through the Wastewater Treatment Facility and the Wastewater Treatment Plant. The applicant should clarify and revise the line drawing as necessary to depict the route taken by water through the entire facility.
- The diagrams do not identify receiving waters. Figure 2 and 3 provide as endpoints "Stabilized effluent for discharge or potential reuse …" or "final effluent". The specific discharge location and receiving waters should be specifically identified.

A revised line drawing is needed to address these issues. We note that several other water flow diagrams were included in the application materials, but we did not locate any figure that contains the necessary information described above. If the applicant wishes to reference a different water flow diagram in Form 2D (and which does address all of the above information), please provide the specific reference to that flow diagram (and the form should be updated accordingly). In addition, if water management is expected to change over the course of the entire project, we recommend that the applicant submit line drawings to represent each project phase, as necessary, to illustrate how water will be managed throughout the lifetime of the project.

The complete flow diagram is needed for many parts of the application. This information assists the permitting authority and the public to understand the processes of the facility's operations and the nature of all of the materials with which the water will be in contact, including any additives. This information also assists in describing the extent to which wastewater streams may be mingled with each other and the extent to which water is reused in the facility's process(es).

The permitting authority will need this information to ensure appropriate limits and conditions are included in the permit, including the implementation of federal new source performance standards.

**Item V. Effluent Characteristics.** The application instructions require the applicant to report levels of pollutants as concentration and as total mass for each outfall for certain pollutants, and for others only if they are believed to be present in the discharge. The applicant has submitted data for several parameters, but only concentration data have been submitted, and only one result, not one result for each outfall, is reported. The data must also be expressed as a total mass, or pollutant load. It is unclear to which outfall the data applies as no outfall number is provided. Additionally, "Year 10" has been stamped onto the form. The significance of providing data for "Year 10", is not explained nor is it sufficient for permitting purposes to rely on information provided for one year whose significance is not explained. We recommend that if the character of the effluent is expected to change with time and or phase of the project that the applicant provide sufficient information so that each phase of the project is represented.

Additionally, the applicant has listed what appear to be incomplete references in the space provided to identify the sources of information used to derive the effluent quality information provided on the Form. We understand that these sources may be shortened titles for documents listed in a separate collection of support documents submitted by the applicant, but we are unsure where to find the information or if it is available for public review. The specific documents and locations within those documents where the information can be located must be provided. Please ensure that these materials become part of the permit record and are made available for public review in a timely manner.

It is important to make sure that this issue is resolved with the applicant so as to provide a transparent means of verifying the source of information that was used to provide the estimates, as well as to document the basis the permitting authority will use to develop permit requirements.

**Item VI. Engineering Report on Wastewater Treatment.**
**A.** reference is made to "Waste Water Treatment System: Design and Operation Report". We did not find this report attached to the application. It is listed in the references section of the application with an indication that it was estimated to be submitted in July 2016. The applicant should revise the application and MPCA should ensure that this report is timely available to the public for review along with the rest of the application materials in a timely manner.

**B.** the location of existing plants does not need to be limited to plants located in the State of Minnesota. This section could be expanded to include information from similar operations regardless of their location. This information is normally used by the permit issuing authority to assess the applicant's information in relation to similarly situated facilities that may be discharging wastewater that is similar to the proposed discharge(s) in order to ensure adequate characterization of anticipated future loadings.

**Antidegradation.**

We are concerned that the antidegradation analysis submitted with the application materials pertains only to the plant site. As the mine site would be constructed as part of the same project for which the discharges from the plant site are proposed, and as there will be discharges from the mine site to Waters of the U.S., we would like to discuss with you the scope and timing of the antidegradation analysis that includes the construction of the mine site. After further analysis of the issue, EPA will provide additional comments on this matter including whether the lack of such information is a deficiency in the application.

**New Source Performance Standards.**

Federal regulations at 40 C.F.R. § 440 include restrictions on discharges from mills that use froth-floatation for beneficiation of copper and other ores. No discharge is allowed to occur from such process with the following exception:

> In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section. *40 C.F.R. § 440.104(b)(2)(i)*

Appendix D of Volume I of the application contains a lengthy discussion on this "zero discharge" requirement and how the proposed project might comply with it. In addition, MPCA has recently raised questions to EPA as to how to apply this requirement in the permit. We believe that a complete water flow diagram or diagrams, as required by Item III-B of the application and discussed above, will help illustrate the water management proposed for the facility and, therefore, highlight how the discharge would or would not be in compliance with the requirements at 40 C.F.R. § 440. From what we understand, the Northmet operation will manage water pumped from the mine pits, process water, and precipitation falling on the facility. The process water that will be discharged will be comingled with water pumped from the mine pits and the precipitation falling on the facility, which together will be treated before it is discharged, subject to applicable standards. In this case, we believe it may be appropriate to apply the exemption to the zero discharge requirement, and that the facility may discharge a volume of water equal to the difference between annual precipitation and annual evaporation subject to the standards provided in 40 C.F.R. § 440.104(a). EPA notes that 40 C.F.R. § 440.132(b) provides:

> "Annual precipitation" and "annual evaporation" are the mean annual precipitation and mean annual lake evaporation, respectively, as established by the U.S. Department of Commerce, Environmental Science Services Administration, Environmental Data Services or equivalent regional rainfall and evaporation data.

In regard to the multi-year approach proposed by the applicant in Appendix D, Volume I, we disagree that the regulations in 40 C.F.R. § 440 do not include a timeframe for calculating the allowable discharge or evaluating the actual discharge. The regulations repeatedly utilize the word annual. While the term "annual" is not specifically defined in the regulations, it is defined in several other commonly used sources including the Miriam-Webster Dictionary as "covering the period of a year", and there is no basis on which to interpret EPA's intended use of the word annual to mean anything other than "covering a period of a year".

We are available to discuss the details of how to implement 40 C.F.R. § 440 with you after the revised application materials are submitted to the MPCA and as you move forward to draft permit conditions that implement 40 C.F.R. § 440.