DEC 18 2018

WN-15J

Memorandum

SUBJECT: Review Summary of Poly Met Mining, Inc., NorthMet Proposed NPDES Permit (MN0071013)

From: Kevin M. Pierard, Chief
NPDES Programs Branch

To: File

Permit Review Summary

MPCA provided EPA Region 5 with a pre-public notice draft permit for review on January 17, 2018[1]. Regular meetings were held approximately every two weeks during EPA Region 5's review, and comments identified were shared verbally with MPCA during these meetings. EPA Region 5 identified numerous substantive comments on the draft permit and prepared a comment letter to MPCA.[2] However, Region 5 senior management reached an agreement with MPCA to

[1] The actual public notice began on January 31, 2018 and ended on March 16, 2018.

[2] EPA Region 5 staff (NPDES and ORC) briefed senior management on March 9, 2018 to highlight the significance of the comments identified during review of the draft permit and the importance of sharing the comments with MPCA through a comment letter. During the briefing, EPA Water Division recommended sending a comment letter to MPCA during the public comment period to document EPA Region 5's findings. It was noted during the briefing that

- EPA provides comments on draft permits during the public comment period as a part of our regular NPDES program oversight to ensure that state permits are consistent with the Clean Water Act (CWA) and its regulations <u>prior</u> to the permit being proposed for issuance.
  - This practice reduces the need to issue objections on proposed permits because the state would have had an opportunity to work with EPA to address concerns before proposing the permit.
- EPA has been involved in the project for several years, as a cooperating agency during the NEPA process, which resulted in several project design changes to improve environmental protection. At the end of the NEPA process, EPA agreed with the State's proposal to address remaining surface water quality concerns during the permitting process.
- To follow-up on the NEPA agreement and to implement our Joint Priority with the state, EPA has had biweekly discussions with MPCA on various issues since the permit application was submitted in July 2016. However, concerns remain.

As indicated above EPA Region 5 identified several issues during review and provided the following general characterization of them as follows:

1. The draft permit did not include water quality based effluent limits (WQBELs) or any other conditions that are as stringent as necessary to ensure compliance with the applicable water quality requirements of all affected States as required by 40 C.F.R. 122.4(d) and 40 C.F.R 123.44(c)(9).

forgo sending written comments.[3] Following this agreement, EPA Region 5 held a conference call with MPCA on April 5, 2018 during which the comment letter was read to the State. EPA Region 5 held multiple meetings with MPCA following the April 5, 2018 conference call. During these meetings MPCA provided updates on the status of permit issuance but did not provide responses to comments received. These calls ceased in early summer, 2018. EPA Region 5 and MPCA had a face to face meeting on September 25-26, 2018 during which the concerns outlined in our April 5, 2018 conference call were discussed in more detail.

The intent of the September 2018 meeting was to provide EPA an opportunity to meet with MPCA and the company[4] to obtain additional information on the treatment systems and operation. The second half of the meeting was for EPA to meet one-on-one with MPCA to attempt to resolve the significant issues identified by EPA Region 5 on the draft permit. Two of the more objectionable issues raised by EPA Region 5 were (1) the lack of water quality based effluent limitations (WQBELs) in the draft permit and (2) MPCA's plan to issue general permit coverage for construction stormwater discharges from peat dominated wetland systems which may release significant amounts of mercury into downstream navigable waters.

Regarding the lack of WQBELs, the NPDES program believes based on information provided by the company that there is a reasonable potential to cause or contribute to an excursion from state numeric and narrative water quality standards. MPCA referred to a "qualitative" reasonable potential analysis based largely on their confidence that the treatment system will perform as expected. Given MPCAs refusal to include WQBELs EPA Region 5 asked MPCA at the face to face meeting to include additional "operating" limits in the permit for arsenic, cobalt, lead, nickel, and mercury at an internal outfall, WS074. Following the meeting, after consideration of EPA Region 5's request and discussions between MPCA and the company, MPCA agreed to include the additional "operating" limits.[5] Unlike WQBELs and TBELs, internal "operating"

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2. The permit includes technology based effluent limits (TBELs) that are up to a thousand times greater than applicable water quality criteria.
3. The draft permit did not include all of the requirements of 40 C.F.R. 440, Subparts G, H and K that apply to this proposed project, namely a restriction on discharge volume that is equivalent to the annual net precipitation for the site.
4. The draft permit contained de facto permit modifications, upon submittals from the permittee, which would be a violation of the public process associated with permit modifications under 40 C.F.R. 122.62, and create a serious compliance and enforceability concern as to the scope of what is covered by the permit per 40 C.F.R. 123.44(c)(1), (5) and 40 C.F.R. 122.4(a).
5. Additional permit enforceability concerns, per 40 C.F.R. 123.44(c)(1) and; 40 C.F.R. 122.4(a), include that the permit:
    a. Contains "operating limits" on an internal outfall that are not clearly enforceable by EPA or MPCA and, thus, would be ineffective at protecting water quality.
    b. Functions as a shield from Clean Water Act enforcement for pollutants disclosed during the application process per 33 U.S.C. 1342(k).

[3] Email from Kurt Thiede (EPA Region 5 Chief of Staff) to Shannon Lotthammer (MPCA) dated March 16, 2018 which outlines the agreement between EPA and MPCA. Appendix A.

[4] PolyMet representatives and their consultants from Barr Engineering were present on the first day of meetings held on September 25, 2018.

[5] Inclusion of these "operating" limits are for all pollutants for which modelling and/or pilot testing determined to be potentially present in waste streams at concentrations greater than water quality criteria before entering the

limits may lack a clear regulatory connection to controlling surface water discharges. The Region 5 review team was asked by Kurt Thiede to determine whether operating limits could be federally enforceable provisions of the permit. The Office of Regional Counsel, in conjunction with EPA's Office of General Counsel, evaluated these "operating" limits and determined that they are arguably federally enforceable as operation and maintenance requirements for the facility's reverse osmosis/nanofiltration treatment system. 40 C.F.R. 122.41(e). We note that federal enforceability of these operating limits is less certain and more complex than if these limits were established as WQBELs.

In addition to these internal operating limits, MPCA also included at surface water discharge point SD001, a 1.0 TUc whole effluent toxicity (WET) limit, a WQBEL for pH, and a narrative prohibition of violations of applicable state water quality standards.[6] The State also included a suite of federal TBELs for the iron ore industry category. See 40 C.F.R. 122.44(a). EPA's internal analysis showed that the majority of the TBELs would not be sufficient to ensure that the facility's discharge did not exceed applicable state WQS. However, the State's inclusion of the narrative prohibition on violation of applicable state WQS arguably would function as the controlling WQBEL at SD001 and would ensure that the surface water discharge would not exceed applicable State WQS. See 40 C.F.R. 122.44(d).

While MPCA representatives agreed to consider modifying the draft permit to add operating limits for additional parameters they refused to make any changes to address the expected mercury loading anticipated from stormwater runoff from the removal of peat dominated wetlands and plan to cover this discharge under the State's construction stormwater general permit. The construction stormwater general permit does not include provisions for addressing specific water quality standards issues. As a result, the proposed permit (and associated permitting scheme) appears to leave mercury from this aspect of the project wholly unregulated. EPA Region 5 recommended that MPCA evaluate whether there is reasonable potential for discharges covered under the construction stormwater general permit to cause or contribute to excursions from water quality standards and whether such discharges could be controlled as a part of the State's CWA Section 401 certification. There is nothing in the permitting record to suggest that MPCA has performed this analysis. Therefore, construction stormwater general permit coverage, which presupposes that a project will comply with WQS, likely would not be sufficient to ensure discharges of construction stormwater from peat removal activities, which have been shown to release mercury at other Minnesota industrial facilities, will comply with downstream water quality standards in this case. MPCA suggested that the stormwater pollution prevention plan for this activity would include detention basins and that the majority of storm water from this activity would be collected and sent to the tailings basin and ultimately to the WWTS. At this time, it does not appear that MPCA intends to include stormwater monitoring requirements or effluent limits for mercury. EPA continues to recommend that the State issue an individual construction stormwater permit for this project, but this concern is separate from the PolyMet individual NPDES discharge permit before us.

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wastewater treatment system. Note that these are in addition to the "operating" limits included in the draft permit for sulfate, and copper.

[6] MPCA revised the narrative condition to the following: "The discharge of treated wastewater from the WWTS must not violate state water quality standards. [Minn. Stat. § 115.03 subd. 1]."

Following the face to face meeting in September, MPCA provided a copy of the pre-proposed permit to EPA Region 5 for a 45-day review on October 25, 2018. As noted above and described in more detail below, MPCA addressed or partially addressed some comments while completely disregarding others. Based upon the changes made to provide additional protection at Outfall SD001 and the inclusion of additional operating limits which we believe are arguably federally enforceable, EPA provided verbal confirmation to MPCA on December 3, 2018 that EPA would not oppose MPCA's public notice of the proposed permit. MPCA proposed the permit on December 4, 2018. According to our memorandum of agreement with MPCA[7], this is the version of the NPDES permit it intends to issue, and EPA has 15 days or until December 19, 2018 to review the permit and determine whether to issue a general objection. The issues, MPCA's stated revisions (if any), and EPA's response are explained in the attached table.

Next Steps

EPA Region 5 has 15 days, or until December 19, 2018 to definitively decide whether to file a general objection to MPCA's issuance of the permit. A general objection states in a very general way what the issues are and the bases for EPA's objection. EPA would then have 90 days from the date that the proposed permit was submitted to file a specific objection. A specific objection would provide a detailed explanation of EPA's basis for objection and describe how EPA would resolve the objectionable items. EPA and MPCA could work out the issues with the proposed permit during the 90 days and potentially avoid sending the specific objection.

The review team's conclusion that there are legal arguments that can be made to support enforcement of the proposed permit have been provided to Water Division management and Region 5 Chief of Staff Kurt Thiede.

Contacts

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[7] https://www.epa.gov/sites/production/files/2013-09/documents/mn-moa-npdes.pdf

PolyMet NorthMet NPDES Permit Review Issues Summary (See Appendix B which includes the text that was read aloud to MPCA)			
	Issue identified in the public notice draft and communicated to MPCA	**MPCA Revision**	**EPA Response**
1	The permit includes technology based effluent limitations (TBELs) from applicable federal regulations at 40 CFR Part 440 Subparts G, J, and K. However, the permit does not include water quality based effluent limitations (WQBELs) at the surface water discharge point SD001 for key parameters and appears to authorize discharges that would exceed Minnesota's federally approved human health and/or aquatic life water quality standards (WQS).	MPCA revised the permit to include "operating" limits for As, Co, Pb, Ni, and Hg at an internal monitoring point, WS074. These are in addition to the "operating" limits that the state had previously included for SO4, and Cu at WS074. According to the permit, these limits are enforceable conditions of the permit. Separate from the internal operating limits, MPCA also included a WQBEL for pH, a 1.0 TUc WET limit, and a narrative condition prohibiting the violation of WQS, all of which apply at SD001, the only surface water discharge point associated with this facility.	MPCA's inclusion of operating limits at WS074 is intended to function as a set of operation and maintenance controls on the facility's RO/nanofiltration treatment system. As such, these limits are consistent with the O&M provision at 40 C.F.R. § 122.41(e) and Minnesota rules. These limits <u>arguably</u> are federally enforceable requirements of this permit, but they are not WQBELs. Limits imposed at SD001, including the numeric WET limit, the WQBEL for pH, and the narrative language prohibiting the violation of WQS are all, <u>arguably</u>, federally enforceable WQBELs. Based upon the record and EPA's knowledge of other facilities, EPA believes the facility has a reasonable potential to exceed WQS and numeric WQBELs should therefore be included at outfall SD001 to alleviate questions regarding the enforceability of the permit. **However, MPCA's alternative approach <u>arguably</u> would allow MPCA, EPA, and/or citizens to enforce both the internal O&M**

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			requirements at WS074 and the WQBELs at SD001.
2	The permit lacks clear narrative effluent limitations such as an unqualified general prohibition on discharges that would cause exceedances of WQS.	MPCA included the following narrative condition that applies at the surface water outfall, SD001: "The discharge of treated wastewater from the WWTS must not violate state water quality standards. [Minn. Stat. § 115.03 subd. 1]."	**This change resolves our comment.**
3	The permitting record does not appear to demonstrate that MPCA considered all the pollutants that were disclosed in the permit application as being present in the proposed discharge when evaluating the need for WQBELs.	See "MPCA Revision" to Issue 1.	See "EPA Response" to Issue 1.
4	The fact sheet's reasonable potential analysis relies on the assumption that data provided in the application are maximum values without taking into account the potential variability and uncertainty in the discharge from this new source. Under the Addendum to the EPA-MPCA National Pollutant Discharge Elimination System (NPDES) Memorandum of Agreement for the GLI (Great Lakes Initiative) (May 8, 2000), Minnesota committed to "use only alternative statistical procedures for deriving PEQ[8] that meet the standard in 40 CFR Part 132, Appendix F,	See "MPCA Revision" to Issue 1. No change to the reasonable potential analysis.	See "EPA Response" to Issue 1.

[8] "Projected Effluent Quality," (PEQ) is described in 40 CFR Part 132, Appendix F, Procedure 5, Paragraph B.2.

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	Procedure 5, Paragraph B.2."[9]		
5	At pages 34-37 of the fact sheet,[10] MPCA states that its decision that WQBELs are not needed in the permit relies on the operational limits for sulfate (in milligrams per liter) and copper (in micrograms per liter) at internal outfall WS074. Although these limits are set to low values, including the copper limit that is set to the WQS, (calculated by assuming a hardness value of 100 mg/L), there is nothing definitive in the permit or supporting information that justifies a conclusion that meeting these operational targets will result in meeting WQS for all the parameters in the permit application. This is especially a concern for mercury, for which the standard is specified in nanograms per liter and the pilot study[11] states that the effectiveness of the treatment system to remove mercury is unknown.	See "MPCA Revision" to Issue 1.	See "EPA Response" to Issue 1.
6	The permit requires that no sulfate or copper be added to the discharge after monitoring station WS074 but does not prohibit the addition of any other additives between	MPCA revised the permit section titled "WWTS Effluent Stabilization Process" to prohibit the addition of aluminum between WS074 and SD001. The permittee must certify	**These changes resolve our comments.**

[9] "EPA and MPCA agree that MPCA will use only alternative statistical procedures for deriving PEQ that meet the criteria in 40 CFR Part 132, Appendix F, Procedure 5, Paragraph B.2. EPA and MPCA further agree that EPA retains the authority to review any specific statistical procedures Minnesota intends to use for deriving PEQs and to object to permits that have been developed using statistical procedures that do not meet the requirements of Paragraph B.2. of Procedure 5."

[10] "To ensure the WWTS is operating as designed and to remain consistent with the assumptions made in the FEIS, the permit includes an internal performance monitoring point (Station WS074) where an Operating Limit of 10 mg/L sulfate applies. The Operating Limit at WS074 is an enforceable permit limit but is neither a water quality based permit limit nor a technology based permit limit because there is no Reasonable Potential." (p. 35).

[11] See page 43 of "Final Pilot-testing Report" dated June 2013.

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	monitoring station WS074 and the final outfalls. In fact, the permit record shows that the effluent of the water treatment system will require mineral addition prior to its discharge to surface waters to reduce the toxicity due to the low ionic strength of the treated water. This raises two concerns. First, the permitting record includes information showing that available local sources of lime contain aluminum in levels that, if used, will likely result in a discharge that exceeds the applicable water quality standard for aluminum.[12] While MPCA appears assured that higher cost lime containing lower levels of aluminum is available and will be used, to ensure that likely variability in the quality and price of available lime does not result in exceedances of the applicable WQS, the permit should include a WQBEL for aluminum at the final discharge points or an internal outfall after mineral addition. Second, in light of the potential for whole effluent toxicity to occur, the permit should include whole effluent toxicity limits at the final discharge points or an internal outfall after mineral addition.	in the comments section of its DMR for SD001 that no aluminum has been added during the effluent stabilization process. MPCA also included a numeric WET limit of 1.0 TUc at SD001.	
7	The draft permit does not include all the requirements of 40 CFR 440, Subparts G, J, and K that apply to this proposed project, including a restriction on discharge volume	MPCA revised the permit at 6.10.8 to include a numeric limit on flow.	**This change resolves our comment.**

[12] See page 31 of the "Final Pilot-testing Report" dated June 2013.

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	that is in conformance with 40 CFR 440.104(b)(2)(i) and that is equivalent to the annual net precipitation for the site. Permit sections starting at 6.10.1 include a formula that retrospectively calculates the allowable discharge and includes a "carryover" amount defined as "the difference between the allowable annual discharge volume and the actual volume discharged" which acts as a "credit" that the permittee is allowed to apply to the following calendar year. This "carry over credit" appears to be in contradiction to the applicable regulatory definitions of "annual precipitation," "annual evaporation," and "mine drainage" at 40 CFR 440.132(b), and (h). We recommend setting a numeric limit on flow, including this limit in the permit, and ensuring that it is consistent with 40 CFR 4410.104(b)(2)(i).		
8	We recommend that MPCA consider the applicability of – and inclusion of – effluent limitations contained in 40 CFR 440.12, and 40 CFR Part 440, Subpart A (iron ore), as the project discharge could include legacy pollutants.	MPCA revised the permit at 8.1.1 to include the additional TBELs.	**This change resolves our comment.** We note that the applicable TBELs will not ensure that the discharge at SD001 will not exceed applicable WQS. The State's inclusion of a narrative prohibition on exceedances of applicable state WQS functions as a WQBEL that arguably would ensure that discharges from the facility, even if they meet applicable TBEL limits, will not result in an excursion of state WQS.
9	The permit as written may preclude	See "MPCA Revision" to Issue 1.	See "EPA Response" to Issue 1.

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	enforcement per CWA Section 402(k), 33 USC 1342(k), for pollutants disclosed during the application process but for which there are no limitations, or for water quality standards excursions where the limitation provided in the permit appears to be greater than the applicable state water quality criterion.		
10	The permit contains 'operating" limits on an internal outfall that may not be enforceable by EPA, citizens, and potentially MPCA and, thus, may be ineffective at protecting water quality under the Clean Water Act (see 40 CFR 122.4(a), and (d)). Specifically, the permit includes an internal outfall operating "target" and "limit" for sulfate based on a voluntary commitment by PolyMet to meet a 10 mg/L sulfate limit (permit sections 6.10.34-35) and an internal operating "limit" for copper that MPCA states will ensure compliance with the chronic water quality standard for copper (permit section 6.10.43). We understand that MPCA's authority to enforce such a provision may rest on state authority, outside the scope of the CWA. MPCA should revise the permit as necessary to ensure that all NPDES requirements are enforceable under the CWA.	See "MPCA Revision" to Issue 1.	See "EPA Response" to Issue 1.
11	The internal "operating" limit for copper, at 9.33 micrograms per liter at permit section 6.10.43, is equivalent to the water quality criterion for copper. However, permit section	See "MPCA Revision" to Issue 1.	See "EPA Response" to Issue 1.

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	6.10.44 appears to authorize higher discharge concentration for copper, based on the TBEL that appears to apply at outfall SD001 (permit section 8.1.1). This creates a conflict as to which limit is applicable and enforceable against the permittee. MPCA should revise the permit to include a WQBEL for copper.		
12	MPCA plans to transfer the administratively continued, expired Cliffs Erie, LLC permit (and associated enforcement documents) for the existing tailings basin to an affiliated corporate entity of PolyMet. It appears that this arrangement could result in the permittee holding multiple permits covering the same discharge for some time after the effective date of the NorthMet permit. This creates confusion over which discharges are covered by each permit and may complicate or preclude enforcement of permit requirements under either permit, for example if legacy pollutants do not attenuate as predicted (permit section 6.10.45).	No changes made in either the permit or fact sheet. MPCA informed EPA during the meeting of September 25-26 that the State approved this transfer through a process provided under the State's consent decree resolving the Cliffs Erie bankruptcy.	**EPA lacks sufficient information to determine whether our concern has been addressed.**
13	The permit fact sheet (p. 17) acknowledges continuing seep discharges from the tailings basin. As such, the draft permit and/or supporting documentation should clearly assign responsibility for seep discharges by specifying those applicable portions of the Cliffs Erie, LLC permit (MN0054089), the Cliffs Erie, LLC Consent Decree with MPCA, and the draft NorthMet permit.	No changes made in either the permit or fact sheet.	**Comments were <u>not</u> addressed.**

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	Specifically, the permit should include: (a) a list of known seeps (including coordinates and/or sections) that area authorized to discharge from the tailings basin, (b) a map identifying seeps and their relationship to the planned containment system, (c) monitoring and applicable limits for these seeps, because, as noted in the fact sheet (p. 17), seep discharges "contributed to exceedances of permit effluent limitations established in the NPDES SDS permit," and (d) appropriate interim authorization , limits, and requirements for tailings basin seeps until such a time as seeps are fully contained and cease to reach surface waters.		
14	MPCA plans to issue general permit coverages for construction stormwater discharges prior to commencement of construction. Neither the draft individual permit, nor any supporting documentation clearly delineates what activities are excluded from coverage under a general permit. Further, the stormwater general permit would authorize discharge from the draining of over 900 acres of wetlands, which are dominated by peat bogs. This activity is expected to release significant amounts of mercury into downstream navigable waters. While MPCA has acknowledged and addressed such discharge in its peat mining permits (and in verbal comments regarding this project), nothing in	No change made to address this issue.	**Comment was <u>not</u> addressed.** MPCA indicated in our face to face meeting that they do <u>not</u> intend to issue an individual stormwater discharge permit in order to resolve this issue. While we also discussed ways that MPCA could ensure mercury monitoring and limits were applicable to the discharge through the CWA 401 certification, it is as-yet unclear whether this issue will be addressed in the State's 401 certification for the Corps CWA 404 permit for the wetlands portion of the project.

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	the permitting record demonstrates that this issue has been addressed or even considered. There is no provision in the construction stormwater general permit for addressing specific WQS issues. Thus, the draft permit (and associated permitting scheme) appears to leave mercury from this aspect of the project wholly unregulated. We suggest identifying what is intended to be covered under the stormwater general permit and evaluate whether there is reasonable for discharges from activities covered under the stormwater general permit to cause or contribute to excursions from WQS. If there is such reasonable potential, coverage under the stormwater general permit would not be appropriate. Rather this discharge, with appropriate WQBELs, could be covered under the NorthMet permit or another individual permit.		
15	Permit section 6.10.17 does not allow the permittee to discharge any process wastewater from the mine site to the surface waters. However, it is not clear how compliance with this condition will be evaluated. Under 40 CFR 122.44(i), NPDES permits must include monitoring requirements "to assure compliance with permit limitations," which include, among other thing, "the mass (or other measurement specified in the permit) of each pollutant limited in the permit" and "the volume of	MPCA revised the permit at 6.10.17 to include language specifying that all mine water must be treated at the plant site or stored in the floatation tailings basin. MPCA revised the permit at 6.10.26 to include language prohibiting the discharge to surface waters from the FTB pond (in addition to the FTB seepage containment system). MPCA revised the permit at 6.11.2 to exclude the discharge of sewage.	**Comment was <u>not</u> addressed fully.** Specifically, there is still no means of compliance evaluation to verify whether certain discharges are occurring.

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	effluent discharged from each outfall." We recommend that the permit include monitoring requirements and conditions against which compliance can be objectively measured. We have similar concerns with other provisions at permit sections 6.10.26, 6.10.78, 6.11.2, 6.11.9, 6.12.2, and 6.15.11.	MPCA revised the permit at 6.11.9 to change from "the direct discharge" to "discharges."	
16	The draft states that certain plans, reports, and other actions are effective parts of the permit upon submittal by the permittee, making them de facto permit modifications that, in some instances, are likely to be major modifications subject to 40 CFR 122.62 (for example, see permit section 6.10.38). EPA is concerned that the permit allows both the permittee and MPCA to modify the permit without following the public process for major permit modifications under 40 CFR 122.62. Permit modifications that do not follow federal regulations may be unenforceable, may cause confusion for regulators and public over what is covered by the permit and therefore would not ensure compliance with the CWA (see 40 CFR 122.4(a)).	MPCA revised several sections of the permit that require certain types of reports to include language stating that they are subject to review and approval by MPCA and acknowledge that actions proposed by any of these submittals may require a permit modification. See permit sections 6.10.56, 6.10.62, 6.10.69, and 6.10.73. These sections provide details on the Model Verification, Five-Year Model Evaluation, Groundwater Evaluation, and Comprehensive Performance Evaluation reports respectively. The state regulation addressing permit modifications is Minn R. 7001.0170.	**Our concerns will be addressed so long as MPCA revises the permit in a timely manner and provides necessary public input on those revisions as outlined in the permit.** The revisions made to include the reference to Minnesota's rule for modification of permits or revocation and reissuance of permits establish the basis for when a modification is triggered. However, the preliminary results of EPA's investigation of the petition to withdraw Minnesota's NPDES program showed that, historically, MPCA has not completed timely modifications nor reissuance of permits and not generally sought public input for permit modifications for permits issued to the mining sector.
17	Although MPCA may wish to require the permittee to undertake immediate corrective action in appropriate circumstances, EPA	See "MPCA Revision" to Issue 16.	See "EPA Response" to Issue 16.

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	recommends that MPCA eliminate those permit provisions that make permittee-submitted plans, reports, and other actions immediately effective parts of the permit. We recommend that, instead, MPCA employ appropriate enforcement responses and its authority to modify permits under Minn. R. 7001.0170 and 40 CFR 122.62, as necessary.		
18	The draft permit contains no limits for CBOD, TSS, pH, fecal, percent BOD/TSS reductions at the sewage treatment stabilization pond internal waste stream monitoring location WS009. Also, the permit contains no limits for CBOD, fecal coliform, or percent BOD/TSS reductions at SD001. We also note that there does not appear to be a reasonable potential discussion regarding the stabilization pond. MPCA should evaluate whether effluent from the stabilization pond will cause or contribute to excursions from WQS. We also recommend including reporting requirements such as weekly maintenance observations, for the stabilization pond.	MPCA revised table 8.3.3 for WS009 to include monitoring for BOD5 or CBOD5, and total suspended solids. Note the draft permit (and pre-proposed) permit includes a numeric limit for fecal coliform. No changes were made to table 8.1.1 for SD001. No changes were made regarding any analysis to evaluate whether reasonable potential exists for the sewage treatment stabilization pond.	**Comment was <u>not</u> addressed.** The effluent limitations for sewage treatment are long established and should be included in the permit.
19	The permit (at p. 9 and Table 2.1) states that the WWTS discharge will be distributed to various tributaries to minimize hydrologic or ecologic impacts, but the permit does not clearly describe the relationship between the flow in these outfalls and the allowable discharge (permit section 6.10.1-6.10.9). MPCA should include provisions in the	No change made to address this issue.	**Comment was <u>not</u> addressed.**

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	Issue identified in the public notice draft and communicated to MPCA	**MPCA Revision**	**EPA Response**
	permit that show how the permittee and MPCA will determine the distribution of flows to Outfalls SD002-SD011.		
20	The permit (at p. 11) discusses the "controlled discharge" from the stabilization pond to the floatation tailings basin. The permit should explain how the controls on this discharge will function as enforceable requirements of the permit.	No change made to address this comment.	**Comment was <u>not</u> addressed.**
21	Permit section 6.10.12 does not allow cells 2E and 1E to be combined until the floatation tailings basin seepage collection is "fully operating" but it is not clear how this term is defined. MPCA should define "fully operating" to ensure that these permit requirements can be adequately monitored and enforced.	MPCA revised the permit to include the following language: "A segment of the FTB Seepage Containment System (i.e., the northern, northwestern, and western segment or the eastern segment) is considered to be fully constructed and operating when construction of that segment is complete and the Permittee has demonstrated that the segment is capable of collecting and routing FTB seepage for treatment at the WWTS or for temporary storage in the FTB.	**This change resolves our comment.** The new language includes sufficient detail from which a conclusion can be made regarding the operational capability of the seepage collection system.
22	Permit section 6.10.27 requires the permittee to maintain a system of paired monitoring wells and piezometers (one internal and one external to the FTB seepage containment system). If these are established monitoring points already included in the permit, MPCA should include references to the monitoring numbers here. If these monitoring points have not yet been established, MPCA should create and include them in the monitoring table along with the type and frequency of	No change made to address this comment.	**Comment was <u>not</u> addressed.**

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PolyMet NorthMet NPDES Permit Review Issues Summary (See Appendix B which includes the text that was read aloud to MPCA)			
	Issue identified in the public notice draft and communicated to MPCA	**MPCA Revision**	**EPA Response**
	data collection.		
23	Permit section 6.10.26 says "Direct discharge to surface waters from FTB Seepage Containment System is prohibited." It is unclear to EPA how MPCA would implement the prohibition of "direct discharge." EPA recommends that the permit be clarified to prohibit any "discharge of pollutants to surface waters" consistent with the Clean Water Act.	MPCA revised the permit to include the following language: "The permittee shall construct the FTB Seepage Containment System to include a low permeability cutoff wall keyed into bedrock, a subgrade collection and sump system on the inward side of the cutoff wall, and pumping capable of removing collected water to the WWTS and/or the FTB. The cutoff wall shall be no less than one foot in thickness and have a maximum permeability of $1x10^{-6}$ cm/sec, or equivalent as approved by MPCA. The FTB Seepage Containment System shall be constructed and operated so as to maintain an inward hydraulic gradient across the cutoff wall."	**This change resolves our comment.**
24	Permit section 6.10.49 requires sampling at SW003, SW005, SW006, SW007, and SW020 to begin 18-months following initial operation of the WWTS. MPCA should begin sampling upon permit issuance so that a baseline can be established at these locations.	No change was made to address this comment.	**Comment was <u>not</u> addressed.**
25	Permit section 6.11.11 prohibits the discharge of PCBs. As this is a legacy mine site, we recommend that MPCA work with the permittee to determine whether the site contains PCBs. If it is determined that the site does not contain PCBs, MPCA should have the permittee certify this finding. Similarly, if PCBs are present on site, then	No change was made to address this comment.	**Comment was <u>not</u> addressed.**

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PolyMet NorthMet NPDES Permit Review Issues Summary (See Appendix B which includes the text that was read aloud to MPCA)			
	Issue identified in the public notice draft and communicated to MPCA	**MPCA Revision**	**EPA Response**
	MPCA should revise the permit to include monitoring requirements to evaluate compliance with the prohibition.		
26	We recommend that the permit include at the beginning (for example, p. 1) a citation to the federal and state authorities pursuant to which the discharges from the facility are allowed.	No change was made to address this comment.	**Comment was <u>not</u> addressed.**
27	There are several references in the permit and fact sheet where the reader is directed to the permit application for more information. For example, one reference to the 3rd volume of the October 2017 permit application references a document over 500 pages long (see permit p. 8). We suggest including a location for references such as these throughout the permit to facilitate the reader's ability to access the information.	No changes made to address this comment.	**Comment was <u>not</u> addressed.**
28	Permit section 6.10.21 allows "agency pre-approved adaptive management or mitigation measures." We recommend including a link or reference to where these measures can be located.	MPCA revised the language at 6.10.21 to read as follows: "Implementation of other Agency approved adaptive management or mitigation measures, as appropriate. Adaptive management or mitigation measures may include those identified above. All proposed adaptive management or mitigation measures are subject to MPCA review and approval. In accordance with Minn. R. 7001.0170, adaptive management or mitigation measures may require a modification of the permit, including a public notice of the proposed modifications."	**See EPA Response to Issue 16.** The revision no longer includes "pre-approved" adaptive management or mitigation measures and instead relies on approval of those listed in this section of the permit (i.e. those that are listed as being approved or pre-approved), and those that require approval by MPCA. Regarding the latter, MPCA has included reference to the State regulation for permit modifications that if followed will

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PolyMet NorthMet NPDES Permit Review Issues Summary (See Appendix B which includes the text that was read aloud to MPCA)			
	Issue identified in the public notice draft and communicated to MPCA	**MPCA Revision**	**EPA Response**
			address EPA's concerns.
29	The maps and figures in the permit and fact sheet are often difficult to read. If clearer versions of these cannot be included, we suggest including a reference to where the original maps and figures can be viewed in hard copy of online.	No changes made to address this comment.	**Comment was <u>not</u> addressed.**

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Appendix A

Email from Kurt Thiede

From: Thiede, Kurt
Sent: Friday, March 16, 2018 12:44 PM
To: Lotthammer, Shannon (MPCA) <shannon.lotthammer@state.mn.us>
Cc: Korleski, Christopher <korleski.christopher@epa.gov>; Pierard, Kevin <pierard.kevin@epa.gov>; Nelson, Leverett <nelson.leverett@epa.gov>; Holst, Linda <holst.linda@epa.gov>; Stepp, Cathy <stepp.cathy@epa.gov>
Subject: Polymet Draft Permit Discussion

Shannon,

Thanks once again for working with us to find a solution to this matter. Here is our understanding of what EPA and MPCA have agreed to.

Once MPCA completes their response to public comments, it will develop a pre-proposed permit (PPP) and provide the PPP to EPA Region 5. Region 5 EPA will have up to 45 days to review the PPP and MPCA's responses to public comments and provide written comments on the PPP to MPCA. This would occur prior to MPCA submitting a proposed permit to EPA, which, according to the current MOA, would continue to give EPA 15 days to comment upon, generally object to, or make recommendations with respect to the proposed permit. In accordance with the current MOA and as specified in CWA Section 402(d)(2)(B) and 40 C.F.R. 123.44(b)(2), EPA still may raise specific objections within the 90 day period from receipt of the "final" proposed permit, but we are hopeful our discussions and the additional review will allow us to come to an agreement and avoid objections.

Again, it is our hope and intent to continue a dialog between MPCA staff and R5 EPA WD staff prior to receipt of the PPP and during EPA's review of the PPP as we work toward a NPDES permit that both parties can support. In fact, I would like to suggest setting up a face-to-face meeting when appropriate to discuss the draft permit and EPA observations. It is also our intent to turn around our review and comments on the PPP as soon as possible.

Please let me know if you have any questions.

Sincerely,

Kurt A. Thiede
Chief of Staff
U.S. EPA, Region 5
Office of the Regional Administrator
77 W Jackson Blvd
Chicago, IL 60604
Email: thiede.kurt@epa.gov
Office: (312) 886-6620

Appendix B

Comments on Draft Permit Read Aloud to MPCA

The text highlighted in blue indicates things Kevin Pierard read aloud to MPCA during a conversation between EPA Region 5 and MPCA on April 5, 2018.

Comments and Recommendations to Ensure Consistency with the Clean Water Act

Water Quality Based Effluent Limitations

The draft permit does not include water quality based effluent limitations (WQBELs) except as described in the fact sheet (p. 41) for pH or any other conditions that are as stringent as necessary to ensure compliance with the applicable water quality requirements of Minnesota, or of all affected States, as required of all state programs by CWA Section 402(b), 33 U.S.C. § 1342(b); and 40 C.F.R. §§ 122.4(d), 122.44, and 123.44(c)(1), (8)-(9). Furthermore, the permit includes technology based effluent limitations (TBELs) that are up to a thousand times greater than applicable water quality standards.

1. We acknowledge MPCA's consideration in the draft permit of the federal regulations at 40 C.F.R. Part 440 Subparts G, J, and K, including TBELs. See permit sections 6.10.44 and 8.1.1. However, the permit does not include WQBELs for key parameters and appears to authorize discharges that would exceed Minnesota's federally-approved human health and/or aquatic life water quality standards for mercury, copper, arsenic, cadmium, and zinc. This concern would be resolved if the permit included WQBELs for these parameters.

2. The permit lacks clear narrative effluent limitations such as an unqualified general prohibition on discharges that would cause exceedances of water quality standards (WQS). For example, at paragraph 6.16.4, the permit prohibits toxic discharges, but the condition also includes an exception for situations in which TBELs apply, as is the case with several of the parameters covered by the draft permit. EPA's concern could be resolved if MPCA establishes WQBELs for the authorized discharge and, additionally, removes the qualifying language from paragraph 6.16.4 to clearly prohibit discharges that would cause exceedances of water quality standards.

3. The permitting record does not appear to demonstrate that MPCA considered all the pollutants that were disclosed in the permit application as being present in the proposed discharge when evaluating the need for WQBELs. Thus, in the absence of WQBELs, there is no assurance that the discharge will meet applicable water quality standards. MPCA should, therefore, consider in its analysis all the pollutants that were presented in the application materials as potentially present in the proposed discharge to determine those WQBELs that are needed in the permit. Further, if MPCA considers a particular parameter to be the key to ensuring the facility will meet all applicable water quality standards, e.g., copper at monitoring station WS074 (permit section 6.10.40) or sulfate at monitoring station WS074 (permit section 6.10.31), the permit should include appropriate WQBELs at monitoring location SD001 to ensure that these internal operating limits result in meeting applicable water quality standards at the point where the discharge is sent to receiving waters (see also comment 6, below).

4. The fact sheet's reasonable potential analysis relies on the assumption that data provided in the application are maximum values without taking into account the potential variability and uncertainty in the discharge from this new source. Under the Addendum to the EPA-MPCA National Pollutant Discharge Elimination System (NPDES) Memorandum of Agreement for the GLI (Great Lakes Initiative) (May 8, 2000), Minnesota committed to "use only alternative statistical procedures for deriving PEQ[13] that meet the standard in 40 C.F.R. Part 132, Appendix F, Procedure 5, Paragraph B.2."[14] To resolve EPA's concern, MPCA should consider that the data provided in the application materials are estimates based on assumptions and modeling outputs and ensure that its reasonable potential analysis is consistent with the procedures in 40 C.F.R. Part 132, Appendix F, Procedure 5.

5. At pages 34-37of the fact sheet,[15] MPCA states that its decision that WQBELs are not needed in the permit relies on the operational limits for sulfate (in milligrams per liter) and copper (in micrograms per liter) at internal outfall WS074. Although these limits are set to low values, including the copper limit that is set to the water quality standard, (calculated by assuming a hardness value of 100 mg/L), there is nothing definitive in the permit or supporting information that justifies a conclusion that meeting these operational targets will result in meeting water quality standards for all the parameters in the permit application. This is especially a concern for mercury, for which the standard is specified in nanograms per liter and the pilot study[16] states that the effectiveness of the treatment system to remove mercury is unknown.

6. The permit requires that no sulfate or copper be added to the discharge after monitoring station WS074, but does not prohibit the addition of any other additives between monitoring station WS074 and the final outfalls. In fact, the permit record shows that the effluent of the water treatment system will require mineral addition prior to its discharge to surface waters to reduce the toxicity due to the low ionic strength of the treated water. This raises two concerns. First, the permitting record includes information showing that available local sources of lime contain aluminum in levels that, if used, will likely result in a discharge that exceeds the applicable water quality standard for aluminum.[17] While MPCA appears assured that higher cost lime containing lower levels of aluminum is available and will be used, to ensure that likely variability in the quality and price of available lime does not result in exceedances of the applicable water quality standard, the permit should include a WQBEL for aluminum at the final discharge points or an internal

[13] "Projected Effluent Quality," (PEQ) is described in 40 C.F.R. Part 132, Appendix F, Procedure 5 Paragraph B.2.

[14] "EPA and MPCA agree that MPCA will use only alternative statistical procedures for deriving PEQ that meet the criteria in 40 C.F.R. Part 132, Appendix F, Procedure 5, Paragraph B.2. EPA and MPCA further agree that EPA retains the authority to review any specific statistical procedures Minnesota intends to use for deriving PEQs and to object to permits that have been developed using statistical procedures that do not meet the requirements of Paragraph B.2. of Procedure 5."

[15] "To ensure the WWTS is operating as designed and to remain consistent with the assumptions made in the FEIS, the permit includes an internal performance monitoring point (Station WS074) where an Operating Limit of 10 mg/L sulfate applies. The Operating Limit at WS074 is an enforceable permit limit but is neither a water quality based permit limit nor a technology based permit limit because there is no Reasonable Potential." (p. 35).

[16] See page 43 of "Final Pilot-testing Report" dated June 2013.

[17] See page 31 of the "Final Pilot-testing Report" dated June 2013.

outfall after mineral addition. Second, in light of the potential for whole effluent toxicity to occur, the permit should include whole effluent toxicity limits at the final discharge points or an internal outfall after mineral addition.

7. EPA is concerned that the permit and supporting materials do not include sufficient information to explain how downstream water will be protected consistent with CWA Section 402(b)(5), 33 U.S.C. § 1342(b)(5), based upon the following considerations, including: (1) downstream receiving waters exceed the applicable state and downstream state human health and wildlife water quality standard for mercury, and (2) the pilot study states that the effectiveness of the treatment system to remove mercury is unknown. We note that a downstream tribe, that has "Treatment as a State" and federally approved WQS, has notified EPA that the project is likely to contribute to exceedances of its downstream WQS, including for mercury. MPCA should ensure that its permit will ensure compliance with downstream state WQS.

In summary, EPA recommends that MPCA include WQBELs in the permit for those parameters identified in the application that are expected to be in the discharge and for which Minnesota has applicable WQS. We note that as this is a new discharger, the inclusion of WQBELs for these parameters would be prudent and provide a basis for measuring the performance of the new treatment technology proposed by the applicant. We also note that in subsequent permit cycles, after the facility has achieved full operation, such limits could be modified or deleted if no reasonable potential to exceed water quality standards is demonstrated.

Effluent Limitations Guideline Calculation

The draft permit does not include all the requirements of 40 C.F.R. 440, Subparts G, J, and K that apply to this proposed project, including a restriction on discharge volume that is in conformance with 40 C.F.R. § 440.104(b)(2)(i) and that is equivalent to the annual net precipitation for the site.

Permit sections starting at 6.10.1 include a formula that retrospectively calculates the allowable discharge flow and includes a "carryover" amount defined as "the difference between the allowable annual discharge volume and the actual volume discharged" which acts as a "credit" that the permittee is allowed to apply to the following calendar year. This "carry over credit" appears to be in contradiction to the applicable regulatory definitions of "annual precipitation," "annual evaporation," and "mine drainage" at 40 C.F.R. § 440.132(b), (h). We recommend setting a numeric limit on flow, including this limit in the permit, and ensuring that it is consistent with 40 C.F.R. § 440.104(b)(2)(i).

In addition, we recommend that MPCA consider the applicability of – and inclusion of – effluent limitations contained in 40 C.F.R. § 440.12, and 40 C.F.R. Part 440, subpart A (iron ore), as the project discharge could include legacy pollutants.

Permit Enforceability Concerns

MPCA should address the following concerns.

1. The permit as written may preclude enforcement per CWA Section 402(k), 33 U.S.C. § 1342(k), for pollutants disclosed during the application process but for which there are no limitations, or for water quality standards excursions where the limitation provided in the permit appears to be greater than the applicable state water quality criterion.

2. The permit contains "operating limits" on an internal outfall that may not be enforceable by EPA, citizens, and potentially MPCA and, thus, may be ineffective at protecting water quality under the Clean Water Act (see 40 C.F.R. §§ 122.4(a), (d)). Specifically, the permit includes an internal outfall operating "target" and "limit" for sulfate based on a voluntary commitment by PolyMet to meet a 10 mg/L sulfate limit (permit sections 6.10.34-35) and an internal operating "limit" for copper that MPCA states will ensure compliance with the chronic water quality standard for copper (permit section 6.10.43). We understand that MPCA's authority to enforce such a provision may rest on state authority, outside the scope of the CWA. MPCA should revise the permit as necessary to ensure that all NPDES requirements are enforceable under the CWA.

   Additionally, the internal "operating limit" for copper, at 9.3 micrograms per liter at permit section 6.10.43, is equivalent to the water quality criterion for copper. However, permit section 6.10.44 appears to authorize higher discharge concentration for copper, based on the TBEL that appears to apply at outfall SD001 (permit section 8.1.1). This creates a conflict as to which limit is applicable and enforceable against the permittee. MPCA should revise the permit to include a WQBEL for copper.

3. MPCA plans to transfer the administratively continued, expired Cliffs Erie, LLC permit (and associated enforcement documents) for the existing tailings basin to an affiliated corporate entity of PolyMet. It appears that this arrangement could result in the permittee holding multiple permits covering the same discharge for some time after the effective date of the NorthMet permit. This creates confusion over which discharges are covered by each permit and may complicate or preclude enforcement of permit requirements under either permit, for example if legacy pollutants do not attenuate as predicted (permit section 6.10.45).

   Additionally, the Permit Fact Sheet (p. 17) acknowledges continuing seep discharges from the tailing basin. As such, the draft permit and/or supporting documentation should clearly assign responsibility for seep discharges by specifying those applicable portions of the Cliffs Erie, LLC permit (MN0054089), the Cliffs Erie, LLC Consent Decree with MPCA, and the draft NorthMet permit. Specifically, the permit should include: (a) a list of known seeps (including coordinates and/or sections) that are authorized to discharge from the tailings basin, (b) a map identifying seeps and their relationship to the planned containment system, (c) monitoring and applicable limits for these seeps, because, as noted in the fact sheet (p. 17), seep discharges "contributed to exceedances of permit effluent limitations established in the NPDES/SDS permit," and (d) appropriate interim authorization, limits, and requirements for tailings basin seeps until such a time as seeps are fully contained and cease to reach surface waters.

4. MPCA plans to issue general permit coverages for construction stormwater discharges prior to commencement of construction. Neither the draft individual permit, nor any supporting documentation clearly delineates what activities are excluded from coverage under a general permit. Further, the stormwater general permit would authorize discharge from the draining of over 900 acres of wetlands, which are dominated by peat bogs. This activity is expected to release significant amounts of mercury into downstream navigable waters. While MPCA has acknowledged and addressed such discharges in its peat mining permits (and in verbal comments regarding this project), nothing in the permitting record demonstrates that this issue has been addressed or even considered. There is no provision in the construction stormwater general permit for addressing specific water quality standards issues. Thus, the draft permit (and associated permitting scheme) appears to leave mercury from this aspect of the project wholly unregulated. We suggest identifying what is intended to be covered under the stormwater general permit and evaluate whether there is reasonable potential for discharges from activities covered under the stormwater general permit to cause or contribute to excursions from water quality standards. If there is such reasonable potential, coverage under the stormwater general permit would not be appropriate. Rather this discharge, with appropriate WQBELs, could be covered under the NorthMet permit or another individual permit.

5. Permit section 6.10.17 does not allow the permittee to discharge any process wastewater from the mine site to the surface waters. However, it is not clear how compliance with this condition will be evaluated. Under 40 C.F.R. § 122.44(i), NPDES permits must include monitoring requirements "to assure compliance with permit limitations," which include, among other things, "the mass (or other measurement specified in the permit) of each pollutant limited in the permit" and "the volume of effluent discharged from each outfall." We recommend that the permit include monitoring requirements and conditions against which compliance can be objectively measured. We have similar concerns with other provisions at permit sections 6.10.26, 6.10.78, 6.11.2, 6.11.9, 6.12.2, and 6.15.11.

Decision Making Procedures

The draft permit states that certain plans, reports, and other actions are effective parts of the permit upon submittal by the permittee, making them de facto permit modifications that, in some instances, are likely to be major modifications subject to 40 C.F.R. § 122.62 (for example, see permit section 6.10.38). EPA is concerned that the permit allows both the permittee and MPCA to modify the permit without following the public process for major permit modifications under 40 C.F.R. § 122.62. Permit modifications that do not follow federal regulations may be unenforceable, may cause confusion for regulators and public over what is covered by the permit, and therefore would not ensure compliance with the CWA (see 40 C.F.R. § 122.4(a)).

Although MPCA may wish to require the permittee to undertake immediate corrective action in appropriate circumstances, EPA recommends that MPCA eliminate those permit provisions that make permittee-submitted plans, reports, and other actions immediately-effective parts of the permit. We recommend that, instead, MPCA employ appropriate enforcement responses and its authority to modify permits under Minn. R. 7001.0170 and 40 C.F.R. § 122.62, as necessary.

Other Recommendations

EPA recommends that MPCA consider and address the following comments to improve the clarity and accuracy of the permit.

1. The draft permit contains no limits for CBOD, TSS, pH, fecal, percent BOD/TSS reductions at the sewage treatment stabilization pond internal waste stream monitoring location WS009. Also, the permit contains no limits for CBOD, fecal coliform, or percent BOD/TSS reductions at Outfall SD001. We also note that there does not appear to be a reasonable potential discussion regarding the stabilization pond. MPCA should evaluate whether effluent from the stabilization pond will cause or contribute to excursions from water quality standards. We also recommend including reporting requirements, such as weekly maintenance observations, for the stabilization pond.

2. The permit (at p. 9 and Table 2.1) states that the WWTS discharge will be distributed to various tributaries to minimize hydrologic or ecologic impacts, but the permit does not clearly describe the relationship between the flow in these outfalls and the allowable discharge (permit section 6.10.1 - 6.10.9). MPCA should include provisions in the permit that show how the permittee and MPCA will determine the distribution of flows to Outfalls SD002-SD0011.

3. The permit (at p. 11) discusses the "controlled discharge" from the stabilization pond to the floatation tailings basin (FTB). The permit should explain how the controls on this discharge will function as enforceable requirements of the permit.

4. Permit section 6.10.12 does not allow cells 2E and 1E to be combined until the floatation tailings basin seepage collection system is "fully operating" but it is not clear how this term is defined. MPCA should define "fully operating" to ensure that these permit requirements can be adequately monitored and enforced.

5. Permit section 6.10.27 requires the permittee to maintain a system of paired monitoring wells and piezometers (one internal and one external to the FTB seepage containment system). If these are established monitoring points already included in the permit, MPCA should include references to the monitoring numbers here. If these monitoring points have not yet been established, MPCA should create and include them in the monitoring table along with the type and frequency of data collection.

6. Permit section 6.10.26 says "Direct discharge to surface waters from the FTB Seepage Containment System is prohibited." It is unclear to EPA how MPCA would implement the prohibition of "direct discharge." EPA recommends that the permit be clarified to prohibit any "discharge of pollutants to surface waters" consistent with the Clean Water Act.

7. Permit section 6.10.49 requires sampling at SW003, SW005, SW006, SW007, and SW020 to begin 18-months following initial operation of the WWTS. MPCA should

begin sampling upon permit issuance so that a baseline can be established at these locations.

8. Permit section 6.11.11 prohibits the discharge of PCBs. As this is a legacy mine site, we recommend that MPCA work with the permittee to determine whether the site contains PCBs. If it is determined that the site does not contain PCBs, MPCA should have the permittee certify this finding. Similarly, if PCBs are present on site, then MPCA should revise the permit to include monitoring requirements to evaluate compliance with the prohibition.

9. We recommend that the permit include at the beginning (for example, p. 1) a citation to the federal and state authorities pursuant to which the discharges from the facility are allowed.

10. There are several references in the permit and fact sheet where the reader is directed to the permit application for more information. For example, one reference to the 3d volume of the October 2017 permit application references a document over 500 pages long (see permit p. 8). We suggest including a location for references such as these throughout the permit to facilitate the reader's ability to access the information.

11. Permit section 6.10.21 allows "agency pre-approved adaptive management or mitigation measures." We recommend including a link or reference to where these measures can be located.

12. The maps and figures in the permit and fact sheet are often difficult to read. If clearer versions of these cannot be included, we suggest including a reference to where the original maps and figures can be viewed in hard copy or on line.