Message

From: Pierard, Kevin [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=CBB681854E4E41C99B312C5516884D5F-KPIERARD]
Sent: 11/12/2015 6:23:18 PM
To: Foss, Ann (MPCA) [ann.foss@state.mn.us]; Rebecca Flood (rebecca.flood@state.mn.us) [rebecca.flood@state.mn.us]
CC: Hyde, Tinka [hyde.tinka@epa.gov]
Subject: FW: Report - Evaluation of a Field-Based Aquatic Life Benchmark for Specific Conductance in Northeast Minnesota
Attachments: JohnsonMNConductivityEvaluationRpt(Nov. 2015).pdf; ATT00001.htm; AttachmentA_Table1_InvertebrateData.pdf; ATT00002.htm; AttachmentB_MPCA_Draft_SLRStressorIDRpt.pdf; ATT00003.htm

Rebecca – this is the document Tinka referred to on today's directors call.

From: Hyde, Tinka
Sent: Tuesday, November 10, 2015 1:37 PM
To: Holst, Linda <holst.linda@epa.gov>; Pfeifer, David <pfeifer.david@epa.gov>
Cc: Swenson, Peter <swenson.peter@epa.gov>; Pierard, Kevin <pierard.kevin@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>
Subject: Fwd: Report - Evaluation of a Field-Based Aquatic Life Benchmark for Specific Conductance in Northeast Minnesota

FYI

Sent from my iPhone

Begin forwarded message:

From: "Paula Maccabee" <pmaccabee@justchangelaw.com>
To: "Hyde, Tinka" <hyde.tinka@epa.gov>, "McKim, Krista" <mckim.krista@epa.gov>, "Walts, Alan" <walts.alan@epa.gov>, "Sedlacek, Michael" <Sedlacek.Michael@epa.gov>
Cc: "Wester, Barbara" <wester.barbara@epa.gov>, "Kenney, Thomas" <kenney.thomas@epa.gov>
Subject: Report - Evaluation of a Field-Based Aquatic Life Benchmark for Specific Conductance in Northeast Minnesota

Dear Ms. Hyde, Ms. McKim, Mr. Walts, Mr. Sedlacek,

Attached with this email, please find a report, *An Evaluation of a Field-Based Aquatic Life Benchmark for Specific Conductance in Northeast Minnesota*, prepared by Bruce Johnson and Maureen Johnson for WaterLegacy, along with its attachments. This report reflects many months of work analyzing data from the Copper-Nickel study to the present to apply the U.S. Environmental Protection Agency's *Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams* to specific ecoregions in Northeastern Minnesota where mining pollution has resulted in stressors for aquatic life. Some of the data in this report was provided in WaterLegacy's presentation to the EPA at the Lake Superior Collaborative Meeting in Ashland, Wisconsin,on June 9, 2015.

The Johnsons' *Specific Conductance in Northeast Minnesota* report addresses concerns that tribal staff and environmental advocates have raised for years about the adverse impacts on benthic invertebrates and the aquatic food chain resulting from specific conductivity pollution. For several years, WaterLegacy has requested that the State of Minnesota review available data and develop a numeric standard to protect aquatic life from the stressor of specific conductance. The compelling need for Minnesota regulators to analyze and limit specific conductivity to prevent toxicity to aquatic life and degradation of aquatic uses has

been raised in our Triennial Review requests for rulemaking, numerous permit comments and in WaterLegacy's Petition for Withdrawal of Program Delegation from the State of Minnesota for NPDES Permits Related to Mining Projects. We recognize that, even though mining permits have not protected aquatic life from ionic pollution, Minnesota Pollution Control Agency and Minnesota Department of Natural Resources scientists have led or collaborated in various important research efforts related to specific conductivity and impacts on aquatic life, several of which are described in the report.

The *Specific Conductance in Northeast Minnesota* report provides a foundation to apply the EPA specific conductivity benchmark protocols to Minnesota. The report describes how mining pollution has resulted in increased specific conductivity and decreased benthic invertebrate richness in various Northeast Minnesota waters. The report recommends setting limits for specific conductivity in order to protect aquatic life in Northeast Minnesota ecoregions, which limits are likely to be at least as stringent as the EPA's 300 µS/cm benchmark to protect aquatic life in Appalachia. The report also specifies the type of water chemistry and macroinvertebrate data that should be collected prior to permitting and the way in which monitoring and bioassays should be conducted if a facility is permitted to ensure that specific conductivity does not impair aquatic life.

This *Specific Conductance in Northeast Minnesota* report is also salient now in reviewing the PolyMet NorthMet open-pit copper mine project. The PolyMet Final EIS lacks any analysis of specific conductivity in background waters, and lacks any modeling of specific conductivity in seepage and/or intentional discharge from the mine pits, waste rock piles, tailings wastes or hydrometallurgical wastes, even though both sulfate and the compounds (such as lime) proposed by PolyMet to mitigate acid mining pollution increase specific conductivity. The PolyMet Final EIS also contains limited and poor quality information on macroinvertebrate communities, none of which would provide sufficient background for regulators to evaluate if PolyMet seepage and releases were diminishing benthic invertebrate richness and impairing aquatic uses. WaterLegacy's official comments to state and federal Co-Lead and Cooperating agencies regarding the PolyMet Final EIS will elaborate on these concerns.

Minnesota's mining discharge history and data on aquatic communities in Northeast Minnesota ecoregions demonstrates that specific conductivity increases resulting from the PolyMet project are likely to result in significant degradation of the aquatic ecosystem and violation of downstream water quality standards that protect aquatic life. WaterLegacy's official comments to the appropriate state and federal agencies regarding the PolyMet Section 404 Record of Decision and Section 401 Certification will elaborate on these concerns.

Please let me know if you have any questions about this report.

Best regards,
Paula

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Advocacy Director/Counsel for WaterLegacy

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