Great Lakes
Legislative Caucus

2017 Annual Meeting of the Great Lakes Legislative Caucus

Radisson Admiral Hotel Toronto-Harbourfront
Toronto, Ontario
September 22-23, 2017

Resolution on the Risk Posed to Great Lakes Basin Water Resources and the Health of Residents by Sulfide-Ore Copper Mining

WHEREAS, restoration and protection of the Great Lakes requires maintenance of healthy watersheds and clean water in the tributaries to the Great Lakes; and

WHEREAS, sulfide-ore copper mining is a type of hardrock mining; and

WHEREAS, data from the U.S. Environmental Protection Agency (EPA) Toxic Release Inventory show hardrock mining, including sulfide-ore copper mining, to be the nation's largest toxic polluter;[1] and

WHEREAS, the EPA estimates that hardrock mining is responsible for the contamination of streams in the headwaters of more than 40% of watersheds in the western United States;[2] and

WHEREAS, even in arid places, sulfide-ore copper mining has a record of long-lasting water pollution, despite environmental review document predictions to the contrary;[3, 4, 5, 6, 7, 8, 9] and

WHEREAS, no sulfide-ore copper mine has operated and closed without polluting surrounding surface waters and groundwater;[10, 11, 12, 13] and

WHEREAS, sulfide-ore copper mining water pollution in the Duluth Complex contains sulfates and heavy metals such as cadmium, lead, arsenic, copper, nickel, and mercury, which are toxic to aquatic life and harmful to human health; and

WHEREAS, sulfate pollution contributes to the formation and bioaccumulation of methylmercury in aquatic food chains,[14] such that though concentrations of total mercury and methylmercury in water may be deemed safe for human consumption as drinking water, methylmercury concentration levels in fish – especially sought-after game fish species such as bass, walleye, northern pike, and lake trout – may reach levels up to 106x greater than in the water column;[15] and

WHEREAS, aquatic wildlife and human adults whose diet is heavy in fish also are likely to receive harmful levels of methylmercury;[16] and

WHEREAS, nursing infants who have never eaten fish still receive methylmercury through their mothers' breast milk;[17] and

WHEREAS, fetal blood appears to concentrate methylmercury to levels 1.7 times higher than maternal blood;[18] and

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WHEREAS, methylmercury is a potent developmental neurotoxin to which the human fetus, nursing babies, and young children are most at risk, such that even small amounts of mercury damage developing brains;[19] and

WHEREAS, a Minnesota Department of Health study found that 10% of newborns in the Minnesota portion of the Lake Superior basin have blood methylmercury levels greater than 5.8 µg/L (the U.S. EPA Reference Dose for methylmercury), a level associated with loss of IQ;[20] and

WHEREAS, sulfate and other pollutants generated by sulfide-ore copper mining is projected to continue for centuries;[21] now therefore be it

RESOLVED, that the Great Lakes Legislative Caucus recognizes the environmental challenges posed by proposed sulfide-ore copper mining in the St. Louis River Watershed and elsewhere in the Great Lakes Basin to human health and the restoration and protection of the Great Lakes; and be it further

RESOLVED, that this resolution be submitted to appropriate state, provincial, and federal officials.

Adopted on September 23, 2017.

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[1] EPA Office of Inspector General. March 31, 2004. Nationwide Identification of Hardrock Mining Sites. Report No. 2004-P-00005 ("EPA, 2004"). In 2000, the industry released 3.4 billion pounds of toxics, or 47 percent of all toxic waste released by all U.S. industries for the year, combined.

[2] EPA Office of Water. Liquid Assets 2000: America's Water Resources at a Turning Point. EPA-840-B-00-001.

[3] *Id.*

[4] Earthworks. "U.S. Copper Porphyry Mines: The Track Record of Water Quality Impacts Resulting from Pipeline Spills, Tailings Failures and Water Collection and Treatment Failures." July 2012.

[5] Earthworks. "Predicting Water Quality Problems at Hardrock Mines: A Failure of Science, Oversight, and Good Practice." December 2006.

[6] Robertson, A. M. 2011. Mine Waste Management in the 21st Century: Challenges & Solutions Beyond Incremental Changes.

[7] Earthworks. "False Promises: Water Quality Predictions Gone Wrong; Large Mines and Water Pollution. 6 pp.

[8] Earthworks. 2004. "Hardrock Mining: Risks to Community Health. 47 pp.

[9] Earthworks. 2013. "Polluting the Future: How mining companies are contaminating our nation's waters in perpetuity. 52 pp.

[10] Wisconsin DNR. April 2012. Surface Water Quality Assessment of the Flambeau Mine Site.

[11] EPA 6-25-2014 approval letter of Wisconsin's 2012 303d list. See p. 66, at bottom.

[12] Kuipers & Maest. 2006. Comparison of Predicted and Actual Water Quality at Hardrock Mines. 228 pp.

[13] Stillwater Mining Company form 10-K Feb. 2-2011 and Stillwater Mining Company form 10-K Feb. 16-2017.

[14] EPA. 2006. Final Report_Hg Transport & Fate Throughout a Watershed.

[15] Scudder Eikenberry, B. C., K. Rive-Murray, C. D. Knightes, C. A. Hourney, L. C. Chasar, M. E. Brigham and P. M. Bradley. 2015. Optimizing fisher sampling for fish–mercury bioaccumulation factors. Chemosphere 135: 467-473.

[16] Minnesota Department of Health: Health Risks of Eating Contaminated Fish. Via http://www.health.state.mn.us/divs/eh/fish/faq.html.

[17] Mead, M. N. Contaminants in Human Milk; Weighing the Risks against the Benefits of Breastfeeding. Environmental Health Perspectives 2008 116:10 pp. 427-434.

[18] Stern AH, Smith AE. 2003. An assessment of the cord blood- maternal blood methylmercury ratio: implications for risk assessment. Environ Health Perspectives 111:1465–1470.

[19] Trasande, L., et al., Public Health and Economic Consequences of Mercury Toxicity to the Developing Brain. Environ. Health Perspectives. 2005 May.

[20] Minnesota Department of Health. Mercury Levels in Blood from Newborns in the Lake Superior Basin. Final Report. Nov. 2011.

[21] MN DNR (PolyMet/NorthMet SDEIS), page 166 [a.k.a. 3-5]; *and* FEIS, page 101 [a.k.a. ES-35].