A Permanent Problem.

How PolyMet would subject communities to permanently polluted water, and be a climate disaster.

Toxic Water: Forever and Upstream. "*Water scarcity is one of the greatest challenges of our time.*"^[1] - World Economic Forum

PolyMet admits it would create toxic, permanently polluted water. Hundreds of millions of gallons of it. The company's own "best case scenario" is that it would release <u>16 million gallons</u> of this toxic water into our groundwater *per year*.^[2]

Groundwater is one of our most valuable resources.^[4] - USGS "While we are so busy worrying about the water that we can see, the water that we can't see, the groundwater, is quietly disappearing." ^[5] - Dr. Jay Famiglietti NASA **Permanent Treatment:** The rest of it? PolyMet *hopes* to capture and actively pump it -- millions of gallons of toxic water -- back into the basin <u>forever</u>, with pumps that need to be powered and maintained continuously.^[3]

Toxins include heavy metals, carcinogens, and neurotoxins. Once these toxins are released into the environment there is no way to clean them up.

Future heavy rain events increase the risk of catastrophic dam failure upstream of communities along the St. Louis River.

An "inherently unstable" dam design to permanently store 225 million tons of toxic mine pollution. ^[6, 7]

Earthen dam built from tailings

250 Feet Tall

Unstable tailings and slimes

This type of "upstream" dam is the cheapest and least safe, and is increasingly banned around the world due to catastrophic failures. In other words, this obsolete dam design is destined to fail.

History couldn't be clearer — when profits are gone, companies like Glencore cut and run. At that point, we would be left with the permanent pollution — billions of gallons of it.

Climate: Our climate can't afford a PolyMet.

Minnesota's peatlands took millenia to form, and their destruction would be permanent.



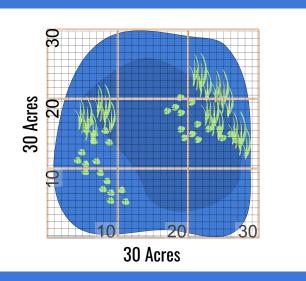
Photo by Rob Levine/ Minnesota Center for Environmental Advocacy

"The protection and restoration of peatlands is vital in the transition towards a low-carbon economy."— IUCN^[9]

From a climate perspective, peatlands are the most essential terrestrial ecosystem. Peatlands cover 3% of the world's land, but store one-third of all soil carbon.^[10] PolyMet proposes to destroy almost 1,000 acres of centuries-old wetlands directly, and another 6,500 acres indirectly.^[11]

This would be a climate disaster. Destroying and draining thousands of acres of peatlands in Minnesota's Arrowhead would release 2,700,000 metric tons of $CO_2^{[12]}$ in addition to the over 700,000 metric tons of greenhouse gas pollution PolyMet would produce every year.^[13]

That's **705** football fields of wetlands destruction



When cost/benefit analyses fail to include the value of clean air and water, the conclusions always benefit the mining companies, not the public good. An economic analysis that includes the true human and environmental costs would dictate that we mine less and recycle more. Copper is the world's most reusable resource, and a trillion pounds of it are already above ground.^[14]

<u>Water is in crisis, not copper</u>: "How many more years will water scarcity be one of World Economic Forum's top global risks before the world starts valuing water?"^[15]

Ignored/Circumvented:

- Treaty Rights
- Endangered Species Act
- Weeks Act prohibiting open pit mining in the Superior National Forest
- Health Professionals' request for a health study
- Calls for a contested case hearing
- Consultant concerns about dam safety
- U.S. EPA concerns about water pollution
- Risk to Minnesota taxpayers

- Increasingly automated industry
- Climate change in 500-year modeling
- \$ multimillion clean-up effort of legacy pollution in the St. Louis River estuary
- The greatest number of public comments in opposition in MN agency history
- Glencore, 72% owner of PolyMet, not listed on permits
- PolyMet expansion plans

We support working together for economic-development solutions that are by Minnesotans and for Minnesotans — and that leave us with water fit to drink.



REFERENCES

1. https://www.weforum.org/agenda/2019/03/water-scarcity-one-of-the-greatest-challenges-of-our-time

2. PolyMet FEIS p. 5-179

https://files.dnr.state.mn.us/input/environmentalreview/polymet/feis/009_chapter_5_environmental_consequences.pdf

- 3. PolyMet FEIS p. 5-183
- 4. US Geological Survey, US Department of the Interior, Aquifers and Groundwater.
- https://www.usgs.gov/special-topic/water-science-school/science/aquifers-and-groundwater?qt-science_center_objects=0#qt-science_center_objects
- 5. Dr. Jay Famiglietti, senior water scientist at NASA's Jet Propulsion Laboratory
- https://www.fasterthanexpected.com/2018/07/19/the-water-wars-of-arizona/
- 6. DNR's consultants: http://timberjay.com/stories/groups-seek-dnr-stay-on-polymet-dam-permit,14821
- 7. NorthMet Dam Safety Permit Application: Flotation Tailings Basin, prepared for PolyMet Mining, Inc., Barr Eng'g Co., 1 (May 2017)
- 8. https://www.boreal.org/2019/03/23/191554/army-corps-issues-polymets-final-major-permit
- 9. The International Union for the Conservation of Nature https://www.iucn.org/resources/issues-briefs/peatlands-and-climate-change
- 10.https://www.theguardian.com/environment/2017/jul/28/ultimate-bogs-how-saving-peatlands-could-help-save-the-planet
- 11. PolyMet FEIS page 5-347, 348 (wetlands impacted directly and indirectly)
- 12. Anderson, Jim. et. al. February 2008. "The potential for terrestrial carbon sequestration in Minnesota: a report to the Department of Natural Resources from the Minnesota Terrestrial Carbon Sequestration Initiative." University of Minnesota, p. 7
- 13. PolyMet FEIS page 5-482 (707,342 mtpy CO,e)
- 14. Copper Development Assoc. https://www.copper.org/environment/lifecycle/g_recycl.html
- 15. CEO Water Mandate. https://ceowatermandate.org/posts/water-connected-every-global-risk-face/