Mercury

Many waters in Minnesota are already classified by the Minnesota Pollution Control Agency (MPCA) as "impaired" by high mercury concentrations in fish tissue. Because of this mercury is a pollutant of concern in the Lake Superior Basin, which is where the proposed NorthMet Mining Project would be located. As such the project would be subject to the Great Lakes Initiative standard of 1.3 nanograms per liter (ng/L) for the discharge of mercury to streams and rivers. Existing mercury concentrations in nearby waters typically range between 3.5 to 6.0 ng/L.

How would the NorthMet Mining Project release mercury? And what would be done to avoid or minimize these effects?

The NorthMet Mining Project would release mercury in two ways:

- Ore and waste rock from the NorthMet Deposit contain very small amounts of mercury. Water that comes into contact with ore and waste rock acquires some of that mercury. To address this issue, water that comes into contact with ore and waste rock at the mine site, as well as water used at the processing plant and tailings basin, would be captured and treated to reduce or remove the mercury before being discharged. Such measures would include a wastewater treatment facility at the mine site, a wastewater treatment plant at the processing plant, and water containment systems at the Category 1 waste rock stockpile and tailings basin.
- Some facilities at the processing plant, most notably the autoclave vent and autoclave flash vent, would emit mercury to the air. Air emissions at the processing plant would be controlled by state-of-the-art technology. PolyMet would also monitor air quality and the water quality of surrounding water bodies, to be able to adapt the project to further avoid any mercury effects.

How will the NorthMet Mining Project affect the amount of mercury in the water and air?

The proposed project is predicted to increase mercury concentrations in the Embarrass River by 0.6 ng/L, while decreasing mercury concentrations in the Partridge River by 1.2 ng/L. There would be an overall decrease in mercury concentrations due to water treatment activities that would occur as part of the NorthMet Mining Project. All water treatment methods would be designed to meet the 1.3 ng/L Great Lakes Initiative standard.

Total potential mercury emissions to air are estimated to be 4.6 lbs/year from the plant site; emissions are estimated at less than 1.0 lb/year from the mine site. Mercury emitted to the air would be minimal and would not significantly affect fish in nearby water bodies. All mercury released as a result of the proposed project would be in line with the MPCA's mercury reduction goals.

How were the effects determined?

Mercury releases to water were estimated using laboratory leach test methods and mass balance calculations. Mercury releases to air were predicted using the computer software program AERMOD,

and the MPCA's Air Emissions Risk Analysis methods were used to determine the effects of these air emissions on fish in nearby water bodies.

For more information about mercury that would be released as a result the NorthMet Mining Project and Land Exchange, see the Executive Summary, Sections 4.2.2 (Affected Environment, Water Resources) and 4.2.7 (Affected Environment, Air Quality), Sections 5.2.2 (Environmental Consequences, Water Resources) and 5.2.7 (Environmental Consequences, Air Quality), and Chapter 6 (Cumulative Effects) of the SDEIS. Also, refer to additional Fact Sheets about the NorthMet Mining Project and Land Exchange SDEIS:

1. **What is the Environmental Review Process?**
2. **Effective Commenting**
3. **A Guide to the SDEIS Document**
4. **What's Changed Since the DEIS?**
5. **Project & Land Exchange Overview**
6. **Land Exchange**
7. **Reclamation and Financial Assurance**
8. **Water Quality**
9. **Wetlands**
10. **Air Quality**
11. **Wild Rice**
12. **Mercury**
13. **Threatened & Endangered Species**
14. **Cumulative Effects**
15. **Cultural Resources**
16. **Water Quantity**