

Aitkin County Geology Mining Impact

MINING IN AITKIN

- Talon Metals and their partner Rio Tinto plan to build an underground high sulfide Nickel Copper mine - extracting 8-16 million tonnes of material over a 10 to 20 year period.
- In the process they indicate a need to pump up to 2.3 million gallons of water per day from the mine.
 - Water volume is likely to be much larger since fissures caused by daily blasting were not considered
 - This water is likely contaminated with sulfides as well as other toxic minerals.
 - This water comes from the aquifers above the mined areas, seeping through mine shafts and fissures in the bedrock - draining the aquifers potentially affecting lake and well water levels
- This water must be put someplace
 - What happens when their drainage ditch freezes in the winter?

Geology and hydrology information is from a presentation by Carrie Jennings – an experienced geologist and educator who has studied Aitkin County geology. You can view Carrie Jennings' slide presentation here:

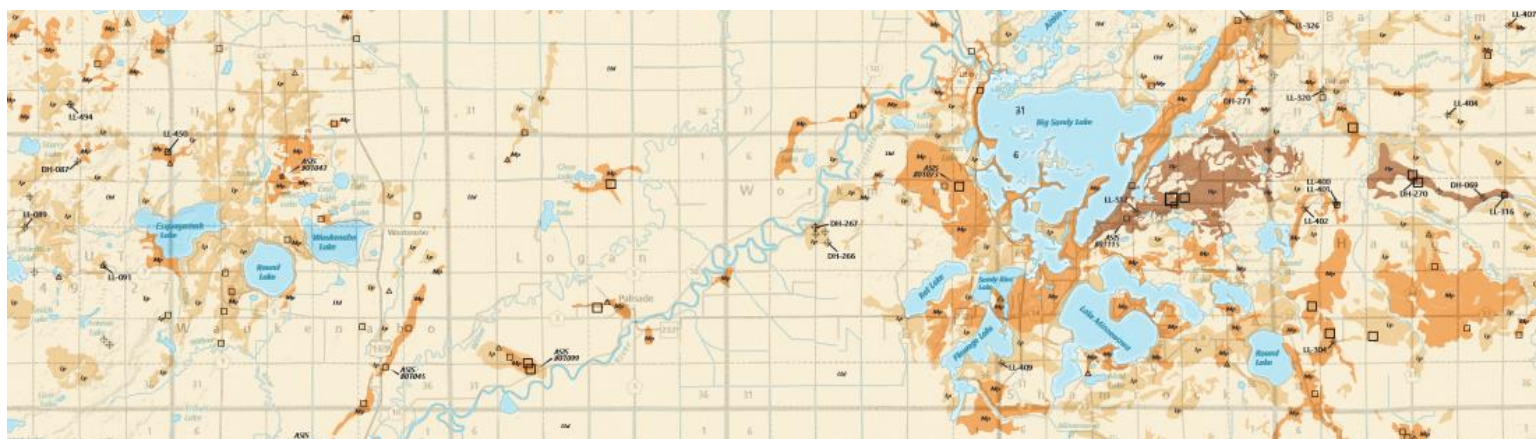
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IMPACT OF MINING ON WATER FLOW

- The area where Talon has mineral leases is situated between two ice lobes, or places where retreating glaciers left their mark.
- These features are underground, but not without consequence for life on the surface.
- The geology of this area is complicated by overlapping ice advances with lobe deposits potentially covered by peat, water, sand and lake sediment along with other glacial sediment.

WHAT WE DON'T KNOW ABOUT WATER FLOW IN THE PROPOSED MINING AREA

- We don't fully understand where water is recharged, what is the flow path, how old is the water, and how water will move through peat and other materials.
- We don't know whether the current sampling strategy adequately addresses the way water is held and altered as it moves through the layers.
- We don't know the impact of high dissolved organic carbon and low pH on movement of metals.
- We don't know how compromised lakes such as Big Sandy and Minnewawa will react.
- Understanding these issues are key to making sure that environmental reviews of projects like the proposed Talon Mine are correctly considered.



Learn more at www.tamarackwateralliance.org

www.tamarackwateralliance.org
waters@tamarackwateralliance.org

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