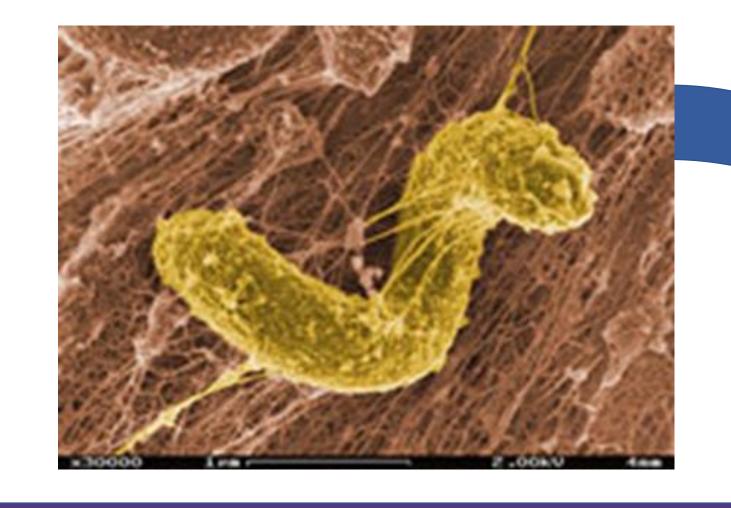# Eliza Van Bibber
Northern Mine Remediation course - 2021

Guillaume Nielsen, Industrial Research Chair in Northern Mine Remediation
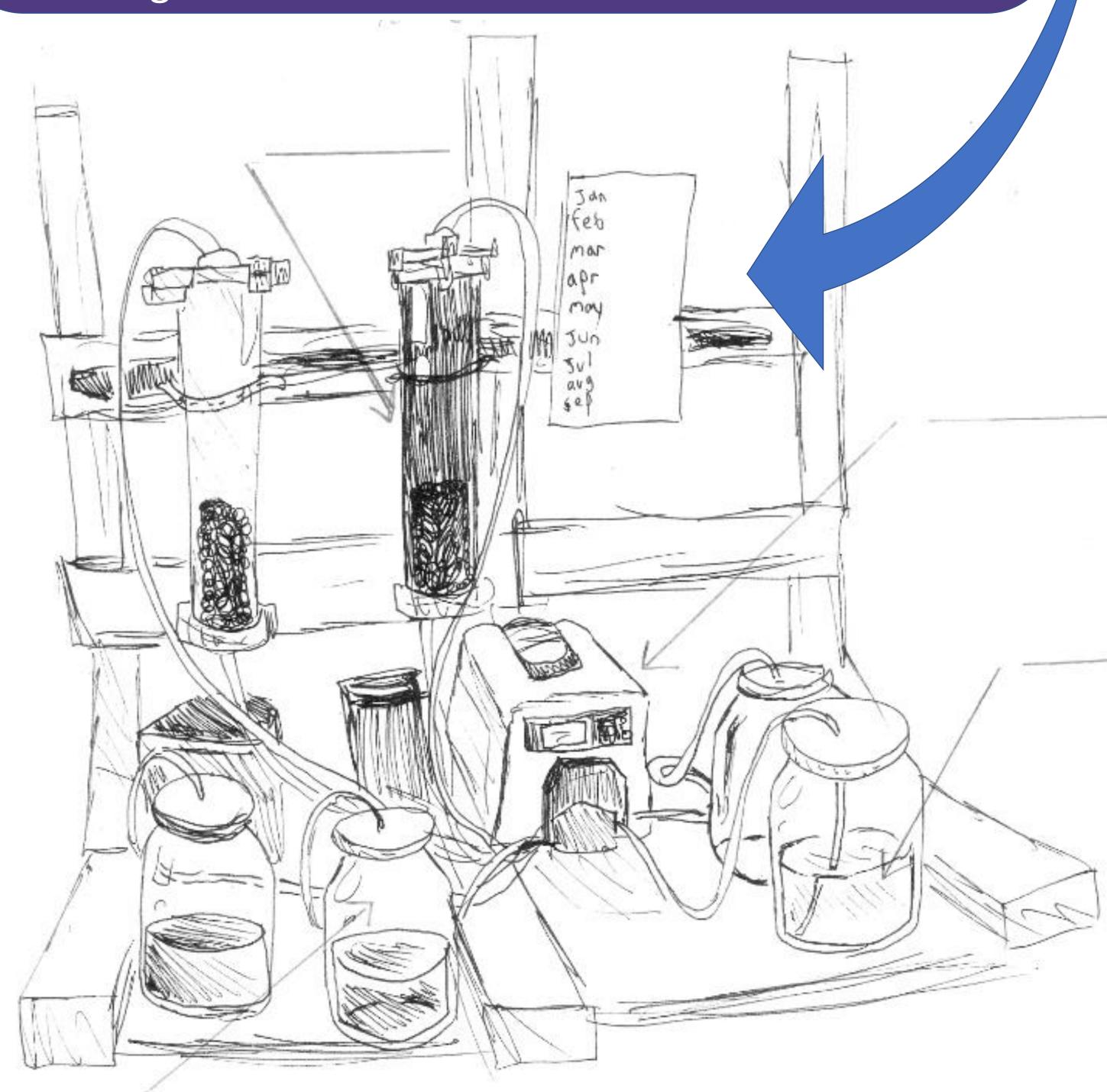
Abstract
Study passive mine water treatment, by using bacteria available at the mine site. Bacteria were used to implement in class bioreactors.

Variables
Bioreactor B1 and B2 were similar columns, except that B1 had an added source of carbon (molasses), which is food for the bacteria.
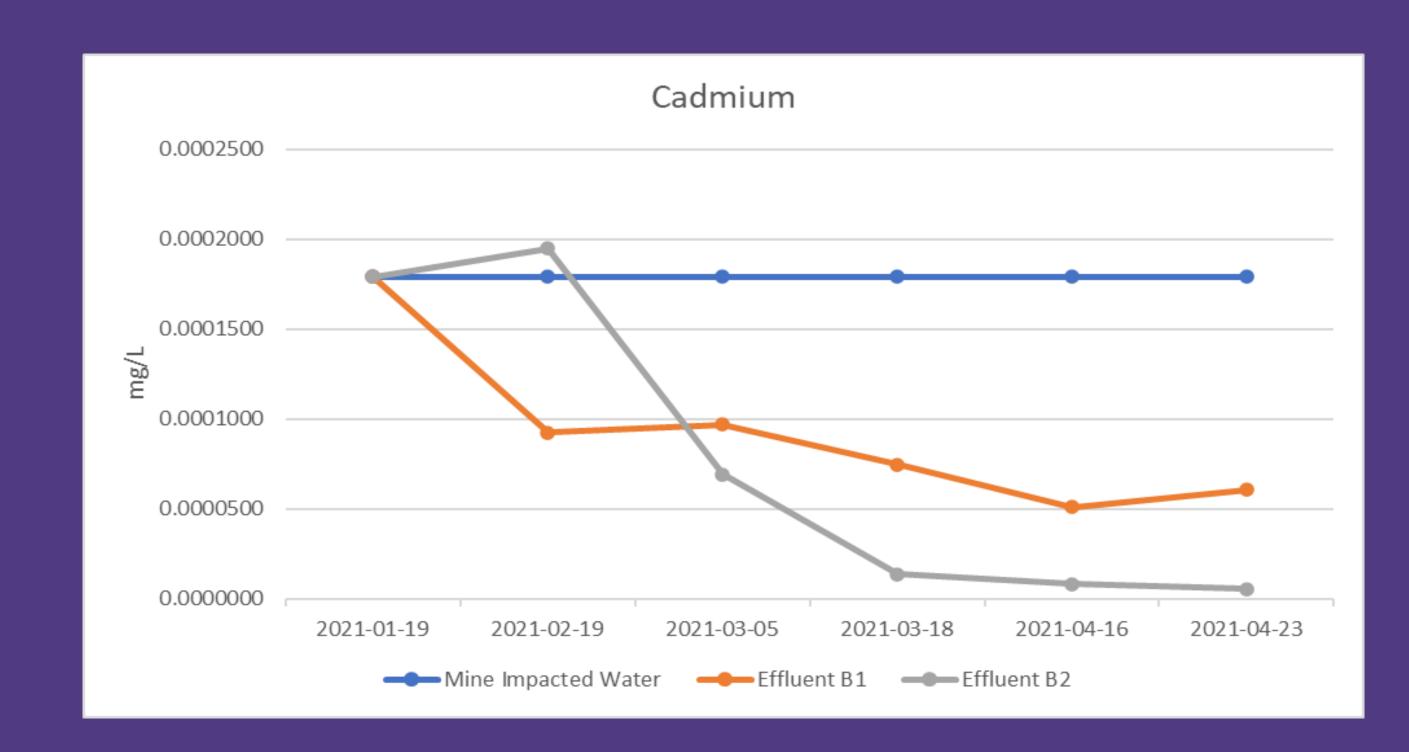
Procedures
- Build two column bioreactors using sulfate reducing bacteria collected at Minto Mine in October 2020.
- Use the bioreactors to remove contaminants from mine impacted water.
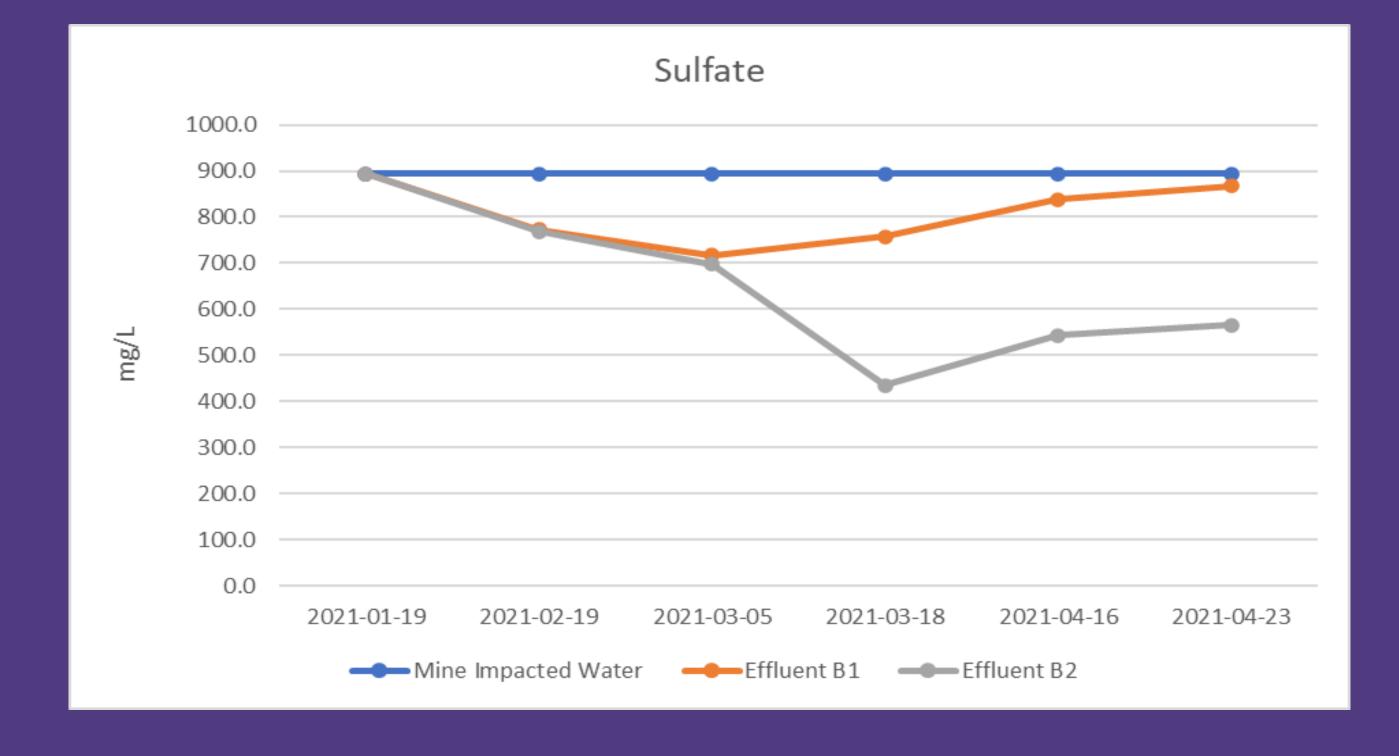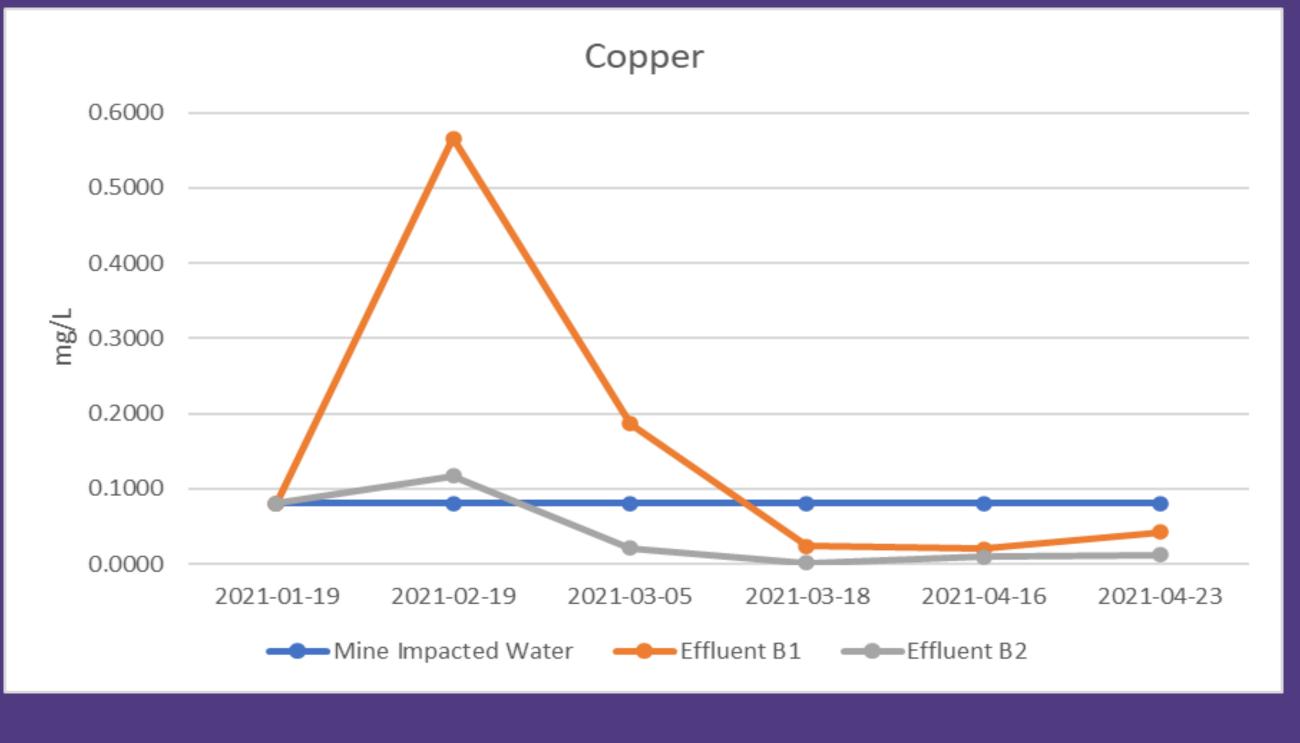- Monitor different parameters in the effluent water during 8 weeks.

Results

Cadmium

Sulfate

Copper

Conclusion
- Bioreactor B1 and B2 are able to remove heavy metals (Cd, Cu) from mine impacted water.
- Bioreactor B2 is better at removing contaminants than bioreactor B1.
- This are promising results for real life implementation, but, as the experiment was conducted at room temperature, would it work the same in cold conditions?