

## Bedrock Aquifer Field Facility (BAFF)

Bedrock aquifers are highly utilized groundwater reservoirs in rural and urban environments, yet they require considerable protection due to the mobility of contaminants, posing risks to fresh water sources. While they are a key factor in the looming global water crisis, they are also poorly understood. Our goal is to raise \$10,000,000 to enhance the Bedrock Aquifer Field Facility to serve as both a research and learning facility and continue as a critical component of the G360 Institute's scientific work.

### Impact Statement:

Groundwater represents 96 percent of available fresh water on the planet and more than 50 percent of the world's population depends on it as their source of drinking water. Contamination of groundwater is a mounting concern. Problems will continue to increase due to rising demands from population, economic and agricultural growth. The time to do something is now!

To our knowledge, there are no other research groups or centres developing and applying methods for fractured rock groundwater monitoring and site characterizations on a comparable resolution and scale anywhere else in the world. This unique facility will serve as an international hub for academic, government, and industry research.



### Goals:

This initiative will result in the structural completion and launch of the Discovery Centre Classroom at the Bedrock Aquifer Field Facility. In addition, cutting edge and modern characterization and monitoring technology sensors will be purchased and installed, including fibre-optics. New boreholes will be drilled to enhance research insights.

By enhancing the facility's capabilities, we are strengthening our ability to solve global water-related issues, which directly impact both our local and international community. Notable benefits are:

- High resolution groundwater resource characterization and monitoring; technology innovation and development
- Enabling novel research on borehole and geomonitring technology
- Providing hands-on experience for undergraduate and graduate studies
- Advancing technology in the field
- Developing field growth and testing
- Increasing awareness of groundwater system science
- Fostering collaborations between the University of Guelph, the City of Guelph, and the private sector both locally and globally

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