

Sustainable groundwater management: Predicting and managing contamination

Record number : OPR-428

Overview

RESEARCH DIRECTION

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Engineering

INFORMATION

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ADMINISTRATIVE UNIT(S)

Faculté de génie
Département de génie chimique et de
génie biotechnologique
Département de génie civil et de génie du
bâtiment

LEVEL(S)

2e cycle
3e cycle

LOCATION(S)

Campus principal

Project Description

One of the most perilous threats to providing safe access to drinking water comes not from the release of industrial contaminants, but from naturally-occurring, geogenic contaminants which are already globally abundant in Earth's soils and sediments. Manganese, arsenic, chromium, uranium, vanadium, and selenium are all common geogenic contaminants. This project will survey critical groundwater resources for native contaminants, a critical step to reduce public exposure and identify vulnerable areas for monitoring and management in order to prevent costly contaminant mobilization. The project includes applying state-of-the-art field techniques to conduct intensive field studies to quantify manganese and co-occurring contaminants within both groundwater and soils/sediments in Southern Quebec. This research will provide valuable insight into the subsurface processes controlling contaminant mobility that can be used to prevent future groundwater contamination from natural sources. The results will provide water managers with valuable information on whether aquifer geology or pedogenic and biogeochemical processes serve as better predictors of susceptibility to natural contamination. Responsibilities will include designing and executing field experiments, analyzing geochemical parameters, and running laboratory experiments.

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Discipline(s) by sector

Sciences naturelles et génie

Génie chimique, Génie civil

Funding offered

Yes

The last update was on 12 March 2024. The University reserves the right to modify its projects without notice.