



Uranium and arsenic in the natural environment

Project summary

Groundwater from several monitoring wells in the Dawson Range area of Yukon shows naturally elevated levels of uranium (U) and arsenic (As) that are above federal water quality guidelines. This project aims to provide an assessment of U and As in this region by compiling available groundwater, surface water, rock, and sediment geochemical data. A better understanding of the origin of U and As and of the conditions leading to their presence in water is useful and can contribute in establishing water quality objectives in this region. It can also provide insight on the chemical behavior of U and As in local rock types that may eventually enter the mine waste stream.



Dawson Range, Yukon
Photo: Elliott Skierszkan

Results

A review of surface water and groundwater chemical analyses confirms that U is naturally elevated in many areas in the Dawson Range because of weathering of crystalline bedrock. Regional U enrichment means that site-specific water quality objectives may be required for industrial projects in the Dawson Range because baseline concentrations exceed federal water quality guidelines. Arsenic enrichment is not present in surface water, and appears limited to groundwater near ore deposits under specific chemical conditions. We have also identified certain chemical environments and mineral and rock types that lead to enrichment of U and As in this region.

What it means for you

Better protection of our water resources relies on robust baseline environmental monitoring. The more knowledge governments, industry, and local people have on uranium and arsenic in the region, the better. That way, we can all make decisions related to project planning, permitting and licencing, and on-going monitoring. Through this project and previous data collected, we know that uranium is naturally elevated in the ground and we want to work collaboratively to understand and reduce the risks associated with uranium in mining development projects.

FOR MORE INFORMATION, PLEASE CONTACT:

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Community partners

- Lorax Environmental Services and UBC - Technical work (Elliott Skierszkan)
- Tr'ondëk Hwëch'in First Nation - Support for project planning and fieldwork.
- The Casino Mining Corporation and Newmont Goldcorp - Site access and environmental monitoring data.
- Selkirk First Nation and White River First Nation – On-going conversations

TO GET THE FULL REPORT, PLEASE VISIT:

<https://yukon.ca/en/water-quality-monitoring#find-water-quality-data>