



# Kotaneelee Baseline Water Assessment

## Project summary

The Kotaneelee region is one of eight oil and gas basins in the territory. Located in the Liard River sub-Basin in southeast Yukon, the region is home to a range of aquatic life. From 1978 to 2012, the Kotaneelee Gas Plant was in operation in the area. In recent years, the region was assessed for potential hydraulic fracturing (fracking).

The Assessment was initiated based on a recommendation by the Yukon Government's Select Committee Regarding the Risks and Benefits of Hydraulic Fracturing. This recommendation aligned with the Government of Yukon's efforts to expand water monitoring programs in the territory

From 2015 to 2018, 94 surface water samples were collected from the Beaver River, Liard River and La Biche Rivers. Eighteen groundwater samples were collected from six monitoring points. This data was analyzed, and findings were published in 2019.



A Government of Yukon staff member collects water samples.

## Results

Overall, water quality varied between and within sampling locations, with season and geology influencing the concentration of many water quality parameters. We found that both groundwater and surface water were similar in pH and hardness (dissolved calcium and magnesium), and most surface water samples collected indicated a calcium-bicarbonate water type. Some samples collected had total suspended solids and nitrate that exceeded the levels listed by the Canadian Council of Ministers of the Environment for the Protection of Freshwater Aquatic Life. These conditions often occur in areas with natural oil and gas deposits.

## What it means for you

Better protection of our water resources relies on robust baseline environmental monitoring. It is important that we have a good understanding of the baseline water quality conditions to inform potential development decisions and assess changes in water quality over time.

Prior to the study, very little was known about water in the region. If development is planned for the region, the assessment found that additional studies and mapping would be necessary, including aquifer mapping and studies on the interaction between surface and groundwater.

Currently, British Columbia and Yukon are working on delivering actions on a transboundary water agreement. Findings from this assessment will support decision-making and stewardship.

### FOR MORE INFORMATION, PLEASE CONTACT:

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### Research Partners

The Government of Yukon led this assessment in partnership and collaboration with various other organizations including:

- Game Guardians from Daylu Dena Council
- Saskatchewan Research Council
- University of Calgary
- Hemmera Envirochem Inc.