

**SCIENTIFIC RESEARCH LICENSE**

LICENSE # 03 017 26N-M

ISSUED TO: Michelle Blade  
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TEAM MEMBERS: J.McKenzie

AFFILIATION: McGill University

TITLE: Assessing Changing Cryohydrogeologic Conditions with Locally-Relevant Landscape Indicators in Nunavut, Canada

**OBJECTIVES OF RESEARCH:**

The research objective is to combine Inuit Qaujimajatuqangit (knowledge and ways of knowing) with groundwater and permafrost science to identify and assess local community-relevant landscape indicators of winter groundwater movement. Winter overland travel primarily consists of snowmobiling and dog sledding, and encountering groundwater springs is a winter overland travel hazard. Utilizing both local community member knowledge and satellite imagery, we document and categorize past and present groundwater spring locations in Nunavut. We then analyze groundwater chemistry, temperature, flow rate, and lithology of the springs. Combined, these results provide an understanding of Nunavut perennial groundwater spring characteristics and enhance predictions of future perennial groundwater spring occurrence in response to climate change. Currently, models of Arctic climate, environmental, and societal change generally do not account for near-surface groundwater processes nor its effects on local community-relevant cryohydrogeologic dynamics. Our research study was co-designed with Inuit and local-community governments and organizations in Nunavut.

**TERMS & CONDITIONS:**

The holder of the license will be bound by the terms and conditions of the Nunavut Impact Review Board Screening Decision Report (NIRB File #25YN076) and the Department of Culture & Heritage archaeological sites terms and conditions. These terms and conditions will form part of this license.

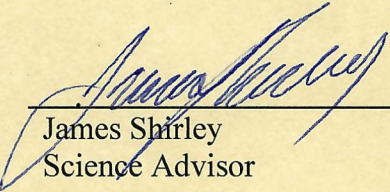
**DATA COLLECTION IN NU:**

DATES: June 06, 2026-December 31, 2026

LOCATION: Arviat, Rankin Inlet, Coral Harbour, Whale Cove

Scientific Research License 03 017 26N-M expires on December 31, 2026

Issued at Iqaluit, NU on June 03, 2026

  
James Shirley  
Science Advisor

