

SCIENTIFIC RESEARCH LICENSE

LICENSE NUMBER 04 001 26R-M

ISSUED TO: Cian Sherwin
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TITLE: Real Ice-January Field Test in Cambridge Bay, Canada

OBJECTIVES OF RESEARCH:

The project explores scientific and engineering methods to preserve and restore Arctic Sea ice, which is vital for both global climate regulation and local community life. In partnership with community members in Cambridge Bay, the research focuses on sea ice thickening using simple, zero-emission devices. The system employs a submersible pump lowered through an auger-drilled hole, drawing seawater to the surface. In the extreme cold, this water freezes rapidly, thickening the ice and flooding surface snow. This increases heat transfer between air and ice, supporting further natural growth. This will be our third Cambridge Bay field study, following the successful completion of our second in July 2025. For the 2026 season, operations will take place on a 1 km² site about 7 km from the hamlet, chosen in consultation with the local HTO and previously used during the 2024/25 trials. Approximately one-quarter of the site will be dedicated to experiments, with the remainder maintained as a control. Key data collected will include water displacement, ice thickness and salinity, and the temperatures of air, snow, and ice. Monitoring will continue until spring breakup to assess the long-term impacts of thickening operations.

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 #25YN033)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: January 10,2026 to August 1,2026

LOCATION: Bay of Iqaluktutiak

Scientific Research License 04 001 26R-M expires on December 31,2026

Issued at Iqaluit, NU on August 26, 2025


James Shirley
Science Advisor

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