Effective June 16, 2006

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NUNAVUT IMALIRIYIN KATIMAYINGI
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

WATER LICENCE
APPLICATION FORM

Application for: (check one)

☒ **New** ☐ **Renewal** ☐ **Amendment** ☐ **Assignment** ☐ **Cancellation**

LICENCE NO:
(for NWB use only)

1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE

Dr. Alain Royer

Phone: 819-821-8000 #62286
Fax: 819-821-7944
e-mail: alain.royer@usherbrooke.ca

2. ADDRESS OF CORPORATE OFFICE IN CANADA (if applicable)

_____

Phone: _____
Fax: _____
e-mail: _____

3. LOCATION OF UNDERTAKING (describe and attach a topographical map, indicating the main components of the Undertaking)

Latitude: (70°0'0" N) Longitude: (73°0'0" W)
NTS Map Sheet No. 37E Scale: 1:250 000 (CONN LAKE, NUNAVUT)

On the attached topographic map, the summit of the Barnes Ice Cap is identified, and will be the main area of our research undertaking. We plan on working on an area of approximately 4 km2 near the summit.

4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)

Please see attached for a quick description of our sampling site and camp setup. The main objective of the project is to conduct fieldwork on the Barnes Ice Cap in ordert o better explain and understand current satellite measurements (passive microwave), in response to glabal scale climate variability and change. The improvement of climate stae variable analysis is now critical to climate models derived from spatial observations.

To meet our objectives, a series of passive microwave measurements of snow/ice will be conducted using a surface based radiometer, which is the same sensor as those installed on current passive microwave satellites. In order to understand the signal, properties of snow and ice will be measured such as density, grain size and temperature.

Shallow holes will be drilled using a manual auger, and measurements will be done vertically using a specially designed instruments already in used in Antarctica.

A complete summary of the project is attached to this application.

5. **TYPE OF PRIMARY UNDERTAKING** (A supplementary questionnaire **must** be submitted with the application for undertakings listed in **"bold"**)

- ☐ **Industrial**
- ☐ **Mining and Milling**(includes exploration/drilling)
- ☐ **Municipal** (includes camps/lodges)
- ☐ Power
- ☐ Agricultural
- ☐ **Conservation**
- ☐ Recreational
- ☒ **Miscellaneous** (describe below):

Scientific research

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings

6. WATER USE

☒ To obtain water
☐ To cross a watercourse
☐ To modify the bed or bank of a watercourse
☐ Flood control
☐ To divert a watercourse
☐ To alter the flow of , or store, water

☐ Other (describe):

7. QUANTITY OF WATER INVOLVED (cubic metres per day including both quantity to be used and quality to be returned to source)

Water use ☒ 100m^3/day or less
☐ Greater than 100m^3/day; if greater, indicate quantities to be used for each purpose (camp, drilling, etc.)

Water returned to source
< 1 m^3/day

8. WASTE (for each type of waste describe: composition, quantity (cubic metres per day), methods of treatment and disposal, etc.)

☐ Sewage
☒ Solid Waste
☐ Hazardous
☐ Bulky Items/Scrap Metal
☐ Waste oil
☐ Greywater
☐ Sludges
☐ Other describe):

All solid waste, mainly from food container will be taken back in their original shipping boxes. given the short period of field work and limited number of people (6 people), the total solid waste should be less that 2m3. All food will be dry food, hence no graywater will be retruned to the environment.

9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name, mailing address and location; attach if necessary)

Land Use Permit

DIAND	☐ Yes	☐ No	If no, date expected _____
Regional Inuit Association	☐ Yes	☐ No	If no, date expected _____
Commissioner	☐ Yes	☐ No	If no, date expected _____

10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES (direct, indirect, cumulative impacts, etc.)

The impact of our project on the environment will be minimal. For each activity component, the following table lists the environmental elements affected and provide a description of those effects:

Principal Activity	Elements Affected	Effects
Fuel usage (generator)	Noise	Minimal
Microwave measurements	None	None
Snow and ice sampling	None	None
Camp	Fuel usage / Waste	Minimal

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Mitigations measures will be taken to limit fuel usage, which is already limited to generator and heaters for the tents. We will take all precautions to avoid gasoline and oil spills, including proper re-fueling methods using sealed pumps, regular checking and maintenance of all exposed fuel hoses and connections and of course use common sense when dealing with fuel. In the unlikely event of an actual fuel spill, we will have mobile fuel spill kits available.

Waste and wastewater will be disposed of through the towns of Iqualuit's waste disposal systems.

NIRB Screening ☐ Yes ☐ No If no, date expected ____

11. INUIT WATER RIGHTS

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement?

No, and the project is not located on Inuit Oned land

If yes, has the applicant entered into an agreement with the Designated Inuit organization to pay compensation for any loss or damage that may be caused by the alteration. If no compensation agreement has been made, how will compensation be determined?

12. CONTRACTORS AND SUB-CONTRACTORS (name, address and functions)

NONE

13. STUDIES UNDERTAKEN TO DATE (list and attach copies of studies, reports, research, etc.)

This is our first project on Barnes Ice Cap

14. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN

Supplementary Questionnaire (where applicable: see section 5) ☐ Yes ☐ No If no, date expected ____

Inuktitut and/or Inuinnaqtun/English Summary of Project ☐ Yes ☐ No If no, date expected ____

Application fee of $30.00 (Payee Receiver General for Canada) ☐ Yes ☐ No If no, date expected ____

Water Use fee of $30.00 (unless otherwise indicated in Section 9 of the *NWT Waters Regulations;* Payee Receiver General for Canada)

☐ Yes ☐ No If no, date expected ____

15. PROPOSED TIME SCHEDULE (unless otherwise indicated, the NWB will consider the application for a five (5) year term)

☐ one year or less (or) ☒ Multi Year

Start Date: 01/2011 Completion Date: 01-2016

Alexandre Langlois	Dr.		février 5, 2010
Name (Print)	Title (Print)	Signature	Date

For Nunavut Water Board office use only

APPLICATION FEE **Amount: $____** **Pay ID No.: ____**

WATER USE DEPOSIT **Amount: $____** **Pay ID No.: ____**