



Application for Water Licence Renewal

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NUNAVUT IMALIRIYIN KATIMAYIT
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT



DOCUMENT MANAGEMENT

Original Document Date: April 2010

DOCUMENT AMENDMENTS

	Description	Date
(1)	Updated for public distribution as separate document from NWB Guide 7	June 2010
(2)	Updated NWB logos and reformatted table to allow rows to break across page	May 2011
(3)		
(4)		
(5)		
(6)		
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APPLICATION FOR WATER LICENCE RENEWAL

Your application may be classified as a **renewal** only if all operations remain the same as previously licensed and only the term of the licence requires change. If your application contemplates:

- a change to the volume of water authorized for use;
- a new activity related to water use or waste disposal;
- a new component related to water use or waste disposal;
- a change in predicted environmental impacts(s); and/or
- a change to any term or condition of the original licence

your application is **NOT** classified as a renewal but rather an amendment and will require submission of an Application for Water Licence Amendment. Licensees applying for combined renewal / amendment are also referred to the Application for Water Licence Amendment.

The applicant is referred to the NWB's Guide 7: Licensee Requirements Following the Issuance of a Water Licence for more information about this application form.

EXISTING LICENCE NO: _3BC-DRA1012

1. LICENSEE CONTACT INFORMATION

Is the licensee the same as that referred to on the existing licence?

☒ Yes ☐ No

If No, a licence assignment must be completed and approved by the NWB. **A renewal will only be issued in the name of the current licensee in the absence of assignment of the licence.**

If the licensee is the same, but the name of the licensee has changed, attach a certificate of name change.

Name:

Melissa Lafrenière

Address:

Department of Geography
D 201 Mackintosh-Corry Hall, Queen's University
Kingston ON K7L3N6

Phone: __613-533-6000 x78720__

Fax: __613-533-6122__

e-mail: __melissa.lafreniere@queensu.ca__

2. LICENSEE REPRESENTATIVE CONTACT INFORMATION – If different from Block 1.

Name:

Address:

Phone: _____

Fax: _____

e-mail: _____

(Attach authorization letter.)

3. NAME OF PROJECT

Is the name of the project the same as that considered in the existing water licence?

☒ **X Yes** ☐ **No**

Indicate the name of the project including the name of the location: High Arctic permafrost landscape stability and water quality , Melville Island/ Drake Point Project

4. LOCATION OF UNDERTAKING

Is the location of the undertaking the same as that considered in the existing water licence?

☒ **X Yes** ☐ **No**

Project Extents

NW: Latitude: (76°35'58.42"N)

Longitude: (109° 9'18.57"W)

NE: Latitude: (76°37'21.94"N)

Longitude: (108°43'40.62"W)

SE: Latitude: (76°28'45.52"N)

Longitude: (108°34'38.98"W)

SW: Latitude: (76°26'23.70"N)

Longitude: (109° 1'46.94"W)

Camp Location(s)

Latitude: (76°32'12.20"N)

Longitude: (108°37'45.84"W)

5. MAP

Are the locations of the main components of the undertaking the same as those considered in the existing licence?

☒ **X Yes** ☐ **No**

Attach a topographical map, indicating the main components of the undertaking.
The attached map derived from the NTS 1:50 000 topographical map, includes an outline of the study area, the location of our camp and air strip.

NTS Map Sheet No.: 79B/08

Map Name: 1:50 000 Sabine Peninsula

6. NATURE OF INTEREST IN THE LAND

Is the nature of the interest in the land the same as that considered in the existing water licence?

☒ **Yes** ☐ **No**

Check any of the following that are applicable to the proposed undertaking (at least one box under the 'Surface' header must be checked).

Sub-surface

☐ Mineral Lease from Nunavut Tunngavik Incorporated (NTI)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Mineral Lease from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

Surface

☐ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Inuit Owned Land (IOL) Authorization from Kitikmeot Inuit Association (KIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Kivalliq Inuit Association (KivIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Qikiqtani Inuit Association (QIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Commissioner's Land Use Authorization
Date (expected date) of issuance: _____ Date of expiry: _____

☒ **Other** The camp will be for less than 100 person days. Thus no land use permit is required

Date (expected date) of issuance: _____ Date of expiry: _____

Is the name of the entity(s) holding authorizations the same as that considered in the existing water licence?

☒ **Yes** ☐ **No**

If No, a licence assignment must be completed and approved by the NWB.

Name of entity(s) holding authorizations:
Department of Geography, Queen's University, Kingston ON

7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION

Is the undertaking located in the same land use planning area as that considered in the existing licence?

☒ Yes ☐ No

Indicate the land use planning area in which the project is located.

☒ North Baffin

☐ South Baffin

☐ Akunnig

☐ Keewatin

☐ Sanikiluaq

☐ West Kitikmeot

Was a land use plan conformity determination required from NPC prior to the issuance of the existing water licence?

☒ Yes ☐ No

If Yes, indicate date issued and attach copy. __January 10, 2008__

Does the proposed renewal change the original NPC conformity determination or the need to obtain one?

☐ Yes ☒ No

If Yes, indicate date issued (or expected) and attach a copy. _ _ _ _ _

If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.

8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION

Was a screening determination required from NIRB prior to the issuance of the existing water licence?

☒ Yes ☐ No

If Yes, indicate date issued and attach copy. __see attached__ February 9, 2010__

Does the proposed renewal change the original NIRB screening determination or the need to obtain one?

☐ Yes ☒ No

If Yes, indicate date issued (or expected) and attach a copy. _____
If No, provide written confirmation from NIRB confirming that a screening determination is not required.

9. DESCRIPTION OF UNDERTAKING

Is the description of the undertaking the same as that considered in the existing water licence?

☒ Yes ☐ No

List and attach plans and drawings or project proposal.

Project proposal:

This research is intended to develop an understanding of the hydrologic and landscape controls on permafrost disturbance. Work involves access to, crossing and sampling of streams. Field research camp composed of temporary tents and up to four people at a given time. Water for camp needs will be collected manually from a lake near camp in 20L containers. Three rivers will be instrumented with electronic sensors to measure flow, level, temperature, and turbidity during the summer. Water samples (1L) will be collected manually from less than 100 sites and used for analysis. All river stations require temporary structures that are located on existing banks. Sampling does not change the flow or discharge hazardous materials.

Project Summary also attached in English and Inuktituk.

10. OPTIONS

Are the alternative methods and locations that were considered to carry out the project the same as those considered in the existing water licence?

☒ Yes ☐ No

Provide a brief explanation of the alternative methods or locations that were considered to carry out the project.

11. CLASSIFICATION OF PRIMARY UNDERTAKING

Is the primary undertaking the same as that considered in the existing water licence?

☒ Yes ☐ No

Indicate the primary classification of undertaking by checking one of the following boxes.

- | | |
|---|---|
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Agricultural |
| <input type="checkbox"/> Mining and Milling (includes exploration/drilling/exploration camps) | |
| <input type="checkbox"/> Conservation | |
| <input type="checkbox"/> Municipal (includes camps/lodges) | <input type="checkbox"/> Recreational |
| <input type="checkbox"/> Power | <input checked="" type="checkbox"/> Miscellaneous (describe below): |
| | Research _____ |

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

12. WATER USE

Is the type(s) of water use(s) the same as that considered in the existing water licence?

☒ Yes ☐ No

Check the appropriate box(s) to indicate the type(s) of water use(s) being applied for.

- | | |
|---|---|
| <input checked="" type="checkbox"/> To obtain water for camp/ municipal purposes | |
| <input type="checkbox"/> To obtain water for industrial purposes | <input type="checkbox"/> To divert a watercourse |
| <input checked="" type="checkbox"/> To cross a watercourse | <input type="checkbox"/> To modify the bed or bank of a watercourse |
| <input type="checkbox"/> To alter the flow of, or store water | <input type="checkbox"/> Flood control |
| <input checked="" type="checkbox"/> Other: _ Sampling water for scientific purposes (dissolved and suspended sediment | |

13. QUANTITY OF WATER INVOLVED

Is the source of water the same as that considered in the existing licence?

X Yes ☐ No

Name of water source(s): _Principle drinking water source will be unnamed lake located at 76°32'9.84"N 108°42'49.98"W

(show location(s) on map)

Is the quality of the water source and its available capacity the same as that considered in the existing licence?

X Yes ☐ No

Describe the quality of the water source(s) and the available capacity(s):_

The lake is a relatively shallow (1-5 m), the water is of neutral pH, and low ionic strength. It is of good quality and the capacity far exceeds our needs. A rough estimate based on surface area (~200m diameter) and estimated depth of 3 m, suggests the lake volume is on the order of 100,000 m³

Is the overall estimated quantity of water to be used the same as that considered in the existing licence?

X Yes ☐ No

Provide the overall estimated quantity of water to be used: We will use less than 20 L of water a day for drinking and cooking, and therefore less and a total of 500 L for the entire duration of our studies. We will collected no more than 100 water samples of 1L in volume, for a total water use of ~600L.

Are the quantity(s) of water to be used from each source the same as those considered in the existing licence?

X Yes ☐ No

Provide the estimated quantity(s) of water to be used from each source: _We will collect < 100 samples from ponds and rivers across the study area. Each water sample is less than 1L in volume. Hence less than 100L from across the entire study area

Are the quantity(s) of water to be used for each purpose the same as those considered in the existing licence?

X Yes ☐ No

Provide the estimated quantities to be used for each purpose (camp, drilling, etc.): __Our camp will use less than 500 L of water, and our sampling will involve collecting less than 100 L. __

Are the method(s) of extraction the same as those considered in the existing licence? **X Yes** ☐ No

Describe the method(s) of extraction: __Water will be collected manually using 1 L plastic bottles for sampling, and 20 L jugs for camp drinking and cooking water__

Are the quantity(s) of water returned to source(s) the same as those considered in the existing licence?

X Yes ☐ No

Estimated quantity(s) of water returned to source(s): __The water will not be returned to the source__ m³/day

Are the quality(s) of water(s) returned to source(s) the same as those considered in the existing licence?

X Yes ☐ No

Describe the quality(s) of water(s) returned to source(s): __Water will be returned to the land by way of grey water from dish washing and cooking, and sewage (human solid and liquid wastes)__

14. WASTE

Are the type(s) of waste(s) to be generated and/ or deposited the same as those considered in the existing licence?

☐ Yes ☐ No

Check the appropriate box(s) to indicate the types of waste(s) generated and deposited.

X Sewage

- ☐ Solid Waste
- ☐ Hazardous
- ☐ Bulky Items/Scrap Metal
- ☐ Animal Waste
- ☐ Other (describe):__

☐ Waste oil

X Greywater

- ☐ Sludges
- ☐ Contaminated soil and/or water

<15 l/day greywater disposed in a shallow pit > 100 m from surface water. Solid sewage waste disposed in shallow pit >100 m from surface water by individual camp members.__

15. QUANTITY AND QUALITY OF WASTE INVOLVED

Are the quantity(s) of the types of wastes involved the same as those considered in the existing licence?

X Yes ☐ No

Are the composition(s) of the types of wastes involved the same as those considered in the existing licence?

X Yes ☐ No

Are the method(s) of treatment for the types of waste involved the same as those considered in the existing

licence?

☒ Yes ☐ No

Are the method(s) of disposal for the types of waste involved the same as those considered in the existing licence?

☒ Yes ☐ No

For each type of waste indicated in Block 14, describe its composition, quantity in cubic meters/day, method of treatment and method of disposal.

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
Sewage	Liquid and solid human waste	2 L per day	None	Disposal in dug pits
Grey water	Water used for cooking and dishwashing	<15 L	Screened to remove food debris	Disposed of in shallow pit

16. OTHER AUTHORIZATIONS

In addition to the sub-surface and surface land use authorizations provided in Block 6, are the same authorizations required as considered in the existing licence?

☐ Yes ☐ No

For each provide the following: there are no other authorizations required beyond those indicate in sections above.

Authorization: _____

Administering Agency: _____

Project Activity: _____

Date (expected date) of issuance: _____ Date of expiry: _____

17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES

Are predicted environmental impacts of the undertaking and proposed mitigation measures the same as those considered in the existing water licence?

☒ Yes ☐ No

Describe direct, indirect, and cumulative impacts related to water and waste.

Our camp water uses and sampling work generates minimal impacts to surface waters. We must cross streams in the catchment, but we travel across drier headwater areas as much as possible, and use the same crossing to minimize impacts. Our research requires exceptional care to prevent contamination or pollution in the surface waters we are sampling, and we adhere to minimal disruption of waters, channel banks and shorelines.

18. WATER RIGHTS OF EXISTING AND OTHER WATER USERS

Are the effects of the undertaking on any known persons or property including those that hold licences for water use in precedence to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature, the same as those considered in the existing water licence?

☒ **X Yes** ☐ **No**

Provide the names, addresses and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.

Advise the Board if compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.

There are no known persons or properties that could be affected by the proposed undertaking.

19. INUIT WATER RIGHTS

Are the effects of the undertaking on the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL) the same as those considered in the existing water licence?

☒ **X Yes** ☐ **No**

Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL), and advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO).

There is no Inuit owned land in the study area.

20. CONSULTATION - Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.

Consultations with the hamlet of Resolute will take place in May 2013. When M. Lafrenière will be in Resolute Bay for commencement of field work.

21. SECURITY INFORMATION

Is the financial security assessment the same as that considered in the existing water licence?

☒ **X Yes** ☐ **No**

Is the estimate of the total financial security for final reclamation the same as that considered in the existing water licence?

☒ Yes ☐ No

Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. Estimates of reclamation costs must be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults. The estimate must also include contingency factors appropriate to the particular work to be undertaken.

Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut*, Indian and Northern Affairs Canada, 2002.

Our research will have minimal impacts on the land and water resources in the study area. Our camp is short term (<70 person days) and temporary. All tents and equipment is removed at the end of the field season each year.

22. FINANCIAL INFORMATION

Is the statement of financial security the same as that considered in the existing water licence?

☒ Yes ☐ No

Provide an updated statement of financial security.

This research is funded by an NSERC Strategic Project Grant to M. Lafrenière and S. Lamoureux

If the applicant is a business entity please answer the questions below:

Is the list of the officers of the company the same as those considered in the existing water licence?

☐ Yes ☐ No

Provide a list of the officers of the company.

NOT APPLICABLE

Is the Certificate of Incorporation or evidence of registration of the company name the same?

☐ Yes ☐ No

Attach a copy of the Certificate of Incorporation or evidence of registration of the company name.

23. STUDIES UNDERTAKEN TO DATE

List and attach updated studies, reports, research etc.

Below is a list of conference publications and journal articles that have been produced as a result of our research at the study site.

Conference Publications:

- Allux, S., Treitz, P., Budkewitsch (2012) Ecological classification and high resolution satellite mapping of High Arctic vegetation on the Sabine Peninsula, Melville Island, Nunavut Proceedings of ArcticNet Annual Scientific Meeting 2012, Vancouver, BC, Dec 10-14, p.110 (poster)
- Collingwood A., Treitz, P., and Charbonneau F (2012) Biophysical modeling and monitoring in the Canadian High Arctic with RADARSAT-2 Proceedings of ArcticNet Annual Scientific Meeting 2012, Vancouver, BC, Dec 10-14, p.44 (oral)
- Louiseize N, Montross SN, Lafrenière, MJ and Montross G. (2012) Carbon and nitrogen dynamics in thermokarst ponds at Sabine Peninsula, Nunavut, Canada. Proceedings of ArcticNet Annual Scientific Meeting 2012, Vancouver, BC, Dec 10-14, p.150 (poster)
- Montross SN, Lafrenière, MJ, Holloway JE, and Lamoureux SF, (2012) Geochemistry and mineralogy of mud ejection features in continuous permafrost zones. Proceedings of ArcticNet Annual Scientific Meeting 2012, Vancouver, BC, Dec 10-14, p.155-156 (poster)
- Rudy, A.C.A., Lamoureux, S.F., Treitz, P., 2012. Mapping high arctic permafrost disturbances using multi-temporal aerial photographs and satellite imagery, Melville Island, Nunavut. Poster presented at the 2012 International Polar Year Conference. April 22-27, Montreal, Quebec. (poster)
- Rudy, A.C.A and Lamoureux, S., 2010, Landscape controls over permafrost slope disturbances, Sabine Peninsula, Melville Island, Nunavut. Poster presented at the ArcticNet Annual Scientific Meeting. December 14-17, Ottawa, Ontario. (poster)

Peer reviewed Journal articles:

- Rudy, A. C. A., Lamoureux, S. F., Treitz, P., Collingwood, A. (2013). Identifying permafrost slope disturbance using multi-temporal optical satellite images and change detection techniques. *Cold Regions Science and Technology*, 88, 37–49. doi:10.1016/j.coldregions.2012.12.008

Provide a compliance assessment and status report including a response to any inspector's reports. The licensee must contact the NWB for licence specific direction in completing the assessment and report.

We have submitted Annual reports of our water uses to the Water board, as was required by our multiyear licence. We have not required any inspectors' reports or compliance assessment reports.

If in non-compliance, a licence may not be issued until compliance is achieved. If in non-compliance, attach plans/reports for consideration. Application will not be processed if significant issues of non-compliance exist.

24. PROPOSED TIME SCHEDULE

Is the time schedule for all phases of development (construction, operations, closure and post closure) the same as that considered in the existing licence?

Not Applicable ☐ Yes ☐ No

Indicate the proposed start and completion dates for each applicable phase of development (construction, operation, closure, and post closure).

We operate a small (2-4 person) temporary camp, where there are no buildings or permanent structures.

For 2013 we are scheduled to be in camp from July 10 to August 1st. For a total of <60 person days.

Construction

Proposed Start Date: _____ Proposed Completion Date: _____
(month/year) (month/year)

Operation

Proposed Start Date: _____ Proposed Completion Date: _____
(month/year) (month/year)

Closure

Proposed Start Date: _____ Proposed Completion Date: _____
(month/year) (month/year)

Post - Closure

Proposed Start Date: _____ Proposed Completion Date: _____
(month/year) (month/year)

For each applicable phase of development indicate which season(s) activities occur.

Construction

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Operation

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Post - Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

25. PROPOSED TERM OF LICENCE

On what date does the existing licence expire? _May 2013 _____

Indicate the proposed term of the renewal (maximum of 25 years): _2 years _____

Requested date of renewal issuance: _____ June 2013 _____ Requested Expiry Date: _____ June 2015 _____
(month/year) (month/year)

(The requested date of renewal issuance must be at least three (3) months from the date of application for a type B water licence and at least one (1) year from the date of application for a type A water licence, to allow for processing of the water licence application. These timeframes are approximate and do not account for the time to complete any pre-licensing land use planning or development impact requirements, time for the applicant to prepare and submit a water licence application in accordance with any project specific guidelines issued by the NWB, or the time for the applicant to respond to requests for additional information. See the NWB's *Guide 5: Processing Water Licence Applications* for more information)

26. ANNUAL REPORTING

Is the annual report template expected to be the same as that considered in the existing licence?

☒ Yes ☐ No

If not using the NWB's *Standardized Form for Annual Reporting*, provide details regarding the content of annual reports and a proposed outline or template of the annual report.

NUNAVUT WATER BOARD
APPLICATION FOR WATER LICENCE RENEWAL

MAY 2011

Annual report attached

27. CHECKLIST

The following must be included with the application for renewal for the water licensing process to begin.

Completed Application for Water Licence Renewal form.

☒ Yes ☐ No If no, date expected _____

Updated plans, including designs and reports (see Block 23).

☒ Yes ☐ No If no, date expected _____

Updated security assessment (see Block 21).

☐ Yes ☐ No If no, date expected _Not applicable_

Updated financial statement (see Block 22).

☐ Yes ☐ No If no, date expected _Not applicable_

Compliance Assessment / Status Report (see Block 23).

☐ Yes ☐ No If no, date expected _Not applicable_

English Summary of Renewal Application.

☒ Yes ☐ No If no, date expected _____

Inuktitut and/or Inuinnaqtun Summary of Renewal Application.

☒ Yes ☐ No If no, date expected _____

Application fee of \$30.00 CDN (Payee Receiver General for Canada).

☐ Yes ☐ No If no, date expected _Will pay by credit card by phone_

Water Use Fee Deposit of \$30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.

☐ Yes ☐ No If no, date expected _Will when fee is established_

28. SIGNATURE

I, Melissa Lafreniere (print name)

certify that the application requires no changes to water use or waste disposal as previously authorized and that the information given on this form is, to the best of my knowledge, correct and complete.

M. Lafreniere
Signature

May 4, 2013
Date

