P.O. Box 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
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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

Elizabeth C Turner
Department of Earth Sciences
Laurentian University
Sudbury ON P3E 2C6

Phone: 705-675-1151 x2267
Fax: 705-675-4898
e-mail: eturner@laurentian.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)

Devon Island – Cuming Inlet 74°33'10" / 84°37'30" NTS 48F
Ellesmere Island - Clarence Head 76°47'/ 77°48' NTS 39B
Ellesmere Island – Cape Combermere 77°00' / 78°06' NTS 39C
Ellesmere Island – Stanfield Point 78°07' / 76°01' NTS 39F
Ellesmere Island – Gale Point 78°13' / 75°33' NTS 39F

Latitude: (° ' " N) Longitude: (° ' " W)
NTS Map Sheet No. _____ Scale: _____

4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)

A small backpacking-style camp for two people will be established at each successive location for 4-7 days each in order to examine rock exposures. Total time will be approximately 4 weeks. Camps will be moved intermittently by PCSP helicopter. All sites will be left as they were found.

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 (academic - geology).

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

_____ 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):

2 litres of sewage and <10 litres of grey water per day. Approximately one small garbage bag of solid waste per week will be taken to a municipal landfill.

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 not required (low person-days)
Regional Inuit Association	☐ Yes	☒ No	If no, date expected no IOL
Commissioner	☐ Yes	☒ No	If no, date expected _____

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

The project has no potential for adverse environmental effects.

NIRB Screening	☒ Yes	☐ No	If no, date expected positive screening for 2009 sites; pending for new sites

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. The project will not affect other existing rights or water users.

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)

N/A

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

N/A

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: June 15, 2010 Completion Date: July 31, 2010

Elizabeth C. Turner	Associate Professor		April 16, 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.: _____**

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: ELIZABETH TURNER **Licence No:** _____
(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Manager: _____ Tel: _____ Fax: _____ E-mail: _____
   705-675-1151 x 2267 eturner@laurentian.ca

2. Project Manager: _____ Tel: _____ Fax: _____ E-mail: _____

3. Does the applicant hold the necessary property rights?

4. Is the applicant an 'operator' for another company (i.e., the holder of the property rights)? If so, please provide letter of authorization.

5. Duration of the Project

   ☐ One year or less Start and completion dates: 2010 June 25 - 2010 July 31
   ☐ Multi Year: 2 years (?)

   If Multi-Year indicate proposed schedule of on site activities
   Start: _____ Completion: _____

CAMP CLASSIFICATION

6. Type of Camp

   ☐ Mobile (self-propelled)
   ☒ Temporary
   ☐ Seasonally Occupied: _____
   ☐ Permanent
   ☐ Other: _____

7. What is the design, maximum and expected average population of the camp?
   2-4 people at each campsite; no camp used for more than 1 week

8. Provide history of the site if it has been used in the past.
   none of the proposed sites has been used previously.

CAMP LOCATION

9. Please describe proposed camp location in relation to biogeographical and geomorphological features, and water bodies.
Cuming Inlet, Devon Island – river valley 4km upstream from coast
4 locations on Southeastern Ellesmere Island – all are sea-cliffs (camp on top)

10. How was the location of the camp selected? Was the site previously used? Was assistance from the Regional Inuit Association Land Manager sought? Include maps and/or aerial photographs.
Locations are dictated by rock exposure. See attached maps.

11. Is the camp or any aspect of the project located on:

- [x] Crown Lands — Permit Number (s)/Expiry Date: not required (low person-days)
- [ ] Commissioners Lands — Permit Number (s)/Expiry Date: _____
- [ ] Inuit Owned Lands — Permit Number (s)/Expiry Date: _____

12. Closest Communities (direction and distance in km):
Devon: Arctic Bay 165 km South; Pond Inlet 290 km SE; Resolute 325 km W
Ellesmere: Grise Fiord 290 to 145 km SW of the 4 locations.

13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work?
yes

14. Will the project have impacts on traditional water use areas used by the nearby communities? Will the project have impacts on local fish and wildlife habitats?
No such impacts are anticipated

PURPOSE OF THE CAMP

15.
- [ ] Mining (includes exploration drilling)
- [ ] Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.) (Omit questions # 16 to 21)
- [x] Other Scientific research

16. Activities (check all applicable)

- [ ] Preliminary site visit
- [ ] Prospecting
- [x] Geological mapping
- [ ] Geophysical survey
- [ ] Diamond drilling

- ☐ Reverse circulation drilling
- ☐ Evaluation Drilling/Bulk Sampling (also complete separate questionnaire)
- ☐ Other: _____

17. Type of deposit (exploration focus): NONE

- ☐ Lead Zinc
- ☐ Diamond
- ☐ Gold
- ☐ Uranium
- ☐ Other: _____

DRILLING INFORMATION

18. Drilling Activities

- ☐ Land Based drilling
- ☐ Drilling on ice

19. Describe what will be done with drill cuttings?

20. Describe what will be done with drill water?

21. List the brand names and constituents of the drill additives to be used? Includes MSDS sheets and provide confirmation that the additives are non-toxic and biodegradable.

22. Will any core testing be done on site? Describe.

SPILL CONTINGENCY PLANNING

23. The proponent is required to have a site specific Spill Contingency Plan prepared and submitted with the application This Plan should be prepared in accordance with the *NWT Environmental Protection Act, Spill Contingency Planning and Reporting Regulations, July 22, 1998* and *A Guide to the Spill Contingency Planning and Reporting Regulations, June 2002.* Please include for review.
We will have no more than 8 litres of fuel with us. Any spills will be absorbed with absorbent paper.

24. How many spill kits will be on site and where will they be located? 1; in our gear bag

25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.
We will have approximately 4 to 8 litres of naptha (for cooking)

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources. small streams

27. Estimated water use (in cubic metres/day):

- ☐ Domestic Use: << 1 m^3/day Water Source: stream or pond
- ☐ Drilling: _____ Water Source: _____
- ☐ Other: _____ Water Source: _____

28. Describe water intake for camp operations? Is the water intake equipped with a mesh screen to prevent entrapment of fish? (see *DFO 1995, Freshwater Intake End-of-Pipe Fish Screen Guideline*) Describe:
no intake

29. Will drinking water quality be monitored? What parameters will be analyzed and at what frequency?
N/A

30. Will drinking water be treated? How?
No.

31. Will water be stored on site? No.

WASTE TREATMENT AND DISPOSAL

32. Describe the characteristics, quantities, treatment and disposal methods for:

- [x] Camp Sewage (blackwater)
  shallow burial > 50 m from surface water
- [x] Camp Greywater
  shallow burial > 50 m from surface water
- [x] Solid Waste
  removed to municipal landfill (< 1 garbage bag per week)
- [ ] Bulky Items/Scrap Metal N/A
- [ ] Waste Oil/Hazardous Waste N/A
- [ ] Empty Barrels/Fuel Drums N/A
- [ ] Other:

33. Please describe incineration system if used on site. What types of wastes will be incinerated?

N/A

34. Where and how will non-combustible waste be disposed of? If in a municipality in Nunavut, has authorization been granted?

N/A

35. Describe location (relative to water bodies and camp facilities) dimensions and volume, and freeboard for all sumps (if applicable).

N/A

36. Will leachate monitoring be done? What parameters will be sampled and analyzed, and at what frequency?

N/A

OPERATION AND MAINTENANCE

37. Have the water supply and waste treatment and disposal methods been used and proven in cold climate? What known O&M problems may occur? What contingency plans are in place?

ABANDONMENT AND RESTORATION

38. Provide a detailed description of progressive and final abandonment and restoration activities at the site. Our camping is minimalist (1 tent per person + kitchen tent = 3 tents). Each camp will be occupied for <7 days. All sites will be left as they were found.

BASELINE DATA

39. Has or will any baseline information be collected as part of this project? Provide bibliography.

- ☐ Physical Environment (Landscape and Terrain, Air, Water, etc.)
- ☐ Biological Environment (Vegetation, Wildlife, Birds, Fish and Other Aquatic Organisms, etc.)
- ☐ Socio-Economic Environment (Archaeology, Land and Resources Use, Demographics, Social and Culture Patterns, etc.)
- ☐ Other: _____

REGULATORY INFORMATION

40. At a minimum, you should ensure you have a copy of and consult the documents below for compliance with existing regulatory requirements:

- ✓ ARTICLE 13 – *NCLA -Nunavut Land Claims Agreement*
- ✓ NWNSRTA – *The Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002*
- ✓ *Northwest Territories Waters Regulations, 1993*
- ✓ NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants
- ✓ NWB - Interim Rules of Practice and Procedure for Public Hearings
- ✓ RWED – *Environmental Protection Act, R-068-93- Spill Contingency Planning and Reporting Regulations, 1993*
- ✓ RWED A Guide to the Spill Contingency Planning and Reporting Regulations, 2002
- ✓ NWTWB - Guidelines for Contingency Planning
- ✓ *Canadian Environmental Protection Act, 1999 (CEPA)*
- ✓ *Fisheries Act, RS 1985* - s.34, 35, 36 and 37
- ✓ DFO - Freshwater Intake End of Pipe Fish Screen Guideline
- ✓ NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT

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Mesoproterozoic Basins Project

Dr. E.C. Turner, Laurentian University

This study focuses on the environments in which 1.2 billion year-old sedimentary rocks were deposited. These sedimentary rocks were deposited on the Earth's surface at a time when movements in the Earth's crust formed high areas that shed sediment and low areas where the sediment accumulated. We are interested in how these activities influenced the sediment that accumulated in ancient rivers and shallow-marine environments. Variations in these types of sedimentary rocks record how the environments differed according to geographic location on the Earth's surface, and through time, as the Earth's crustal movements changed. There are two motivations for this study. (1) The area concerned is known to contain metal deposits. Finding more such deposits will be easier if the geologic history of the area is better understood. (2) The nature of the Earth's surface environments 1.2 billion years ago is not well known, and this project will contribute scientific information toward filling that gap in understanding Earth's history. The areas of interest are northern Baffin Island and the adjacent mainland, Somerset Island, southern Devon Island, and southeastern Ellesmere Island.

The main activity in the field part of the study consists of examining and describing outcrops of sedimentary rock, and collecting fist-sized samples of rocks exposed at the surface of the land for later analysis. The project is based on slow and simple data-gathering in the field, all done on foot from very small base camps that are moved weekly by helicopter. Multiple years of data-gathering are required before a regional synthesis can be put together. 2009 was the first of several proposed years for this project.

ETopo

48F Edition 2 UTM Zone 16

Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES. Information current as shown in diagram. Published in 1984.

This map was checked in 1982 and found to be up-to-date in all major features.

Cette carte a été vérifiée en 1982 et nous avons constaté que toutes ses caractéristiques principales étaient à jour.

Établie par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES. Renseignements à jour tels qu'indiqués au diagramme. Publiée en 1984.

POWELL INLET

DISTRICT OF FRANKLIN DISTRICT DE FRANKLIN

NORTHWEST TERRITORIES TERRITOIRES DU NORD-OUEST

Roads: Routes:
cart track ..... de ferme .....
trail, cut line or portage ..... sentier, percée ou portage .....

Scale 1:250 000 Échelle

Miles 5 0 5 10 15 20 Miles
Kilometres 5 0 5 10 15 20 25 30 Kilometres

CONVERSION SCALE FOR ELEVATIONS ÉCHELLE DE CONVERSION DES ALTITUDES

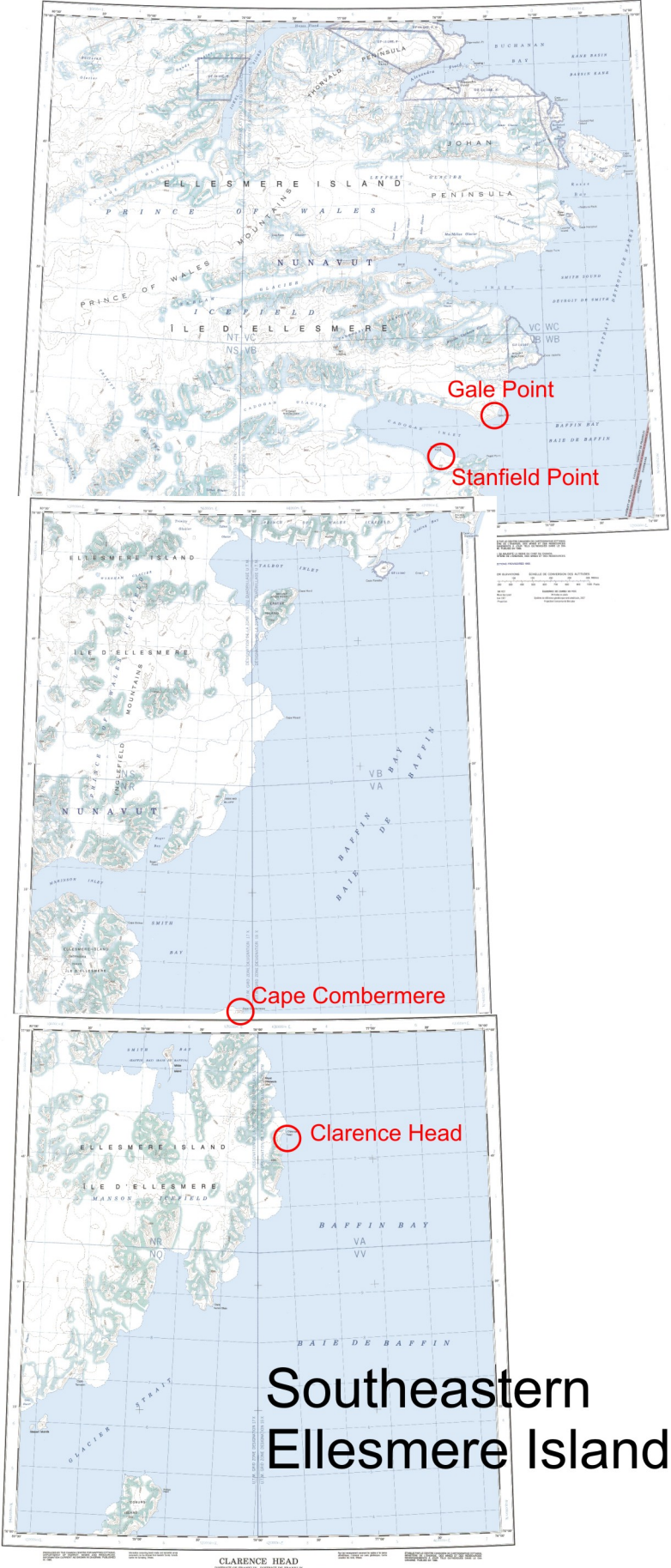
Metres 30 20 10 0 50 100 150 200 250 300 Mètres
Feet 100 50 0 100 200 300 400 500 600 700 800 900 1000 Pieds

CONTOUR INTERVAL 200 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

ÉQUIDISTANCE DES COURBES 200 PIEDS
Altitudes en pieds
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

Magnetic declination 1984 varies from 69°48' westerly at centre of west edge to 70°49' westerly at centre of east edge. Mean annual change decreasing 56.7'

En 1984, la déclinaison magnétique varie vers l'ouest de 69°48' au centre du bord ouest à 70°49' au centre du bord est. La variation annuelle moyenne décroît de 56.7'


Gale Point
Stanfield Point
Cape Combermere
Clarence Head
Southeastern
Ellesmere Island
CLARENCE HEAD
DISTRICT OF FRANKLIN
NORTHWEST TERRITORIES
TERRITOIRES DU NORD-OUEST