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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: Dr. Natalia Rybczynski **Licence No: ____________________________**
(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Manager: __________Tel: __________ Fax: ___________E-mail:__________

2. Project Manager: Dr. Natalia Rybczynski Tel: 613-566-2462 Fax: 613-364-4027 E-mail: nrybczynski@mus-nature.ca

3. Does the applicant hold the necessary property rights?

   We will be conducting research on Inuit owned land and are applying for the proper exemption.

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

   Not applicable

5. Duration of the Project

   ☐ One year or less
   ✔ Multi Year:

   If Multi-Year indicate proposed schedule of on site activities

   In future years the team would possibly propose to explore the following sites:

   Axel Heiberg 79° 55.333'N 88° 56.383'W
   Bylot Island 73° 12.830'N 79° 52.502'W
   Devon Island 75° 23.549'N 89° 45.212'W
   76° 11.206'N 90° 39.669'W
   Ellesmere Island, Forsheim Peninsula 79 52' N, 85 d 51' W
   Ellesmere Island, Vendom Boundary Site 77° 59.967'N 82° 55.440'W
   Meighan Island 79° 51.242'N 99° 13.468'W
   Borden Island 78° 36.000'N 110° 17.000'W

   Start: 2010 Completion: 2015

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?

Temporary camp sites with a maximum of 6 people. The camp includes individual personal sleeping tents and one common kitchen/research tent.

8. Provide history of the site if it has been used in the past.

All camp sites have been used in previous years. Dr. Rybczynski and team conducted palaeontological research at both Location A and Location B at the Strathcona Fiord (see coordinate below) in 2006 and 2008 and Dr. Harington (Canadian Museum of Nature) stayed at this site multiple times throughout his 1990s field expeditions. The Ellef Ringnes Location C site was originally visited by Dr. Fyles in the 1988 and Dr. Rybczynski and team are hoping to stay in the same area.

CAMP LOCATION

9. Please describe proposed camp location in relation to biogeographical and geomorphological features, and water bodies.

Location A) Strathcona Fiord, Ellesmere Island (78º 33' N, 82º 25' W)
The Beaver Pond site.
The camp site is located near the south shore of the Strathcona Fiord and just over 1 kilometer from the fossil site. There is a freshwater pond approximately 2 kilometers southeast of the camp site. The camp site is close to exposed Eureka Sound Group (ESG) formation. The research team is mainly interested in the peat deposits found in the younger deposits which superimpose the ESG at roughly 400 meters above sea level. The fossil site is on a steep slope, in an area prone to slumping and erosion. It is therefore imperative to study the deposit before it disappears.

Location B) Strathcona Fiord, Ellesmere Island (78º 27' N, 82º 35' W)
The 90 Meter Section site.
This camp site is roughly 10 kilometers southwest of Location A, located near the top of a hill. Freshwater is not readily accessible in this area; therefore, the field team must bring water for drinking and cooking. This water will be brought in 5 gallon containers from the Polar Continental Shelf Program (PCSP), Resolute Bay, NU. However, if necessary, the field team could access a narrow stream situated over 2 kilometers to the east of the camp site, though

there it is a steep climb and it has not been accessed in past years. The field team will be investigating peat deposits along a steep exposure near the camp site.

Location C) Ellef Ringnes Island (79º 05' N, 103º 48' W)
Fyles' site
The team is interested in locating the Beaufort Formation deposits that contains fossil peat. Fyles' 1988 field work established that considerable peat deposits can be found at Location C. The field team intends to explore these deposits (See the attached topographic Map 2 Location C.), and will camp in the area. Fyles also camped in this area in 1988. Based on maps and Fyles' notes there are no obvious water bodies near this camp area. The field team will ensure to bring sufficient water to the site.

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.

All of the sites were previously used. These sites were selected based on their proximity to the rock and fossil locations of research interest. The sites were previously used by research scientists through the 1980s through to 2009 (see section 8. of this application for more detail). LocationsA has a 'landing strip' while Location B and Location C are accessible via helicopter. The Polar Continental Shelf Program coordinates and provides the twin otter and helicopter services.
Dr. Rybczynski has been providing a letter to the Grise Fiord Hamlet Council on a yearly basis, providing research updates and future research project goals.

Please see the attached:
Project Description; Map 1 Locations A and B; Map 2 Location C

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

Location C is on Crown Lands though we do not require a Class A Permit nor do we require a Class B Permit since we will not exceed the 100 person/days per location regulation.

✔	Crown Lands	Permit Number (s)/Expiry Date: Not applicable (see above comment)
☐	Commissioners Lands	Permit Number (s)/Expiry Date: _____
✔	Inuit Owned Lands	Permit Number (s)/Expiry Date: Application in process

12. Closest Communities (direction and distance in km):

The closes community is the Hamlet of Grise Fiord.
Distances from each Site Location:
Location A) is around 250 kilometers north of Grise Fiord
Location B) is around 240 kilometers north of Grise Fiord
Location C) is around 570 kilometers northwest of Grise Fiord

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

The community of Grise Fiord has been updated annually of this research program. Every year a letter is submitted to the Grise Fiord Hamlet Council with the aim of updating the community of progress and plans. Nunavut's Department of Culture, Language, Elders and Youth (CLEY) played an active role in selecting the Inuktitut name for the new species of fossil carnivore, discovered by Rybczynski and team on Devon Island in 2007 (*Puijila darwini).*

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, there will be no impacts on traditional water use in the nearby communities nor will there be any impacts on local fish and wildlife habitats. Water will only be used for cooking and drinking.

PURPOSE OF THE CAMP

15.
- ☐ Mining (includes exploration drilling)
- ☐ Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.) (Omit questions # 16 to 21)
- ✔ Other: palaeontology research

16. Activities (check all applicable)

- ☐ Preliminary site visit
- ☐ Prospecting
- ✔ Geological mapping
- ☐ Geophysical survey
- ☐ Diamond drilling
- ☐ Reverse circulation drilling
- ☐ Evaluation Drilling/Bulk Sampling (also complete separate questionnaire)
- ✔ Other: Palaeontology prospecting and surficial exploration

17. Type of deposit (exploration focus):

- ☐ Lead Zinc
- ☐ Diamond
- ☐ Gold
- ☐ Uranium
- ✔ Other: Vertebrate and plant fossils

DRILLING INFORMATION

18. Drilling Activities

- ☐ Land Based drilling
- ☐ Drilling on ice

Not applicable since there will be no drilling activities.

19. Describe what will be done with drill cuttings?

    Not applicable

20. Describe what will be done with drill water?

    Not applicable

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.

    Not applicable

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

    There will be no core testing. Not applicable.

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 use propane to fuel our camp stoves. No field team members smoke. If a spill occurs, no disposal is required because fuel vapour cannot be contained once it has been released.

24. How many spill kits will be on site and where will they be located?

    Not applicable

25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.

    Propane cylinders are stored in CSA approved 20lb pressurized cylinders and are transported to and from campsites by a twin otter or helicopter operated by the Polar Continental Shelf Project (PCSP).

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources.

    As in previous years, for each camp site we plan on transporting fresh water in 20 liter water containers from PCSP (Resolute Bay) or Eureka, as applicable,.
    Location A) Beaver Pond Site
    If additional fresh water is required there is access to a pond 2 kilometers from camp. This water would be treated with Pristine ClO2 water treatment prior to consumption.
    Location B) 90 Meter Section

We plan on bringing sufficient amounts of water. If necessary we would retrieve water from a stream located around 2 kilometers west of the site and would treat the water with Pristine ClO2 water treatment prior to consumption.
Location C) Ellef Ringnes Fyles' Site
Unfortunately since this will be the first visit to the site the field team is unfamiliar with the water situation. Based on satellite and maps it seems as though there is flowing water in the vicinity and, if required, the field team will access this water if the supply brought in runs out. Sufficient water will be brought to the site in 20 liter containers from PCSP-Resolute or Eureka.

27. Estimated water use (in cubic metres/day):
2 cubic meters per day or less

- ☐ Domestic Use: _____ Water Source: _____
- ☐ Drilling: N/A Water Source: N/A
- ☐ Other: N/A Water Source: N/A

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:

If additional water would be required for consumption it would be manually collected with a small scoop or 1L water bottle. This water would be used for drinking and cooking and would be stored in the 20 liter water containers or metal buckets in the cook tent.

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

No

30. Will drinking water be treated? How?

Yes, in past year the field team has used the 'Pristine ClO2 Water Treatment' to treat water prior to consumption. This low dosage chloride dioxide helps prevent the spread of many viral and bacterial diseases and aims at maintain good health of the field team. This is added to drinking water.

31. Will water be stored on site?

Water will be stored in or near the kitchen tent.

WASTE TREATMENT AND DISPOSAL

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

✔ Camp Sewage (blackwater)

Burned and Burried

✔ Camp Greywater

Greywater will be poured into a pit that will be filled in.

✔ Solid Waste

Solid waste is kept air sealed in metal storage containers and brought back to Resolute for proper disposal

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☐ Bulky Items/Scrap Metal

Not applicable

☐ Waste Oil/Hazardous Waste

Not applicable

☐ Empty Barrels/Fuel Drums

Not applicable

☐ Other:

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33. Please describe incineration system if used on site. What types of wastes will be incinerated?
Typically we dig a shallow pit and burn our toilet paper on site. All other waste is transported back to the PCSP facility in Resolute by otter when fieldwork is completed.

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

Not applicable

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

No

OPERATION AND MAINTENANCE

36. 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?

Yes, the Canadian Museum of Nature Arctic field team has been practicing these methods of disposal for many years and has not encountered any problems.

ABANDONMENT AND RESTORATION

37. Provide a detailed description of progressive and final abandonment and restoration activities at the site.

The camp site is returned to its original state prior to leaving. The team packs up all gear and field equipment, all trenches and pits are back-filled and the ground is tamped down. All remaining garbage is returned to PCSP by the field team members. At each fossil site the team primarily collects surface fossils and, therefore, there is very limited digging and dry-screening. As a result there is limited disturbance at the research sites.

BASELINE DATA

38. 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: Paleontology. See file "List of publications related to project.doc" _____
  It's possible that we may find new kinds of fossils (e.g., extinct species).

REGULATORY INFORMATION

39. 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
- ✓ Canadian Council for Ministers of the Environment (CCME); Canadian Drinking Water Quality Guidelines, 1987
- ✓ Public Health Act - Camp Sanitation Regulations
- ✓ Public Health Act - Water Supply Regulations
- ✓ *Territorial Lands Act* and *Territorial Land Use Regulations*; Updated 2000