



NIRB Uuktuutinga Ihivriuhikhamut #125711

Developing new technologies to investigate the Devon Island subglacial lake system

Uuktuutinga Qanurittuq: New

Havaap Qanurittunia: Scientific Research

Uuktuutinga Ublua: 5/30/2022 3:52:26 PM

Period of operation: from 0001-01-01 to 0001-01-01

Piumayaat Angirutinga: from 0001-01-01 to 0001-01-01

Havauhikhaq Ikayuuqtinga: McGill University, Lyle Whyte
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Canada
Hivayautit Nampanga:: 514-398-7889, Kayumiktukkut Nampanga::

Personnel

Personnel on site: 4

Days on site: 2

Total Person days: 8

Operations Phase: from 2022-06-15 to 2024-07-31

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannuqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaiiyainnit nuna
Devon Island Subglacial Lakes Region	Sampling sites	Crown	N/A	None. Not aware of any archeological/paleontological value of the ice cap.	Approximately 120 km to Grise Fiord which is the nearest community we're aware of. Approximately 120 km to Nirjutiqavvik National Wildlife Area (Coburg Island National Wildlife Area) which is the nearest protected area we're aware of.

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Qausuittuq	N/A	Hunter and Trappers Association of Resolute Bay	2022-11-01

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

North Baffin

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Nunavut Kavamanga, Nunavunmi Ihivriunniqmut Timiqutigiyanga	We have completed the NPC application and once this NIRB application is submitted we will be waiting on confirmation of the NRI license.	Active		

Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Air	Helicopter or twin otter transportation from Resolute Bay (PCSP) to the top of the Devon Island ice cap	

Project accomodation types

Temporary Camp

Ihuaqutivaluin Atuqtauyukhan

Hanalrutit atuqtaunahuat (ukuallu ikuutat, pampiutainnik, tingmitinik, akhaluutinik, hunaluuniit)

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Kovacs corer	1	0.2m x 0.2m x 1m	A corer which will be used to collect ice core samples 1 -2 meters into the subsurface of the ice cap.
SLUSH Drill system	1	0.57m x 0.57m x 5m	A drill developed by Honeybee Robotics used to drill into ice using a melt probe. In year one, the drill will be used to drill up to 2 meters into the subsurface of the ice cap and up to 100 meters by year 3 of the project.

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Propane	fuel	3	5	15	Gallons	Propane will be used in years 2 and 3 of the project (2023 & 2024) for heating and cooking while camping at the field site.
Other	fuel	1	2	2	Gallons	Gasoline/oil mix to be used to power a Honda 2 kw generator which will in turn be used to power the SLUSH drill.

Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
0	Snow melt/bring from PCSP Resolute	PCSP Resolute

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Camp	Qirnarivyaktuq imaq	50 liters	Transport back to and disposal at PCSP Resolute.	N/A
Camp	Anaagun (inuin anaaguin)	50 liters	Transport in sealed containers back to PCSP Resolute for proper disposal.	N/A

Avatiliriniqmut Ayurhautingit:

We predict minimal environmental impact to the field site. In 2022 we only plan to spend up to 10 hours on the ice cap over the course of two days. No equipment and/or waste will be left in the field. All waste will be collected in waste containers and transported back to PCSP at Resolute Bay for disposal in the proper manner. For 2023 and 2024, we plan to camp at the field site for 4 - 5 days. During this time, human waste will be collected in sealed buckets and transported back to PCSP Resolute for proper disposal. All other waste material will be stored in trash bags and brought back to PCSP Resolute for proper disposal. We foresee causing very little impact on the field site. We perceive NO impact to Eskers and other unique or fragile landscapes, unlike what is stated in the form below, which will not save as such.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Qanurittuq Ittunik Avatinga: Avatingalluanga

The Devon Island ice cap is a large ice cap situated on the eastern side of the island. The ice cap has a maximum depth of ~900 meters. The top layer of the ice cap where the study will take place is mainly composed of firn and snow. Crevasses in the ice cap are also known.

Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga

There is no vegetation on the ice cap and to the best of our knowledge, there are no animal populations which reside on the ice cap.

Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga

The site is far from any community. Devon Island is uninhabited. We perceive it highly unlikely to encounter archaeological or culturally significant sites on the ice cap. There is no land or resource use on the ice cap.

Miscellaneous Project Information

Please see attached PCSP application form for details on training and measures used to mitigate emergencies while in the field. Please see attached document for our comprehensive spill prevention/plan. Our confirmation of application to the NPC is also attached.

Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit

We perceive very little impact to the site. The only lasting impact to the site will be shallow bore holes in the top of the ice cap and one up to 100 meters deep by year 3 of the project. These boreholes are small in diameter (approximately 15 cm wide) and we expect them to fill in naturally after one Arctic winter/spring thaw. These boreholes will also be localized to an area of only 20 to 30 meters, minimizing their impact on the surrounding environment. All impacts on the site from human activity will be minimized by containing all waste materials and fluids in sealed containers which will be transport back to and disposed of properly at PCSP Resolute. No materials will be left at the site once work is completed.

Tamatkiumayunik Ihuikgutivaktunik

Aside from seasonal melt on top of the ice cap, the Devon Island ice cap is relatively unchanging year over year. We plan not to leave any evidence of our presence or work beyond a few localized shallow boreholes. These boreholes are predicted to fill naturally within one year, therefore we do not foresee any cumulative effects from our work on the environment.

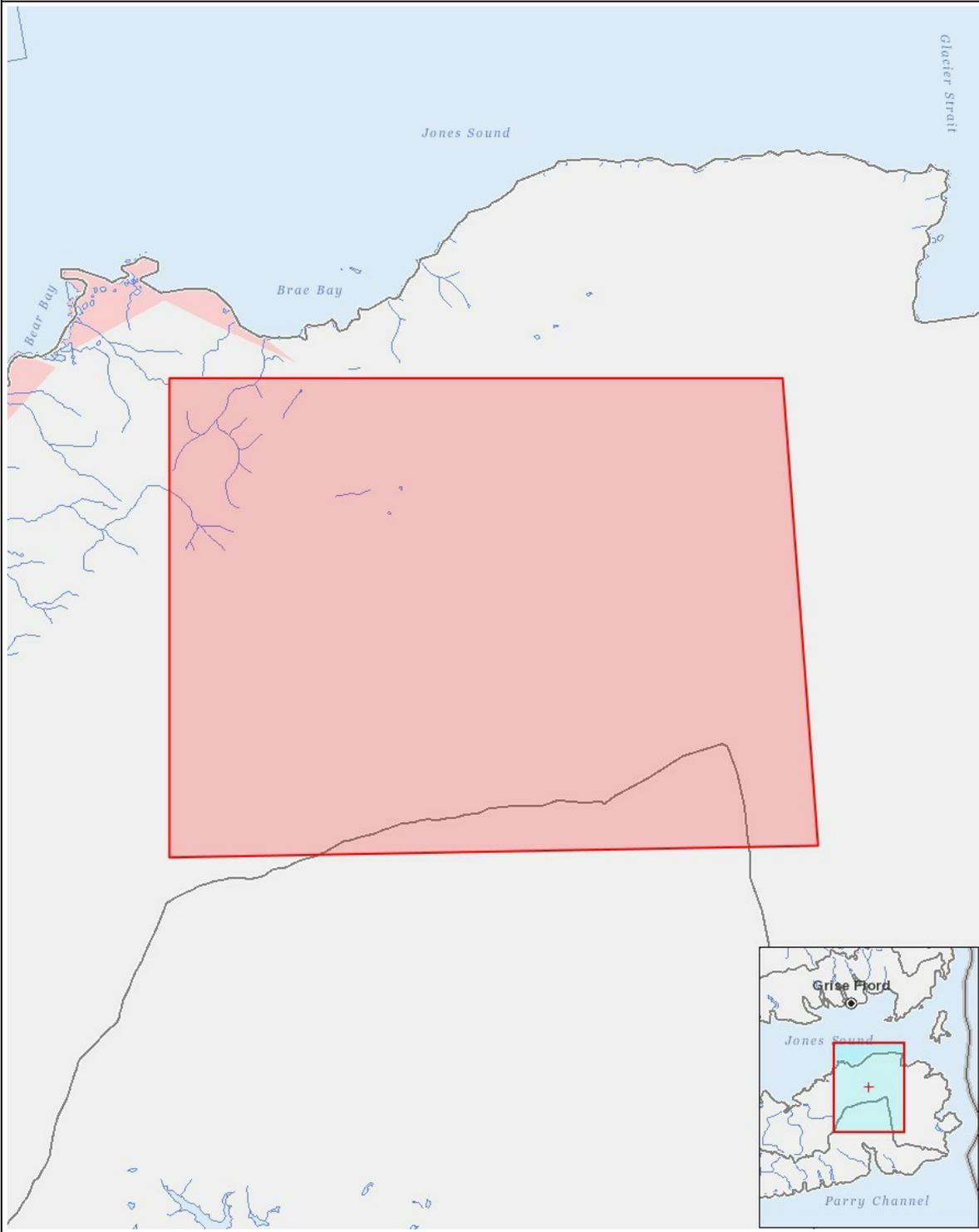
Impacts

Ilitariyauniq Avatiliriniqmut Ayurhauingit

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Havakvinga																									
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Aulapkaininnga																									
Sampling sites	-	-	-	-	-	-	-	-	-	-	-	-	-	-	U	U	-	-	-	-	P	-	-	-	-
Piiqtauniq																									
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(P = Nakuuyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyayuq)

Havaariyauyukhamut Nayugaa



List of Project Geometries

1	polygon	Devon Island Subglacial Lakes Region
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