



NIRB Uuktuutinga Ihivriughikhamut #125445

Periglacial Geomorphology and ground ice investigation in the Haughton impact structure area, Devon Island, Nunavut

Uuktuutinga Qanurittuq: New

Havaap Qanurittunia: Scientific Research

Uuktuutinga Ublua: 2/8/2019 1:26:56 PM

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

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

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QANURITTUT

Tukihiannaqtunik havaariyaumayumik uqauhiyun

Qablunaatitut: Title: Periglacial Geomorphology investigation study in permafrost at the Haughton impact structure and surrounding terrains, Devon Island, Nunavut Our objective this year is to investigate the underground in relation to the periglacial landforms and ground ice using a geophysical approach such as field sampling, ground surveying and mapping with a focus on in-crater and out of crater differentiation.

Uiviititut: Titre: Periglacial Geomorphology investigation study in permafrost at the Haughton impact structure and surrounding terrains, Devon Island, Nunavut Cette année notre objectif est d'étudier la proche surface du sol et la dynamique périglaciaire et des coins de glace en utilisant une approche géophysique, comme l'échantillonnage de terrain, l'utilisation de géoradar et la cartographie en utilisant une approche de différenciation du terrain intra-cratère versus extra-cratère.

Inuktitut: I included an Inuktitut non-technical summary with the application

Personnel

Personnel on site: 4

Days on site: 19

Total Person days: 76

Operations Phase: from 2019-07-17 to 2019-08-04

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
Haughton River Valley Camp	Camp	Inuit Owned Surface Lands	This site is used for research since the late 1990's	None	Grise Fjord and Resolute are several hunder km from the location
Haughton Crater Area (big polygon); Orbiter Lake and Lake Comet (small circles)	Researching	Inuit Owned Surface Lands	Orbiter and Comet lake are desert. Haughton River Valley was studied since the late 1990's and the Haughton Formation since the 1980's	No know archeological sites. There is fossil rich layers in the Haughton Formation in the SW of the crater: we will not go there.	Grise Fjord and Resolute are several hunder km from the location

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Information is not available			

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

North Baffin

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Nunavut Imaligiyyit Katimayit	Approval for the use of waters and deposit of waste without a license 8WLC- DIS1920	Active	2019-04-12	2020-04-11
Nunavunmi Ihivriuqniqmut Timiqutigiyanga	Investigate the periglacial landscapes in and near the Haughton Impact Structure #02 021 19R-M	Active	2019-02-25	2019-12-31
Qikiqtani Inuit Katimayit	Investigate the periglacial landscapes in and near the Haughton Impact Structure	Applied, Decision Pending		

Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Air	Twin Otter to open and then close the camp	
Land	ATV's and walking on the site depending on distance to point of interest	

Project accomodation types

Temporary Camp

Ihuaqutivaluin Atuqtauyukhan

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

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Kawasaki Bayou	2	1.75x1.0x1.0 m, 185 kg	Travelling to sites too far to be accessed by walking
Honda Generator	1	0.5x0.3x0.4 m, 22 kg	Powering and charging electronic equipment
Coleman Stoves	2	0.6x0.1x0.3 m, 6 kg	Cooking food and boiling water
Badger Auger	1	0.5x0.4x0.4	For accessing deeper (~1 m) soil horizons
Portable Drill	1	1 m 30 kg	Small man portable CRREL drill for shallow soil drilling. (max depth is 2.5 m)
Ground Penetrating Radar	1	40 kg	This is a passive instrument to look at underground ice with antennas.

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Gasoline	fuel	10	20	200	Liters	Refuel ATV, generator
Aviation fuel	fuel	4	55	220	Gallons	Aircraft Refuel
Propane	fuel	3	20	60	Lbs	Heating, Cooking
Oil	fuel	1	1	1	Liters	Engine Maintenance

Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
0	We go toward the stream with clean water bottles and we refill	The Houghton River is a pretty large river about 1 km from the base camp location

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Camp	Ikulalaaqtun iqqakuuvaluin	50 kg	Waste will be stored and carried back to Resolute for proper disposal.	N/A
Camp	Qirnarivyaktuq imaq	20 L per day	Greywater will be disposed in s sump pit in the permafrost near the camp.	The pit will be refilled before leaving to leave no trace.
Camp	Ikulalimanngittun iqqakuuvaluin	50 kg	Such waste will be stored and carried back to Resolute for proper disposal.	N/A
Camp	Anaagun (inuin anaaguin)	3 kg per day	Pit dig in the permafrost, more than 1 km from nearest stream. This pit is near the camp, in an old river deposit (block, pebble and sand).	Paper and tissues are whenever possible bring back to Resolute for incineration. Pit will be refilled before leaving to leave no trace

Avatiliriniqmut Ayurhauingit:

While in Resolute we will go the the Tudjaat COOP to buy supplies (food) and some camp equipment. In the field the camp is on an old river bed (present river at 1 km from the site). This site has been in use for more than a decade for camp during summer and we reuse the same area to prevent local disturbance spreading. The place will be clean-up (pits refilled, garbage out) before we leave. During research we use ATV in trails or over hard rock to prevent tracks. We are careful/proactive to not disturb wildlife.

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

Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga

Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga

Miscellaneous Project Information

Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit

Tamatkiumayunik Ihuikgutivaktunik

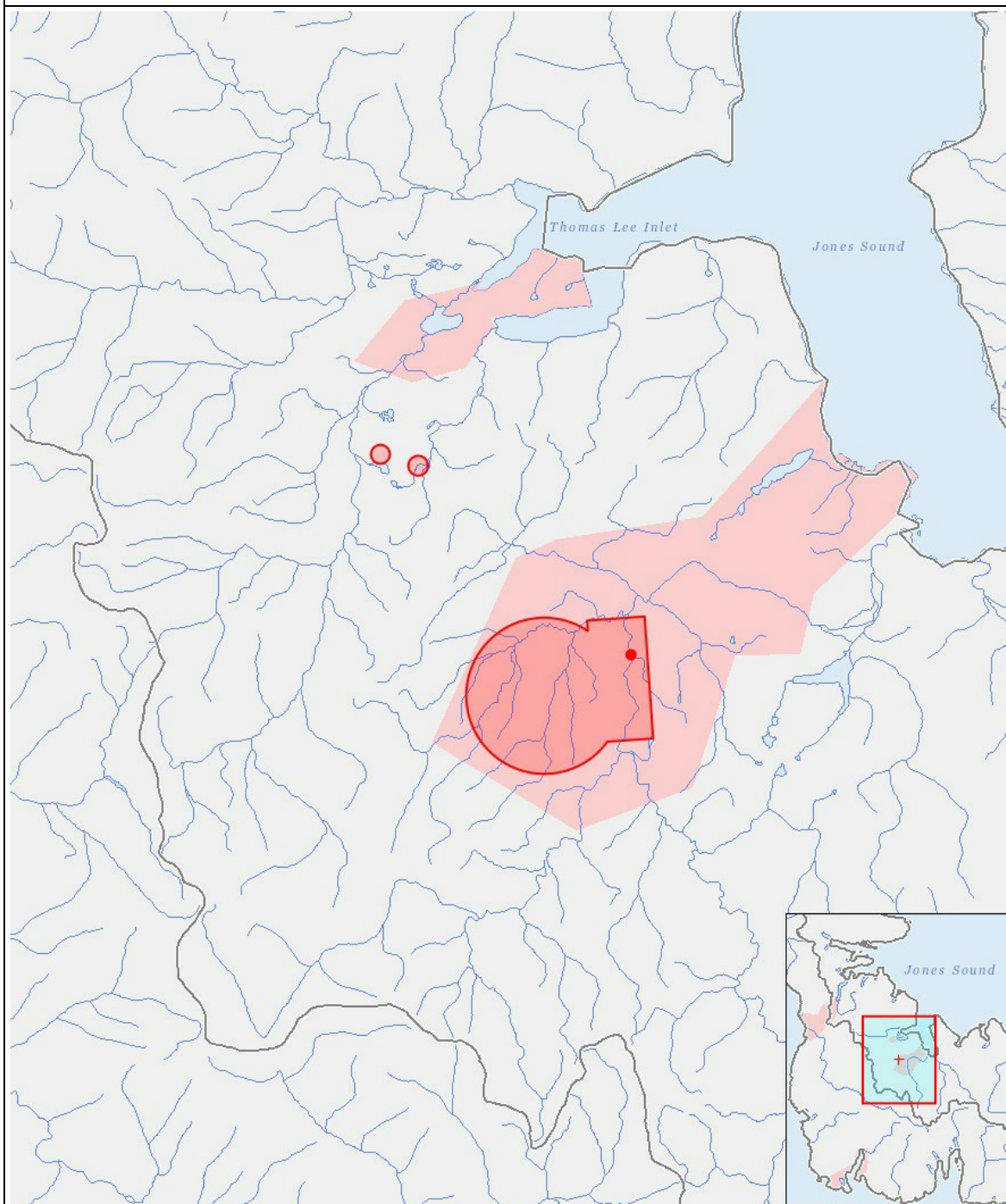
Impacts

Ilitariyauniq Avatiliriniqmut Ayurhautingit

		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																										
Camp		M	-	-	-	-	-	-	-	-	M	-	-	-		-	-	-	-	-		-	P	-	-	-
Researching		M	-	-	-	-	-	-	-	-	M	-	M	M		-	-	-	-	-		-	P	-	-	-
Piiqtauniq																										
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(P = Nakuuyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyauyuq)

Havaariyauyukhamut Nayugaa



List of Project Geometries

- | | | |
|---|---------|---|
| 1 | polygon | Haughton Crater Area (big polygon); Orbiter Lake and Lake Comet (small circles) |
| 2 | point | Haughton River Valley Camp |