



NIRB Uuktuutinga Ihivriughikhamut #126161

Mars Exploration through Analog-site Drilling (MEAD)

Uuktuutinga Qanurittuq:	New
Havaap Qanurittunia:	Scientific Research
Uuktuutinga Ublua:	Thursday, March 20, 2025
Period of operation:	from 2025-07-27 to 2025-08-06
Havauhikhaq	Brian Glass
Ikayuqtinga:	NASA Ames Research Center Bldg N269, Rm 136 Moffett Field California 94035 United States Hivayautit Nampanga:: 6502794141, Kayumiktukkut Nampanga:: 6506044036

Tukhiannaqtunik havaariyauyumayumik uqauhiuyun

Uiviitutut: Nous proposons d'utiliser une foreuse de faible puissance et peu profonde (< 1 m de profondeur) pour exciter la surface locale. Les vibrations sont ensuite captées par des géophones afin de créer une carte sismique peu profonde. Cela permettra aux futures missions martiennes et lunaires de générer des cartes de cibles avant le forage et l'échantillonnage. Le forage MEAD permettra également de prélever de petits échantillons d'environ 50 g qui alimenteront deux prototypes d'instruments de détection de vie sur Mars et contribueront à l'étude de l'évolution des populations microbiennes dans un désert polaire (cratère d'impact Haughton) en été, au-dessus et en dessous de la limite gelée (couche active, environ 0,6 m de profondeur). Les résultats de MEAD amélioreront nos connaissances sur les endroits où rechercher une éventuelle vie sur Mars, comment la cibler pour l'échantillonnage et l'efficacité de deux instruments potentiels de détection de vie.

[illegible]

Personnel on site: 7

Days on site: 10

Total Person days: 70

Operations Phase: from 2025-07-27 to 2025-08-06

Closure Phase: from 2025-08-06 to 2025-08-10

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
Base Camp Location	Camp	Inuit Owned Surface Lands	Site previously used by Western University and others	N/A	N/A
Existing Airstrip Location	Airstrip use or construction	Inuit Owned Surface Lands	Previously used strip by Twin Otters near camp	N/A	N/A
Proposed Study Range	Sampling sites	Inuit Owned Surface Lands	Impact melt breccia deposits inside the crater	N/A	N/A

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Information is not available			

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Nunavut Kavamanga, Nunavunmi Ihivriuqniqmut Timiqutigiyanga	Research Permit	Applied, Decision Pending		
Nunavut Imaligiyyit Katimayit	Application for Approval without Licence	Applied, Decision Pending		
Qikiqtani Inuit Katimayit	Land Use #320546	Applied, Decision Pending		

Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Air	DHC-6 Twin Otter from Resolute	
Land	4 ATVs on Devon	

Project accomodation types

Temporary Camp

Ihuaqutivaluin Atuqtauyukhan

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

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Kawasaki Bayou ATVs	4	1m x1m	Visit sites of scientific interest in the study area; logistics to/from airstrip.
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Shallow 1m TRIDENT drill	1	1.5m x 0.4m	Mars prototype drill (Honeybee Robotics), max 1m depth, 3cm diameter, for sampling and local seismic vibration.
2kW generator	1	1.5m x 0.4m	(a) Base camp instruments and communications (b) field site of interest (drill, instruments); located in spill kit catchments.
2kW generator	2	0.3m x 0.5m	(a) Base camp instruments and communications (b) field site of interest (drill, instruments); located in spill kit catchments.

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Gasoline	fuel	2	205	410	Liters	ATVs, 2kW generators
Propane	fuel	2	20	40	Liters	Cooking
Other	fuel	1	1	1	Liters	motor oil for ATVs

Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
0	Water pulled by bucket and used for cooking, drinking and camping.	Haughton River bank

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Waste disposal	Qirnarivyaktuq imaq	300L total	disposed in a sump dug out far from the river	filled in upon departure
Waste disposal	Ikulalimanngittun iqqakuuvaluin	3-4 large 100L trash bags	Backhaul to Resolute	coordinate disposal with Polar Shelf
Drilling	Atakuin (halumaiqtun nunan, iqqakuuvaluillu uyaqqiqivingmin)	100-200 gm per 1m sample hole	backfilled into hole after sampling	N/A
Waste disposal	Anaagun (inuin anaaguin)	50L total	disposed in a sump dug out far from the river	filled in upon departure

Avatiliriniqmut Ayurhautingit:

2cm x 1m depth boreholes at sampling sites: will be filled in ATV tracks: will stay on existing trails Wastes: gray/blackwater in sump away from river, will be filled in Trash: backhauled to Polar Shelf

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

22 million year old meteor impact crater with well-preserved gray impact rocks and no overburden.

Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga

Polar desert with almost no plant life and very rare inland sightings of seagulls or foxes. Bears occasionally traverse Devon Island and their tracks or scat are sometimes found (away from camp).

Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga

Haughton Crater has no settlements or lodges. 7km northwest of the proposed campsite is both the Mars Society habitat camp and Pascal Lee's HMP camp area, but neither is expected to be in use this year.

Miscellaneous Project Information

Re-use of campsite previously used by Western University and others

Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit

This project is primarily observational except for small drilled soil samples (< 200g each, no deeper than 1m, using a low-power electric drill with no lubricants or fluids). Traverses to study sites may leave minor ATV tracks.

Tamatkiumayunik Ihuikgutivaktunik

Reinforcement of existing ATV trails

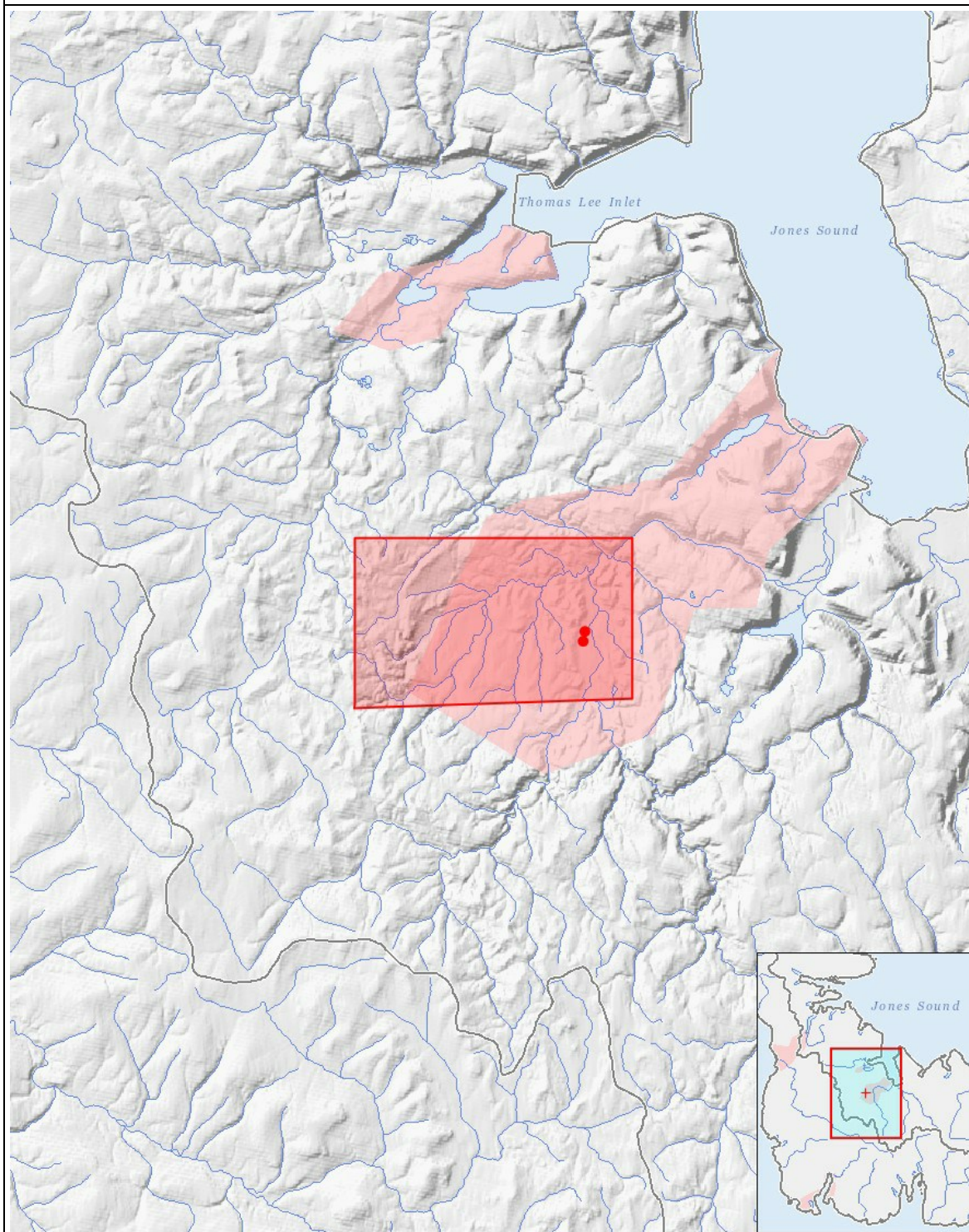
Impacts

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aulapkaininnga																									
Airstrip use or construction		-	-	-	-	-	-	-	-	-	-	-	N		-	-	-	-	-		-	-	-	-	-
Camp		-	-	-	-	-	-	-	-	N	-	-	-		-	-	-	-	-		-	-	-	-	-
Sampling sites		-	-	M	-	-	-	-	-	M	-	-	-		-	-	-	-	-		-	-	-	-	-
Piiqtauniq																									
Airstrip use or construction		-	-	-	-	-	-	-	-	-	-	-	N		-	-	-	-	-		-	-	-	-	-

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

Havaariyauyukhamut Nayugaa



List of Project Geometries

1	polygon	Proposed Study Range
2	point	Base Camp Location
3	point	Existing Airstrip Location