



NIRB Application for Screening #125594

Lake Hazen Barrel Shed Remediation and Replacement

Application Type: New

Project Type: Remediation

Application Date: 3/8/2021 9:05:55 AM

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

Proposed Authorization: from 0001-01-01 to 0001-01-01

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DETAILS

Non-technical project proposal description

English: Barrel Shed Removal and Replacement Project Summary. The Barrel Shed is located at the Lake Hazen Camp in Quttinirpaaq National Park on Ellesmere Island, Nunavut. The closest community is Grise Fiord approximately 600km away. Parks Canada wants to document and dismantle the Lake Hazen Barrel Shed and remove the barrels from the park and to install a storage unit that meets health and safety and storage requirements of the site. Some large pieces of equipment, ie) engine and bulldozer blade beside the barrel shed will also be removed and taken out of the park for disposal. The existing barrel shed is a risk to staff occupational health and safety as it is a confined space. Fuel vapours from the barrels cause poor interior air quality and the irregular shape of the structure makes it difficult to organize and locate items. There is no ventilation, no windows, or lighting in the structure. The barrel shed was constructed in the 1960's by the Defence Research Board and is designated as a cultural resource by the Parks Canada Agency. As such a Cultural Resource Impact Assessment will be conducted and determine appropriate measures to document the structure prior to it being dismantled. The shed skin will be removed. Barrels will be unstacked using a manual barrel hoist and emptied on site the level the footprint of the shed or airstrip. Empty barrels will be flown out of the park for disposal. Foot print will be levelled. A small amount of soil from the barrels is contaminated with fuel. The contaminated soil will be deposited into the existing land farm for treatment. Materials and equipment flying in and out of the park will be shuttled from the site to the airstrip by snowmobile and qamutik, UTV or ATV and trailer. Currently, all other structures in camp are at capacity, a new shed will be erected on a new foot print. The new shed will act as cold storage for food, equipment, and non-burnable waste until it can be flown out. The approximate footprint of the barrel shed is 8.5m x 5.0m. The new shed will be approximately 4.5x4m and will have wood footings and a plywood floor. The project will begin in May of 2021 and is expected to take place between May and August annually until 2023. However, it may take additional seasons to fly out the remaining empty barrels. Staffing levels are estimated at 2 park staff with 15 days on site, and 2 field unit staff, with 10 days on site in 2021 and 2022. Successive years will only require regular staffing of the camp. Existing infrastructure at the Lake Hazen camp (ie kitchen with water and grey water systems, sleepers, toilets and incinerator) will be used by staff conducting work on site. Black human waste and burnable garbage are incinerated on site via an industrial diesel fired unit. Non-burnable garbage is packed and stored in animal proof containers / buildings until it can be flown out. All personnel, materials, equipment and waste that cannot be managed on site are brought in and out of camp by twin otter fixed wing plane or helicopter. Lake Hazen camp is a Zone 3 site that allows for mechanized travel. Snowmobile and qamutik, ATV/trailer or UTV will be used to shuttle materials around camp, to and from the airstrip and landfarm. A gantry crane and chain hoist will be used to remove the top layer of barrels to the ground and extract the ground level barrels. A grinder may also be required to cut large/heavy pieces of old equipment into manageable sizes to remove them by plane. (ie: bulldozer blade, engine and push frame). Empty Barrels will be flown out to Resolute Bay where they will be cleaned, crushed and sent for disposal. The Quttinirpaaq Joint Park Management Committee voted in favour on February 14 2017 and was on site in 2018 and supports the removal of the barrel shed and the construction of a smaller, safe storage shed.

French: NA

[illegible]

Post-Closure Phase: from to

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Lake Hazen Camp - Quttinirpaaq National Park	Site Cleanup/Remediation	Crown	The Barrel shed and the replacement shed are within a Zone 3 area within the existing footprint of the camp. Lake Hazen Camp was constructed by the Defence Research Board in the 50's. The Site was sampled in the late 90's and remediation of contaminated soils was completed on site in the early 2000's. The existing landfarm was constructed for this purpose and will be used to remediate the naphtha contaminated soils from the barrel shed.	The barrel shed has been designated as a cultural resource, by Parks Canada. A Cultural Resource Impact Assessment will determine how best to document the resource prior to its removal. It is located beside another cultural resource building: an Attwell Shelter installed by the Defence Research Board. Removal of the barrel shed will not effect the Attwell Shelter. There are a number of archeological sites in the surrounding area several kilometers away, but none in the zone 3 area of camp.	Lake Hazen Camp is in Quttinirpaaq national Park. The closest community of Grise Fiord is over 600km away.
Lake Hazen Camp - Quttinirpaaq National Park	Landfarm	Crown	The Barrel Shed was constructed by the Defense Research Board out of old fuel drums. Soil samples have been taken and shown a small and localized level of naphtha contamination. The contaminated soils will be taken to the on site landfarm for remediation. We will work with the Royal Military College to determine the appropriate buffer outside of the identified contaminated area to ensure the contaminated soils are captured and	There are a number of archeological sites in the surrounding area several kilometers away, but none in the zone 3 area of camp.	Lake Hazen Camp is in Quttinirpaaq national Park. The closest community of Grise Fiord is over 600km away.

			placed in the landfarm as well as appropriate remediation measures		
Lake Hazen Camp - Quttinirpaaq National Park	Camp	Crown	Lake Hazen Camp was constructed by the Defence Research Board in the 50's. Parks Canada has used this area to support park operations and research since the 80's. I consists of a kitchen, sleeping quarters, office, toilets, outbuildings and a laboratory. These facilities will be used by the staff staying on site.	There are a number of archeological sites in the surrounding area several kilometers away, but none in the zone 3 area of camp.	Lake Hazen Camp is in Quttinirpaaq national Park. The closest community of Grise Fiord is over 600km away.
Lake Hazen Camp - Quttinirpaaq National Park	Other	Crown	The Barrel shed has been used to store equipment to support camp and park operations. Constructing a new shed of approximate 4.5x4m in size will replace the old barrel shed and used for the same purpose.	There are a number of archeological sites in the surrounding area several kilometers away, but none in the zone 3 area of camp.	Lake Hazen Camp is in Quttinirpaaq National Park. The closest community of Grise Fiord is over 600km away.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Grise Fiord	Liza Ningiuk	Quttinirpaaq Joint Parks Management Committee	2017-02-14
Resolute Bay	Tabitha Mullin	Quttinirpaaq Joint Parks Management Committee	2017-02-14
Pangnirtung	David Kooneeliusie	Quttinirpaaq Joint Parks Management Committee	2017-02-14
Grise Fiord	Liza Ningiuk	Joint Quttinirpaaq Park Management Committee	2018-06-26
Resolute Bay	Tabitha Mullin	Joint Quttinirpaaq Park Management Committee	2018-06-26
Pond Inlet	Ludy Pudluk	Joint Quttinirpaaq Park Management Committee	2018-06-26

Authorizations

Indicate the areas in which the project is located:

North Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Parks Canada	Conformity Determination and Environmental Impact Assessment	Active	2021-03-02	
Parks Canada	Cultural Resource Impact Assessment	Active		
Parks Canada	Aircraft Landing Permit	Not Yet Applied		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	All access to Quttinirpaaq is by air. Staff, materials, equipment and waste are transported by Twin Otter, DC3 or Helicopter	
Land	Materials and equipment flying in and out of the park will be shuttled from the site to the airstrip by snowmobile and qamutik, UTV or ATV and trailer.	

Project accomodation types

Permanent Camp

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
grinder	1	12	cut up large peices of equipment for removal
UTV	1	8ftx4ft	move materials between airstrip and camp
ATV and Trailer	1	8ftx4ft	Move materials between airstrip and camp
Snowmobile and qamutik	1	2ftx16ft	move materials around camp
chain hoist	1	2x2ft	lift barrels from the shed
gantry crane	1	10x10ft	unstack barrels from the shed
hand and power tools	20	12	construct new shed

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Propane	fuel	8	100	800	Lbs	camp kitchen appliances
Diesel	fuel	6	205	1230	Liters	tent heaters and camp incinerator
Gasoline	fuel	4	205	820	Liters	fuel for atv, utv, snowmobile

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0	Potable water will be supplied by the existing system in camp. Usage is approx.20L per person per day. 50 person days in camp per year is 1000L. This is well within the capacity of the system.	The source is Lake Hazen.

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Camp	Non-Combustible wastes	150L/yr	Packaged for air transport out of the park and disposed of in Resolute Landfill.	Remove from Park
Site Cleanup/Remediation	Non-Combustible wastes	100 empty metal drums, 2500lbs of metal waste	empty barrels and pieces of the push arm and bulldozer blade will be flown out for cleaning, crushing and shipped south for recycling.	drums will be cleaned and crushed in Resolute
Landfarm	Overburden (organic soil, waste material, tailings)	1000L	contaminated soils will be removed by hand and placed in the existing landfarm.	biological agents and rototilling are used to assist in the breakdown of hydrocarbons
Camp	Sewage (human waste)	80L / yr	on-site diesel fired incineration.	Incineration

Environmental Impacts:

See The attached Project Description

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

Approximately 100 old fuel barrels will be removed from the park. Contaminated soils from the structure will be remediated in the existing landfarm on site. Several large old pieces of equipment ie) push bar, engine and bulldozer blade will be removed from the park.

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

Description of Existing Environment: Physical Environment

Lake Hazen Camp consists of the barrel shed, laboratory, fuel shed, 2 sleepers, office and toilets. The Barrel shed and the replacement shed are within a Zone 3 area within the existing footprint of the camp. Lake Hazen Camp was constructed by the Defense Research Board in the 50's and has been used by Parks Canada and researchers since the 80's.

Description of Existing Environment: Biological Environment

The Barrel Shed is approximately 80m from the shore of Lake Hazen. A small seasonal stream also runs behind it <50m away. Lake Hazen is an important habitat for Arctic char. Peary Caribou and Polar Bear are present in Quttinirpaaq National Park. No Known denning or calving grounds are in the immediate area of the camp. The Lake Hazen thermal oasis is used by many bird and waterfowl species to nest and raise young. Many bird species use the immediate surrounding area however none are known to nest in camp. On occasion some adults with chicks wonder thru camp. Muskox are common in the area.

Description of Existing Environment: Socio-economic Environment

There are a number of archeological sites and areas of importance to Inuit along the shores of Lake Hazen but none in the zone 3 area of camp.

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

The removal of the barrel shed is an impact because it is a cultural resource. Mitigations will be determined thru a Cultural Resource Impact Assessment by Parks Canada to identify how best to document the heritage value prior to its removal. The Lake Hazen Camp was established in the 50's and has been used ever since. The camp area is primarily sand and has some compaction around buildings and walkways. One trail from the airstrip to the camp and one trail from camp to the fuel cache, landfarm and incinerator area on the other end of the airstrip are used to minimize disturbance and compaction in additional areas. Aircraft must fly at a minimum height of 2000ft when in the park to avoid wildlife disturbance. Dust and noise from the use of equipment to shuttle materials will be kept to a minimum by taking the fewest trips possible and staying on the existing trails and airstrip. Low impact / Leave no Trace principles are used in camp and all staff contactors and visitors are provided with a park orientation that reviews low impact camping practices, correct behaviors to avoid and manage wildlife encounters and how to respect archeological sites.

Cumulative Effects

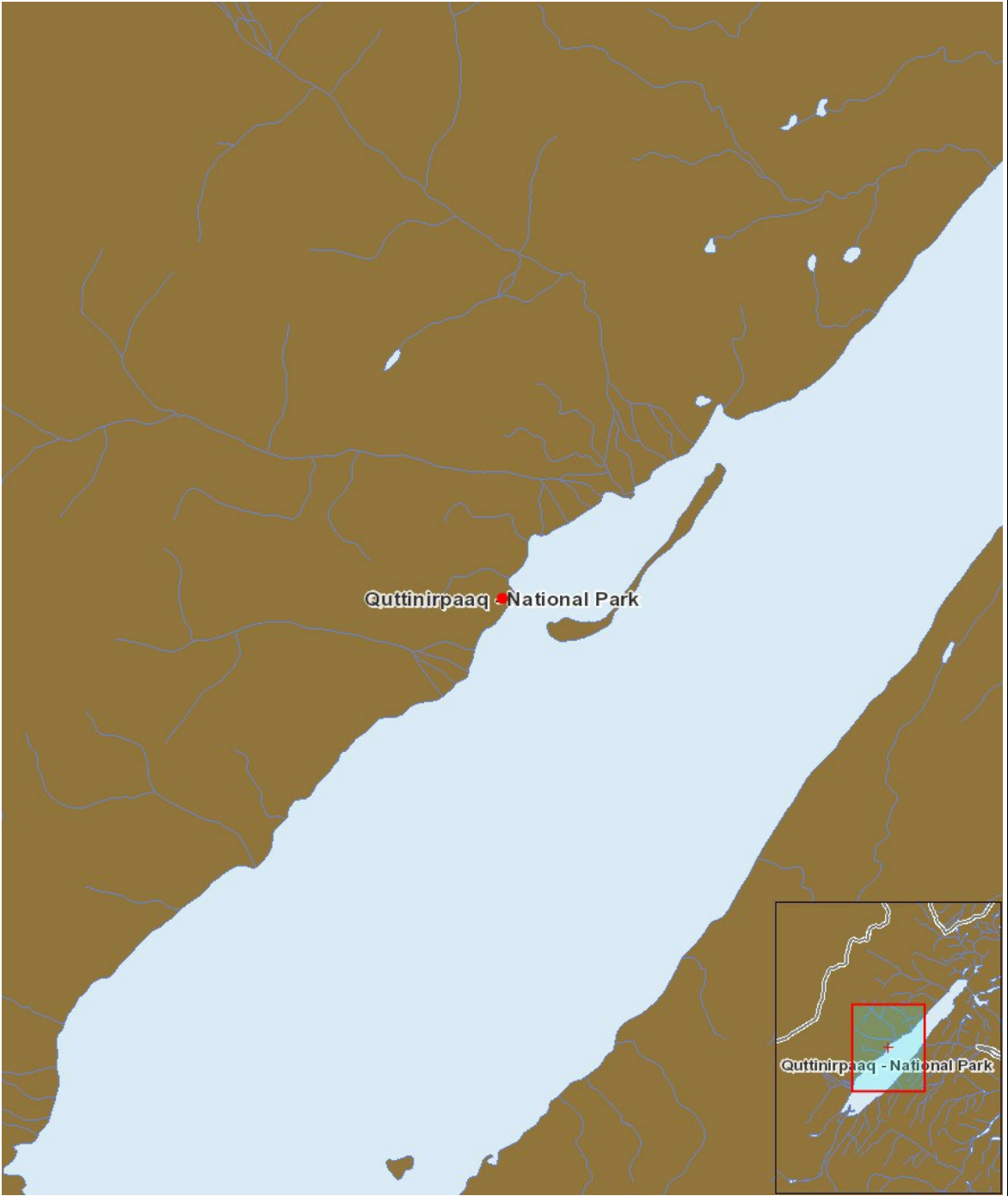
Impacts

Identification of Environmental Impacts

	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	
Construction																										
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Operation																										
Camp		M	-	-	-	-	-	-	-	-	-	-	-	N		-	M	M	-	-		-	-	-	-	-
Landfarm		-	-	-	-	-	-	-	-	-	P	-	-	-		-	-	-	-	-		-	-	-	-	-
Site Cleanup/Remediation		P	-	-	-	-	-	-	-	-	P	-	-	-		-	U	U	-	-		-	P	-	-	P
Decommissioning																										
Landfarm		-	-	-	-	-	-	-	-	-	P	-	-	-		-	-	-	-	-		-	-	-	-	-
Site Cleanup/Remediation		P	-	-	-	-	-	-	-	-	P	-	-	-		-	U	U	-	-		-	P	-	-	P

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	point	Lake Hazen Camp - Quttinirpaaq National Park
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