



כ^ב פ^פ צ^צ ד^ד ז^ז

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Site Cleanup/Remediation

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ᐅᓕᓂᑦ ᐃᓪᓴᐅᐸᐱᓄᐅᓗ: 6/5/2019 10:00:43 AM

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

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Λαμβάνονται ως δεδομένα:

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Canada

ᐃᓴᑲᑦᑐᐃᑦᑎᑦ: 867-975-4638, ᓱᑲᓯᑦᑭᑦ:

The North Water Research Station was established on Coburg Island of the Nirjutiqarvik National Wildlife Area in the 1960's. The research station was operated by a group that included McGill University, the University of Calgary Arctic Institute, the Department of Fisheries and Oceans and Energy Mines and Resources of the Government of Canada. Operations ceased in the 1980s. Over the years, numerous fuel drums, propane tanks and other materials have been left behind and the research station has fallen into a state of disrepair. In the early 2000's, a remediation project was conducted to clean-up any remaining contaminants and to compact and remove debris. Unfortunately the project was not completed. While the site is now clear of contamination, there are 150+ empty fuel drums, several 100 lb propane tanks, and other debris remaining. With the support of the Polar Continental Shelf Project, the Canadian Wildlife Service and the Nirjutiqarvik Area Co-Management Committee will conduct a clean-up of the site. A team of six members will travel to the site where they will set-up a small temporary tent camp. Over a period of up to two weeks, the crew will dig out any fuel drums that have been partially buried by sand or frozen in ice, and haul the drums and other debris across a small ravine over to the landing strip. The drums and debris will be hauled out by twin otter and taken to Resolute Bay. Because a number of the fuel drums have been crushed and all drums are empty, we anticipate that approximately 14 round trip twin otter flights to/from the site from Resolute Bay will be required. All fuel drums and other debris will be packaged up in Resolute and shipped out via sealift. Local members from Grise Fiord and possibly Resolute Bay will be hired to participate in the project. The research station will be dismantled and if suitable all non-toxic components will be burned. If burning is not an option, it will be shipped out with the other debris. It is our hope to complete the clean-up in time for a late fall/early winter open house in the community of Grise Fiord to showcase the site and the committee's management plans for the National Wildlife Area. In addition, a team of two researchers from the University of Waterloo will join our team for a period of 3-5 days. They are conducting a research project to 1) provide new age, thermal, and pressure constraints related to the crustal architecture of units exposed on eastern Devon Island and southeastern Ellesmere Islands; and 2) evaluate the usage of remote sensing images and spectral data to predict the bedrock geology of eastern Devon Island, Coburg Island and southeastern Ellesmere Islands. At Coburg Island (Nirjutiqarvik NWA), they will be collecting 30-50 rock samples which weigh 0.5 - 1 kg each using a simple rock hammer. In addition to the collection of the rock samples, they will conduct a mapping exercise using GPS points and a table to map out the different types of rocks present at the site. An ATV and a zodiac will be used to travel around the island to get to various sites.

ᐅᐃᐱᑎᓚ: La station de recherche des eaux du Nord a été créée dans les années 1960 sur l'île Coburg de la réserve nationale de faune du Nirjutiqarvik. La station de recherche était exploitée par un groupe comprenant l'Université McGill, l'Arctic Institute de l'Université de Calgary, le ministère des Pêches et des Océans et le ministère de l'Énergie, Mines et Ressources du gouvernement du Canada. Les opérations ont cessé dans les années 1980. Au fil des ans, de nombreux fûts de carburant, réservoirs de propane et autres matériaux ont été oubliés et la station de recherche est en très mauvais état. Au début des années 2000, un projet d'assainissement a été mené pour nettoyer tous les contaminants restants et pour compacter et éliminer les débris. Malheureusement, le projet n'a pas été achevé. Bien que le site ne soit plus contaminé, il reste plus de 150 fûts de carburant vides, plusieurs réservoirs de propane de 100 lb et d'autres débris. Avec le soutien du Projet du plateau continental polaire, le Service canadien de la faune et le Comité de cogestion de la région de Nirjutiqarvik procéderont à un nettoyage du site. Une équipe de six membres se rendra sur le site où ils installeront un petit camp de tentes temporaire. Au cours d'une période pouvant aller jusqu'à deux semaines, l'équipage extraira tous les fûts de carburant partiellement enfouis sous le sable ou dans la glace, et les transportera à travers un petit ravin jusqu'à la piste. Les tambours et les débris seront sortis par une loutre jumelle et transportés à Resolute Bay. Étant donné qu'un certain nombre de fûts de carburant ont été écrasés et que tous les fûts sont vides, nous prévoyons qu'il faudra environ 14 vols aller-retour à bord de loutres jumelles à partir du site à partir de Resolute Bay.

[illegible]

Personnel on site: 6
Days on site: 14
Total Person days: 84

Operations Phase: from 2019-07-26 to 2019-08-31

$$\Lambda \subset \mathbb{N} \triangleleft \mathbb{N} \xrightarrow{\sigma} \mathbb{N} \xrightarrow{\sigma^b} \mathbb{N}^c$$

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Nirjutiqarvik National Wildlife Area - Eastern shore	Site Cleanup/Remediation	Crown	In the 1960s the North Water Research Station was established. Operations ceased in the 1980s. A clean-up was conducted in the early 2000s but did not get completed.	There are a few old tent rings down the end of the beach. The clean-up is well away from these.	120 km SE of Grise Fiord. Located within a National Wildlife Area
Nirjutiqarvik National Wildlife Area - Eastern shore	Researching	Crown	The Nirjutiqarvik National Wildlife Area was established in 1995. The Canadian Shield in this area consists mainly of precambrian metamorphic rocks. There are conflicting reports of whether this rocks are part of the Rae Province or whether the rocks in this region of the Canadian Shield represents another tectonic domain.	There are a few tent rings down at the end of the beach. Research will not be conducted in that area.	120 km SE of Grise Fiord. Located within a National Wildlife Area.

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ᐱᐅᔪᐱᑦᕈᑦ	Marty Kuluguqtuq	Nirjutiqarvik Area Co- Management Committee	2019-06-04

$\epsilon \Delta^{\alpha} j^{\beta} \wedge J^{\alpha} e^{\beta} \dot{N} \quad \nabla^{\alpha} r^{\beta} C D P L \dot{\chi}^{\gamma}$

உரிமையாளர் அல்லது அங்கீகரிக்கப்பட்ட நபர்:

North Baffin

$\epsilon \Delta^{\alpha} j^c \wedge J^{\flat} e_D \dot{n} \lrcorner R^{\flat} r^{\flat} C D P L \downarrow^c$

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Project transportation types

Transportation Type	How to Access the Site	Length of Use
Air	Twin Otter	
Water	Zodiac with 30 hp motor	
Land	ATVs - 440 cc	

Project accomodation types

Temporary Camp

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zodiac	1	14 foot	transport
Yamaha outboard 4 stroke	1	30 hp	For zodiac
ATV	2	450 cc	travel around the area and haul debris
Twin Otter	1	15 m	Transport to/from the island, haul debris out

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Propane	fuel	2	20	40	Lbs	heating, cooking
Gasoline	fuel	4	20	80	Liters	for zodiac and atvs
	fuel	1	4	4	Liters	naptha for cooking

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0	use of water buckets	near by ponds, rivers

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$$\Delta^b C d_{\sigma} \sim \Delta^{\epsilon} \sigma^{\epsilon b}$$

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Site Cleanup/Remediation	ፈጣሪ ፈጣሪ	280 litres	Pour into a pit and bury prior to departure.	lime
Site Cleanup/Remediation	የፍጥነት ማስፈጸም	672 litres	cat holes, covered with dirt	lime

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Any impact resulting from this project will be minimal and temporary. At the most there may be temporary disturbance of the wildlife traveling through the area. The overall result of this project will be to reverse the environmental impacts of years of research leaving behind their fuel drums and other trash. The camp will be a leave no trace camp and as a result of the clean-up we will leave the area looking better than it did before we got there.

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 11: Municipal Development

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Coburg Island, where the clean-up is intended to occur is located within the Nirjutiqarvik National Wildlife Area. Immediately adjacent to the island is the Prince Charlotte Monument, a small island just off the south-eastern tip. The National Wildlife Area also hosts a portion of the North Water Polynya.

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The island is the site of significant seabird colonies (Thick-billed Murre, Black-legged Kittiwake and Northern Fulmar. Princess Charlottes Monument, hosts the northernmost breeding colony of the Atlantic Puffin. Polar bears are common in the area and a variety of marine species frequent the waters around the island. The area in which the clean-up will be conducted is on a raised beach off the eastern shoreline of the island. The area is gravelly with limited vegetation. The raised beach drops down onto a lower beach that is eroding from the waves. There is a small network of ponds to the west of the beach and a small creek that drains into the ocean between the research station and the airstrip.

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The site is 120 km southeast of Grise Fiord, it's nearest community. Residents rarely go there given the distance, but have traveled there for hunting and also to collect Thick-billed Murre eggs from the colony. There have been some presumably ancient tent rings observed in the area. It is believed that Greenland Inuit have traveled to the site regularly in the past. Currently it is largely visited by tourists on cruise ships. The island is immediately adjacent to the North Water Polynya, an area of significant are of cultural and ecological importance for Inuit of Canada and of Greenland. At certain points throughout the year, the polynya extends into the marine boundary of the NWA.

Miscellaneous Project Information

[illegible]

There will be temporary disturbance at the site with the occurrence of up to 15 flights into the site to transport people and remove debris (fuel drums, propane cylinders, and other garbage). Pilots will be instructed to follow the seabird colony setback guidelines that ECCC submitted to the Nunavut Planning Commission for land use planning. Overall impacts will be minimal given the location of the clean-up and the benefits of the clean-up will by far outweigh any impacts from the temporary disturbance.

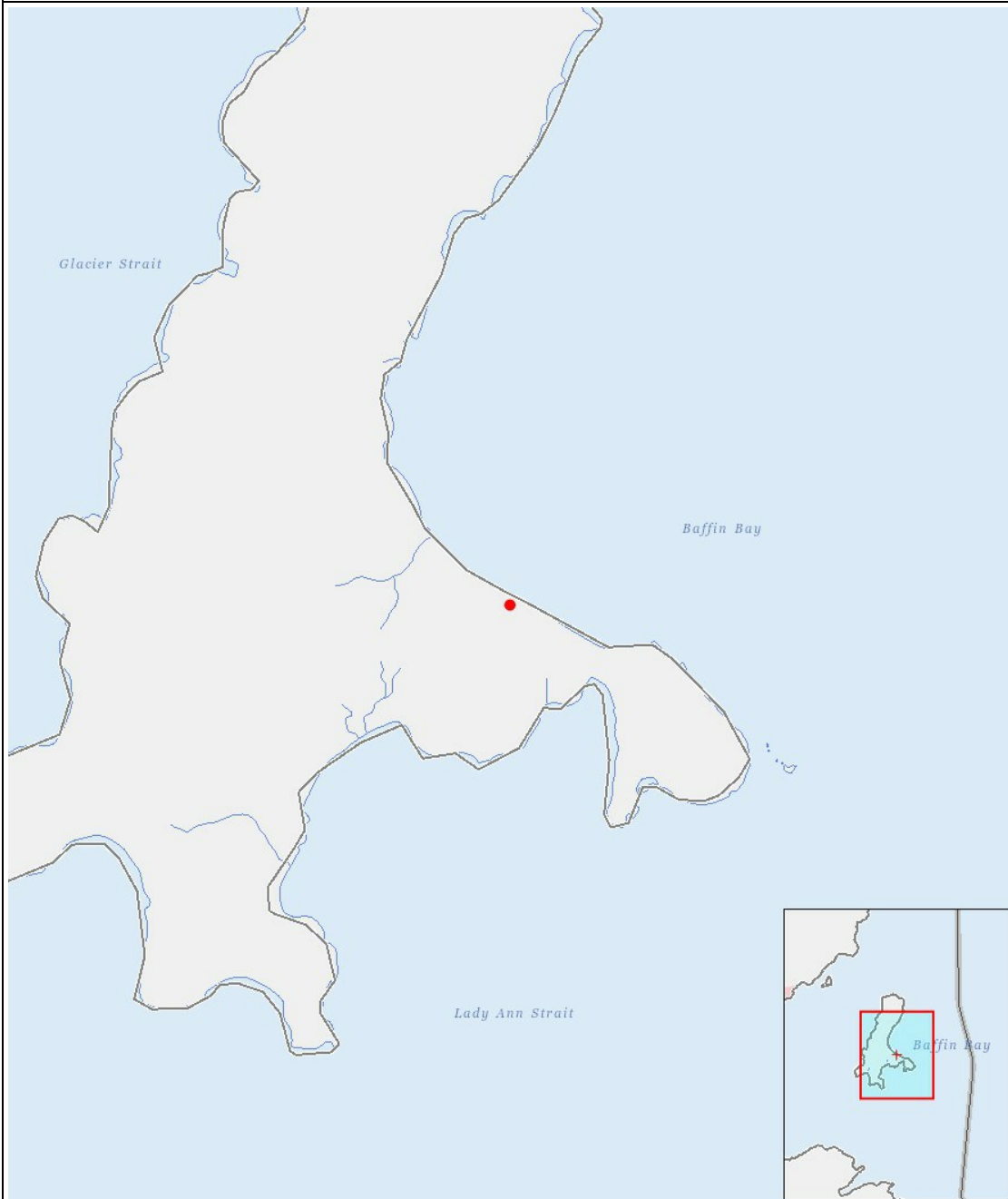
Cumulative Effects

I do not anticipate that there will be any cumulative effects. The only impact will be the reclamation of a site that is long overdue after years of researchers left their debris behind. The impact will only be beneficial.

Impacts

$\mathcal{L}(\mathcal{A}) \cap \mathcal{L}(\mathcal{B}) = \mathcal{L}(\mathcal{A} \cap \mathcal{B})$

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$$(P = \langle b \rangle \Delta \langle p \rangle \langle \tau \rangle \langle a \rangle \langle b \rangle^c, N = \langle b \rangle \langle \tau \rangle \langle \tau \rangle \langle \Delta \rangle \langle a \rangle \langle b \rangle^c \langle \Delta \rangle \langle \tau \rangle \langle \tau \rangle \langle \tau \rangle \langle \Delta \rangle \langle a \rangle \langle b \rangle^c, M = \langle b \rangle \langle \tau \rangle \langle \tau \rangle \langle \Delta \rangle \langle a \rangle \langle b \rangle^c \langle \Delta \rangle \langle \tau \rangle \langle \tau \rangle \langle \tau \rangle \langle \Delta \rangle \langle a \rangle \langle b \rangle^c, U = \langle b \rangle \langle \tau \rangle \langle \tau \rangle \langle \Delta \rangle \langle a \rangle \langle b \rangle^c)$$



List of Project Geometries

1 point Nirjutiqarvik National Wildlife Area - Eastern shore