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Period of operation: from 0001-01-01 to 0001-01-01
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$\epsilon_b \Delta^c \dot{\bar{N}}_0 \sigma^b \wedge c_n d\epsilon^f b^g d n d^a l^a \sigma^b$

Joint Task Force North (JTFN) will conduct Operation NANOOK-NUNALIVUT 2020 (Op NA-NU 20) from 21 February to 31 March, 2020, based out of Resolute Bay and Rankin Inlet, Nunavut. The overall aim is to further enhance the Canadian Armed Forces' (CAF) knowledge and capacity to operate in austere locations and challenging environments, while allowing the CAF to demonstrate their ability to effectively respond to safety and security issues in the Arctic. Op NA-NU 20 will conduct patrols on the land, on the sea ice, and in the air. It will consist of approximately 300 CAF personnel and will include collaboration with international partners. To facilitate the conduct of Op NA-NU 20, JTFN will establish a Task Force Headquarters in Resolute Bay consisting of approximately 10 members with an additional 40 support personnel. In Resolute Bay, the Canadian Army will be supported by members of 1 Canadian Ranger Patrol Group (CRPG) for a total of approximately 200 personnel. Patrols will be performed on the sea ice in the vicinity of Resolute Bay, conducting training in arctic survival skills. Two live fire ranges will be conducted in the vicinity of Resolute. In Rankin Inlet a dive team consisting of approximately 60 personnel will conduct under-ice diving operations with international partners. Diving operation will also focus on ice breaching capabilities and will involve the use of explosives to understand the options for breaking through ice for diver access to the sea. CC-177 (Globemaster), CC-138 (Twin Otter), and CC-130 (Hercules) aircraft, based in Resolute will provide transportation, resupply and casualty evacuation services if required. In addition to the above project description submitted for review, CAF is looking to add below specifics: 1. Defence Research group (DRDC) wants to be allowed to use pyro technique in Resolute bay. The pyro they want to use are simple distress flares and they mentioned that they already have an agreement with RCMP to dispose of any misfire flare; 2. The reserve in Resolute Bay would like to have permission to burn their ration wrapping (cardboard box) to reduce the amount of garbage they'll have to bring back - so a permit for open sky fires is required and needs to be added to the application; 3. Both the reserve and 12 RBC would like to establish a fuel cache of up to 12,000L for their long range patrols. They can't provide the exact location at this moment but 12 RBC would need it for their patrol from Resolute Bay to Polaris and 35 GBC (reserve) would need to cache fuel for their patrol from Rankin Inlet to Chesterfield 4. The divers have provided the specs of explosives they were hoping to use: They are looking at using only C4 and no shape charges, including: 1. C4 Blocks X 10 (0.53 Kg of explosive/blocks) 2. Detonation cord X 60m; 3. Electric detonator X 5; 4. Time fuze M700 X 25m; 5. Igniter M-60 X 5; 6. Non-electric detonator X 5. By not including the linear shape charges it significantly reduces the amount of explosive being used and reduces the danger area to 300m radius.

▷ΔΑΠΝΟ^c: Not applicable

[illegible]

Operations Phase: from 2020-02-20 to 2020-03-31

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

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OP NUNALIVUT 2020	Other	Crown	N/A	N/A	N/A

[illegible]

მეც რტ ^ყ	დწ ^ც	ბჯ ^ტ პდ ^ყ ნწ ^რ ტ ^ყ	ყბ ^ლ ჯ ჯ ^ყ ნც ^დ ე ^დ ლ ^დ წ ^რ ს ^ბ
Information is not available			

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Kivalliq
North Baffin

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Information is not available				

Project transportation types

Transportation Type	ᑭᑦᑭᑦᑭᑦᑭᑦᑭᑦ	Length of Use
Air	CC-177 (Globemaster), CC-138 (Twin Otter), and CC-130 (Hercules)	
Land	by foot	

Project accomodation types

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Λ⁵Δ^c Δ^aΓ²Δ^{5b} Δ^{5b}CDσD⁴Δ^{5b} Δ^cΔ^{5b}ΓDΠΔ^c Δ^jCDΔ^c, Γ^cΔ^cΠ^c, Δ^{5b}Δ^cΔ^jΔ^{5b}, Δ^cΔ^c Δ^cΔ^cΔ^cΔ^c

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ΔL^{9b} ΔD^{9b} CD^{9b} ΔL^{9b} ΔD^{9b}

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Information is not available				

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Two personal visited Rankin Inlet to discuss the potential of conducting an explosives range during OP NANU with an official from the local Municipal Office. Our intent is to gain local knowledge on preferred location, impact to the environment and local species, impact to food sources, and to ascertain the general thoughts from the community on the prospect of an explosives range. Detailed EOD/UXO plan: No actual military ordnance, only bulk explosives and explosive accessories, will be used during the explosives range. As such, the possibility of a resulting UXO and a subsequent EOD plan does not exist. However, the possibility of a misfire does exist. In the event of a misfire, we will follow appropriate CAF procedures. Standard misfire wait times will apply (30mins for non-electric misfires, 10mins for electric misfires). On completion of misfire wait times, the RSO only will investigate the misfire and determine the most suitable course of action. The misfired initiation set will be replaced with a new initiation set. Detonation will be attempted with the new initiation set. The intent is to trial two separate techniques to explosively open a hole. The first employs a directional shape charge while the second employs a bore hole in the ice and the explosives are placed under water. The storage of the explosives will be in a sea container located at the FOL. Standard mitigation measures (bubble curtain) will not be employed to reduce the effect on the marine environment. However, there are natural environmental mitigation measures based on the chosen location. Due to the increased depth (~33m) of the chosen site, disturbance to the seabed will be less than in shallower depths. The chosen location is surrounded by islands with steep terrain. The location of the islands in relation to the detonation site will help to both provide frontal protection to personnel and to minimize propagation of the blast-wave toward the community.

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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sea ice, frozen/ice covered shoreline

[illegible]

unknown

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N/A

Miscellaneous Project Information

உதா. $\Delta^{\text{5b}} \text{CD} \sigma^{\text{5f}} \text{r}^{\text{c}}$ $\Delta^{\text{b}} \text{r}^{\text{5b}} \text{CD} \text{r}^{\text{c}} \text{L}^{\text{c}}$ $\text{r}^{\text{5b}} \Delta^{\text{c}} \text{r}^{\text{c}} \sigma^{\text{5f}} \text{r}^{\text{c}}$ $\text{C} \text{CD} \text{r}^{\text{c}} \text{r}^{\text{5b}} \text{CD} \sigma^{\text{5f}} \sigma^{\text{5f}} \text{r}^{\text{c}}$ r^{c}

Impacts are intended to be minimal - small holes in ice. Mitigation is to make blasting of ice minimal to disturb only small portion of ice and nothing else around it.

Cumulative Effects

unkown

Impacts

$\underline{a} \rightarrow \underline{a} \Delta^{\mathfrak{b}} C \triangleright \sigma^{\mathfrak{b}} \mathfrak{r}^C$ $\triangleleft \mathfrak{e} \cap \Gamma \triangleright C \dot{\sigma}^C \triangleright^C$ $\triangleleft^b \triangleright^{\mathfrak{b}} C \triangleright \mathfrak{r} L \mathfrak{r}^C$

Physical														Biological														Socio-Economic													
Designated environmental areas														Wildlife, including habitat and migration patterns														Archaeological and cultural historic sites													
Ground stability														Birds, including habitat and migration patterns														Employment													
Permafrost														Aquatic species, incl. habitat and migration/spawning														Community wellness													
Hydrology / Limnology														Wildlife protected areas														Community infrastructure													
Water quality														Vegetation														Human health													
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														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																											

$$(P = \langle b \rangle \Delta \langle \Gamma \rangle \cap \langle \Delta \rangle \langle \Gamma \rangle^c, N = \langle b \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c, M = \langle b \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c, U = \langle b \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c \langle \Delta \rangle \langle \Gamma \rangle^c)$$



List of Project Geometries

1	point	OP NUNALIVUT 2020
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