



## **NIRB Application for Screening #125595**

### **Quarries in Arctic Bay**

**Application Type:** New

**Project Type:** Pits and Quarries

**Application Date:** 3/9/2021 11:20:38 AM

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

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

**Project Proponent:** Rita Sewornu  
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## DETAILS

### Non-technical project proposal description

English: This project is being proposed by the Planning and Lands Division of the Department of Community and Government Services, Government of Nunavut on behalf of the Municipal Corporation of the Hamlet of Arctic Bay. This proposed project consists of four (4) quarry sites identified as Quarry 1, Quarry 2 and Quarry 3 and Quarry 5. Quarry 5 which is included in this application in error was already screened by NIRB in the past (refer to NIRB FILE No: 10QN050). The proposed project will entail the following activities: 1. site preparation (removing of the topsoil and overburden), 2. Extraction and Processing of the resources (excavating of the granular materials as well as crushing, screening, and stockpiling the materials), 3. Closure and Remediation (restoration of the quarry sites). All the quarry sites are within the municipal boundary of the Hamlet of Arctic Bay. They contained granular materials that are extracted for construction purposes, and the maintenance of roads and the airstrip in the Hamlet. No permanent structure will be constructed in or near the quarries. However, temporary buildings to house materials required for quarry operations such as tools and small equipment may be constructed. The site may have a mobile rock crusher, screener, and counting equipment. At least five (5) or less people may be on the site at a given time. A CAT loader will load aggregate into a dump truck. These dump trucks will then transport the aggregate to its desired location within the community, for immediate use or stock-piled for future use. There is an existing access road to all the quarry sites. This application is for the renewal of a Quarry Administration Agreement (QAA) between the Government of Nunavut and the Hamlet of Arctic Bay and eventual transfer of the quarries to the Hamlet. The QAA will delegate the management of the quarry sites including permitting, receiving fees, monitoring, and remediation in accordance with the Commissioner's Lands Act and Regulation to the Hamlet of Arctic Bay. The quarry sites contain gravel, sand, silt, and riprap suitable for construction purposes, roads, and airstrip maintenance, making these sites very beneficial for the growth of the community. In the next few years, major projects are anticipated for the community including the construction of a Small Craft Harbour, the maintenance of the Nanisivik Highway and the construction of a new Co-op hotel. These projects will require different types and volumes of granular materials. These sites are in reasonable proximity to Arctic Bay, which results in easier access for the residents of the community to retrieve gravel. Proximity to the community also minimizes costs to the contractors and the Hamlet since equipment has quicker access to the quarry sites. These quarry sites were identified and selected through geotechnical study conducted by the Government. These sites are suitable due to their aggregate reserves, the quality of the aggregates, and reasonable proximity to the community. The quarry sites will remain active until all the aggregate is depleted. The Municipality will use portion of the proceeds from quarry permit fees to remediate the area to a point in which the area's vegetation can grow back. The quarry sites proposed in this project are located within the municipal boundary of the Hamlet of Arctic Bay. Quarry 1, Quarry 2, and Quarry 3 is approximately 7 km, 6 Km and 5 Km from the Hamlet, respectively. There are no known protected sites that is close to these quarry sites. Quarry 2 and Quarry 3 are accessible by Road R60 Plan 4120 and Quarry 1 is accessible by Road R16 Plan 4120. The quarries will be in used until the aggregates are depleted. In effect, these quarries will be operated on a multi-year basis. The Hamlet does not have specified operating times for quarries. Operations including loading, hauling, and excavating may occur late in the evenings, but usually cease at approximately 9:00 PM. This allows for maximum extraction during the limited season. Use and frequency of the quarries will be sporadic as it will depend on the maintenance and construction schedule for that particular year. However, most activities will be in the summer and the fall months.

French: Résumé non technique du projet de carrière d'Arctic Bay Introduction Ce projet est proposé par la division de la planification et des terres du ministère des Services communautaires et gouvernementaux, gouvernement du Nunavut, au nom de la corporation municipale du hameau d'Arctic Bay. Description du projet Le projet proposé comprend quatre (4) sites de carrières identifiés comme étant la carrière 1, la carrière 2, la carrière 3 et la carrière 5. La carrière 5, qui est incluse par erreur dans cette demande, a déjà fait l'objet d'un examen préalable par la CNER dans le passé (voir le dossier de la CNER no : 10QN050). Le projet proposé comprendra les activités suivantes : 1. la préparation du site (enlèvement de la terre végétale et des morts-terrains); 2. extraction et transformation des ressources (excavation des matériaux granulaires ainsi que concassage, criblage et stockage des matériaux); 3. fermeture et assainissement (réhabilitation des sites de carrières). Tous les sites de carrières se trouvent à l'intérieur des limites municipales du hameau d'Arctic Bay. Ils contenaient des matériaux granulaires qui sont extraits aux fins de construction et d'entretien des routes et de la piste d'atterrissage du hameau. Aucune structure permanente ne sera construite dans les carrières ou à proximité. Toutefois, des bâtiments temporaires destinés à abriter les matériaux nécessaires à l'exploitation de la carrière, tels que les outils et l'équipement léger, peuvent être construits. Le site peut disposer d'un concasseur de pierres mobile, d'un crible et d'un équipement de comptage. Au moins cinq (5) personnes ou moins peuvent se trouver sur le site à un moment donné. Une chargeuse CAT chargera l'agrégat dans un camion-benne. Ces camions-bennes transporteront ensuite les agrégats à l'endroit souhaité au sein de la collectivité, pour une utilisation immédiate ou un stockage en vue d'une utilisation ultérieure. Il existe une route d'accès à tous les sites de carrières. Importance du projet Cette demande vise le renouvellement d'une entente sur l'administration des carrières (EAC) entre le gouvernement du Nunavut et le hameau

[illegible]

Operations Phase: from 2021-06-01 to 2030-07-01

## Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Arctic Bay	Quarry/Borrow pit	Commissioners	Currently used for the extraction of granular materials	Unknown	Quarry 1 to the hamlet – 7km Quarry 2 to the Hamlet – 6km Quarry 3 to the Hamlet – 5km

## Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Arctic Bay	Deborah Johnson	Municipal Corporation of the Hamlet of Arctic Bay	2019-09-01

## Authorizations

Indicate the areas in which the project is located:

North Baffin

### Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Government of Nunavut, Community Government & Services	Quarry applications are approved by the Hamlet and Permit are issued by the Commissioner	Active	2019-10-01	

### Project transportation types

Transportation Type	Proposed Use	Length of Use
Land	Loader and dumpsters will be used in hauling the aggregate	

### Project accommodation types

Community

## Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Excavator	1	3000mm x 4075mm	To extract aggregates
Loader	1	3000mm x 4075mm	To load and haul aggregates
Jaw Crusher	1	3000mm x 4075mm	To crush aggregates
Screening machines	1	3000mm x 4075mm	To screen aggregates

## Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Gasoline	fuel	5	100	500	Liters	To power machines

## Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0		

# Waste

## Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Quarry/Borrow pit	Overburden (organic soil, waste material, tailings)	Unknown	It will be stored on site and used to reclaim the site later	N/A

### Environmental Impacts:

These sites will be used to extract aggregate (Sand, Gravel, riprap, and silt) to be used for construction projects in the community of Arctic Bay. Stockpiling of aggregate may occur if a project requires aggregate but will not be permanent. A road already exists to the sites, so construction of a road is not required. There is a tendency of minor slumping to occur due to the landscape but will be levelled off once the quarries are depleted. Once the sites are depleted of essential aggregate, the quarry will be levelled off to avoid any steep ditches using sand, silt and any other undesirable aggregate. No water will be used in this project and no waste will be dumped into any water source. The runoff from this site will be all-natural material mainly dust and sand in which runoff of this material already occurs in nature. No plans for snow accumulation exist since any changes in snow drifting in this area from extraction of aggregate will be minimal (if any). No fuel will be stored at these locations, yet a spill contingency plan is in place in case of any unforeseen spill from equipment used on site. In the unlikely event that a transportation vehicle's (dump truck/loader) fuel tank is punctured, the Municipality will call the NU 24-hour spill report line at (867) 920-8130. The Municipality's contact information is Municipality of Arctic Bay, (867) 439-9917 Dust Control Measures - Regular washing of extraction, processing, and transport equipment. Reducing haul trips and limiting speeds on unpaved roads. Wetting material prior to processing or loading. Covering stockpiles, conveyor belts, and loads in trucks. Locating stockpiles in locations that limit their exposure to wind. proper loading of trucks. Avoid scheduling loading, unloading, and blasting activities on a windy day. Re-vegetating disturbed areas as soon as possible to reduce erosion and minimize dust.



# **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**

### **Description of Existing Environment: Physical Environment**

The quarry site is not designated as protected neither is it close to parks or protected area. The ground is pretty level and stable. Generally, the dominant surface unit consists of colluvium made of sand and gravel layers up to 4 m thick on top of pre-existing washed till deposits below the marine limit. A thin peat layer (5 to 25 cm) overlies the colluvial deposit. Affected by periglacial processes such as gelifluction lobes and frost boils. Ice wedges occasionally present in the near surface permafrost

### **Description of Existing Environment: Biological Environment**

The tundra around Arctic Bay is home to vibrant dwarf rosy coloured fireweed and fluffy Arctic cotton. You may also see purple bladder campions pink clusters of wintergreen Arctic purple saxifrage yellow marsh saxifrage Arctic daisies mauve harebells yellow Arctic poppiestars chickweed

### **Description of Existing Environment: Socio-economic Environment**

Site not located near archaeological and cultural historic sites. The quarry will contribute to the socio-economic development of Arctic Bay by providing the community with aggregates for constructional works.

### **Miscellaneous Project Information**

Please refer to the Quarry Management Plan

### **Identification of Impacts and Proposed Mitigation Measures**

These sites will be used to extract aggregate (Sand, Gravel, riprap, and silt) to be used for construction projects in the community of Arctic Bay. Stockpiling of aggregate may occur if a project requires aggregate but will not be permanent. A road already exists to the sites, so construction of a road is not required. There is a tendency of minor slumping to occur due to the landscape but will be levelled off once the quarries are depleted. Once the sites are depleted of essential aggregate, the quarry will be levelled off to avoid any steep ditches using sand, silt and any other undesirable aggregate. No water will be used in this project and no waste will be dumped into any water source. The runoff from this site will be all-natural material mainly dust and sand in which runoff of this material already occurs in nature. No plans for snow accumulation exist since any changes in snow drifting in this area from extraction of aggregate will be minimal (if any). No fuel will be stored at these locations, yet a spill contingency plan is in place in case of any unforeseen spill from equipment used on site. In the unlikely event that a transportation vehicle's (dump truck/loader) fuel tank is punctured, the Municipality will call the NU 24-hour spill report line at (867) 920-8130. The Municipality's contact information is Municipality of Arctic Bay, (867) 439-9917. Dust Control Measures - Regular washing of extraction, processing, and transport equipment. Reducing haul trips and limiting speeds on unpaved roads. Wetting material prior to processing or loading. Covering stockpiles, conveyor belts, and loads in trucks. Locating stockpiles in locations that limit their

exposure to wind. proper loading of trucks. Avoid scheduling loading, unloading, and blasting activities on a windy day. Re-vegetating disturbed areas as soon as possible to reduce erosion and minimize dust. Erosion Control Measures - Progressive site stabilization will be implemented as soon as practically possible and always maintained during the operation of the quarries. Please see the quarry management plan for more details.

### **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
<b>Construction</b>																										
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<b>Operation</b>																										
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<b>Decommissioning</b>																										
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(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

## Project Location



## List of Project Geometries

1	polygon	Arctic Bay
2	polygon	Arctic Bay
3	polygon	Arctic Bay
4	polygon	Arctic Bay
5	point	Arctic Bay
6	point	Arctic Bay
7	point	Arctic Bay
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