



NIRB Application for Screening #125562

Quarry sites KM 8,15,16,18,20

Application Type: New

Project Type: Pits and Quarries

Application Date: 9/10/2020 11:57:22 AM

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

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

Project Proponent: Randy Mercer
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DETAILS

Non-technical project proposal description

English:

Quarry sites KM 8,15,16,18, and 20 are new sites being proposed by the Hamlet of Rankin Inlet to extract sand, gravel, pit-run, and other quarry material to meet the construction demands of the community. All sites are located north-west of the community of Rankin Inlet along the road known locally as “Diane road”. The name of the sites is derived from their distance from Rankin Inlet. For example, KM 8 is approximately 8 kilometers from the center of Rankin Inlet. Existing quarries the community uses are either depleted or near-depleted, therefore it was necessary to propose these new quarry sites. The use of aggregate will vary widely depending on circumstance. The Hamlet will use it for municipal purposes such as road construction and maintenance. The public will use it for private purposes such as landscaping and grading. They will be used in the summer/fall months (June-October) of each year until all aggregate is extracted. The frequency of use will depend on the construction projects in Rankin Inlet for that year. All sites are located within the Rankin Inlet municipal boundary on untitled municipal land. This type of land is administered by The Commissioner of Nunavut for the use and benefit of the municipality as dictated by article 14 of the Nunavut Land Claims Agreement. Once approval for the quarries from the Nunavut Impact Review Board is obtained, The Commissioner will go into a quarry administration agreement (QAA) with the Hamlet. This will allow the Hamlet to issue quarry permits instead of The Commissioner. Permit fees will be stored in a Hamlet financial account which will be used to maintain the road to the quarry site, cover administrative costs, provide enforcement and supervision, and remediation. The route of Diane road is sufficient to access all sites except for KM 8 and 15. These sites will require an additional road to be construction that branches off Diane Road. KM 8 will require 132 metres by 8 metre and KM 15 will require 1.3 kilometres by 8 metre of new road to be constructed. Diane road has an approximate width of 3 metres which is not sufficient to accommodate two-way heavy equipment traffic. To mitigate this, the Diane road will be widened to 8 metres. All sites have similar characteristics except for KM 8 and 16. KM 8 contains 4 private cabins within its boundaries. The Hamlet will determine the owners of these cabins and assist them in relocating. KM 8 also has a grave located approximately 75 metres south of the boundary. Precautions will be taken to ensure the grave is not disturbed during quarry operations. These precautions are outlined in the Quarry Management Plan. KM 16 contains one private cabin which will be relocated with the assistance from the Hamlet. Track excavators, wheel loaders, dump trucks, and a screener of varying make and models will be used to extract and haul aggregate from the quarry sites. No blasting of rock outcrops is planned. The estimate area and volume of material is as follows: KM 8: Area: 102,838 square metres (m²) | Volume: 70,000 cubic metres (m³) KM 15: Area: 497,841 m² | Volume: 75,000 m³ KM 16: Area: 168,284 m² | Volume: 75,000 m³ KM 18: Area: 103,864 m² | Volume: 140,000 m³ KM 20: Area: 472,958 m² | Volume: 800,000 m³ KM 8 will be used first for quarry material, then KM 15/16 and so forth. Once a site is depleted of useable material, quarry operations cease. Steep slopes will be levelled to a safe angle by the Hamlet. Any ditches will be filled and levelled with the quarry base. All mobile equipment will be removed. Unnatural waste, debris, scrap, and other garbage will be removed. Due to limited capacity and resources, replanting is not feasible. KM 8,15,16,18, and 20 already having an existing road and their proximity to the community of Rankin Inlet made them excellent option for new quarry sites for the Hamlet. Further details related to these sites can be found in the Dust Management, Spill Contingency, and Quarry Management plans attached to the Nunavut Impact Review Board application.

French: NIL

[illegible]

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
KM8 boundary	Quarry/Borrow pit	Commissioners	KM 8 has no prior site history except for 4 private cabins within the boundary	There is no known Archeological/Paleontological value within the boundary. However, 75 metres south of the boundary contains a grave. The engravings mentioned the person died in 2016. Its assumed that is when the grave was created.	KM8 is located approximately 8 kilometres north-west from the community of Rankin Inlet. There is no protected sites except for the grave mentioned above within the boundary.
KM15 boundary	Quarry/Borrow pit	Commissioners	KM15 had no prior use.	There is no known Archeological/Paleontological value within the boundary	KM15 is located approximately 15 kilometres north-west from the community of Rankin Inlet. There is no protected sites within the boundary.
KM16 boundary	Quarry/Borrow pit	Commissioners	KM 16 has no prior site history except for 1 private cabin within the boundary	There is no known Archeological/Paleontological value within the boundary	KM16 is located approximately 16 kilometres north-west from the community of Rankin Inlet. There is no protected sites within the boundary.
KM20 boundary	Quarry/Borrow pit	Commissioners	KM20 had no prior use.	There is no known Archeological/Paleontological value within the boundary	KM20 is located approximately 20 kilometres north-west from the community of Rankin Inlet. There is no protected sites within the boundary.
KM18 boundary	Quarry/Borrow pit	Commissioners	KM 18 has no prior site history .	There is no known Archeological/Paleontological value within the boundary	KM18 is located approximately 18 kilometres north-west from the community of Rankin Inlet. There is no protected sites within the boundary.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Rankin Inlet	Ashley Ymana	The Municipal Corporation of the Hamlet of Rankin Inlet	2020-08-17
Rankin Inlet	Hamlet council	The Municipal Corporation of the Hamlet of Rankin Inlet	2016-04-01

Authorizations

Indicate the areas in which the project is located:

Kivalliq

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Government of Nunavut, Community Government & Services	All quarry sites are located on untitled Municipal land which is administered by CGS. CGS is the applicant on behalf of the Hamlet of Rankin Inlet.	Active		
Hamlets and Municipalities	The Hamlet council was made aware of these sites in 2016 and no objections. Ashley Ymana, Acting Senior Administrative Officer approved CGS to proceed with this application on September 9,2020.	Active	2020-09-09	

Project transportation types

Transportation Type	Proposed Use	Length of Use
Land	Mobile equipment, such as loaders and dump trucks will use an existing road to access all quarry sites	

Project accomodation types

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
CAT Loader	1	5.7m x 2.7m x 1.5m	excavate quarry material
Dump Truck	1	8m x 2.5m x 3.4m	haul quarry material
Track Excavator	1	10m(L) x 3.2m (H) x 3.2m (W)	excavate quarry material
Screener	1	14.2m(L) x 4m(H) x 4.9m (W)	Screen undesirable aggregate and large boulders

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	1	535	535	Liters	fuel tank that attached to the CAT loader. Diesel will be taken from the community fuel station.
Diesel	fuel	1	567	567	Liters	fuel tank that attached to the Dump Truck. Diesel will be taken from the community fuel station.
Diesel	fuel	1	600	600	Liters	fuel tank that attached to the Track Excavator. Diesel will be taken from the community fuel station.
Diesel	fuel	1	276	276	Liters	fuel tank that attached to the Screener. Diesel will be taken from the community fuel station.

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
246	Hamlet water trucks will be used to take water from the Williamson lake pump house.	Williamson Lake pump house located on lot 546 plan 2542, which takes its water from the Nippisar Lake.

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)	100,000 m3	Overburden will be stockpiled for potential future use.	No additional treatment procedures

Environmental Impacts:

The natural vegetation such as moss and other arctic plants on the surface will be disturbed or destroyed within the excavation area within quarry boundaries. This is unavoidable due to the nature of quarry operations. Additional environmental impacts and the mitigation measures are outlined the Quarry Management, Spill Contingency and the dust mitigation measures Plans attached to this application.

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

The Quarry Management Plan attached to this NIRB application goes into details related to quarry operations.

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

All sites have similar terrain features and contain vegetation typically found in Nunavut such as moss and other arctic plants. KM8 is relatively flat but does contain a natural esker located along the eastern boundary. This esker is where most of the construction grade aggregate will come from. The other areas within boundary contain pit-run, sand, and other finer material that have limited uses and will be stockpiled. There are 4 recreational cabins within the boundary, which will be relocated. 75 metres south of the boundary there is a grave. Precautions outlined in the Quarry Management Plan will be enforced to ensure this grave is not disturbed during operations. KM 15 is relatively flat and is virtually undisturbed because the Diane road does not reach this site. There is a small pond with a diameter of 98 metres within the boundary. The marine biology and depth are not known. A quarry study indicated that it may be a thermokarst pond, but this is speculation. A 31 metre buffer zone between the pond and excavation will be enforced. There are two larger waterbodies located north and south of KM15. The northern waterbody has a diameter of 573 metres and the one to the south has a diameter of 371 metres. KM15 closest boundary line to either of these waterbodies is 70 metres. KM16 sits atop an elevated natural esker. The Diane road runs through the middle of KM16. There is also one 1 recreational cabin within the boundary. Besides the road and cabin, KM16 remains undisturbed and contains natural vegetation. There are large waterbodies to the east and west of the KM16 boundary. The eastern waterbody has diameter of 371 metres and the western waterbody has a diameter of 440 metres. KM16 closest boundary line to these waterbodies is 100 metres. KM18 has the Diane road running through the middle of the quarry boundary. Besides the Diane road, KM18 is untouched and contains natural vegetation. There are smaller waterbodies located to the north and south of the boundary. The northern waterbody has a diameter of 245 metres and the southern one has diameter of 200 metres. The closest boundary line to either of these water bodies is 40 metres. KM20 also has the Diane road going through the northern end of the boundary line. Besides the Diane road, this area remains undisturbed. There is a small waterbody within the boundary. It is 280 metres long and 54 metres wide. The marine biology and depth are unknown. Analyzing the satellite imaging, this waterbody seems very shallow, which assumes it is not fish bearing. 31 metre buffer zone between the waterbody and extraction will be maintained. KM20 is an elevated area that contains high grade gravel material. This is the ideal location for the Hamlet of Rankin Inlet. There is no evidence of ice lensing, ground or rock instability and seismicity within all sites. There are no heritage sites, sport and commercial fishing areas, migration routes, protected wildlife areas or sites of cultural or historical significance (besides recreational cabins), or areas of natural beauty within or around any of the quarry boundaries. Surface and bedrock geology, permafrost, and sediment and soil quality for any site is not known.

Description of Existing Environment: Biological Environment

All sites contain vegetation typically found in Nunavut such as moss and other arctic plants. KM15 had sand cranes and other waterfowl observed approximately 500 metres south-east of the boundary and KM20 had animal tracks near the boundary but no visible wildlife noted. There are no wildlife or bird migration routes nor is there any species of concern within any boundary.

Description of Existing Environment: Socio-economic Environment

The quarry sites names were derived from their approximate distance from the center of Rankin Inlet. For example, KM8 is 8 kilometres from Rankin Inlet. KM8 and 16 contain recreational cabins within their boundaries, which will be relocated prior to quarry operations. KM8 has a grave 75 metres south of the boundary. Precautions for the grave are outlined in the Quarry Management Plan. There are no archaeological or culturally significant sites within each quarry site. There is no subsistence harvesting, tourism, trapping or guiding operations in each quarry. Since the closest quarry site is 8 kilometres from Rankin Inlet, the effect of the extraction process on the well-being of the residence will be minimal.

Miscellaneous Project Information

Additional information can be seen in the Dust Management, Spill contingency and Quarry Management plans.

Identification of Impacts and Proposed Mitigation Measures

The local Hamlet will be the administrator of all sites. They will be used by both the Hamlet and the public. The Hamlet will issue quarry permits to the public and these quarry permits will come with the following conditions: No extraction of aggregate will occur within 31 metres of any waterbody. The contractor will inform the Hamlet the date and time when they plan to extract the material to ensure the Hamlet, if deemed necessary, supervise the extraction of aggregate. The extraction of aggregate and their surroundings, is done in an environmentally sound manner that is satisfactory to the Hamlet and/or NIRB. Excavation is not to occur outside of the established quarry boundary. Stockpiling of aggregate will be located at least 31 metres from any waterbody to avoid water siltation and obstruction. Access to and from the quarry site will only be done through designated roads. Once extraction of aggregate is complete then the contractor will remove all types of their equipment from the site and slops grade reduction with use of unsuitable stockpiles and uncrushed rocks. The contractor will follow the quarry plans. There will be no petroleum stored on site, but the equipment used in the extraction of aggregate such as loaders and excavators do have diesel tanks attached to them. The Hamlet and private contractors will be required to follow the Spill contingency plan.

Cumulative Effects

Since the Diane road already exists and services recreational traffic to and from Rankin Inlet. Any added cumulative effects from quarry operations relating to human activity will be minimal.

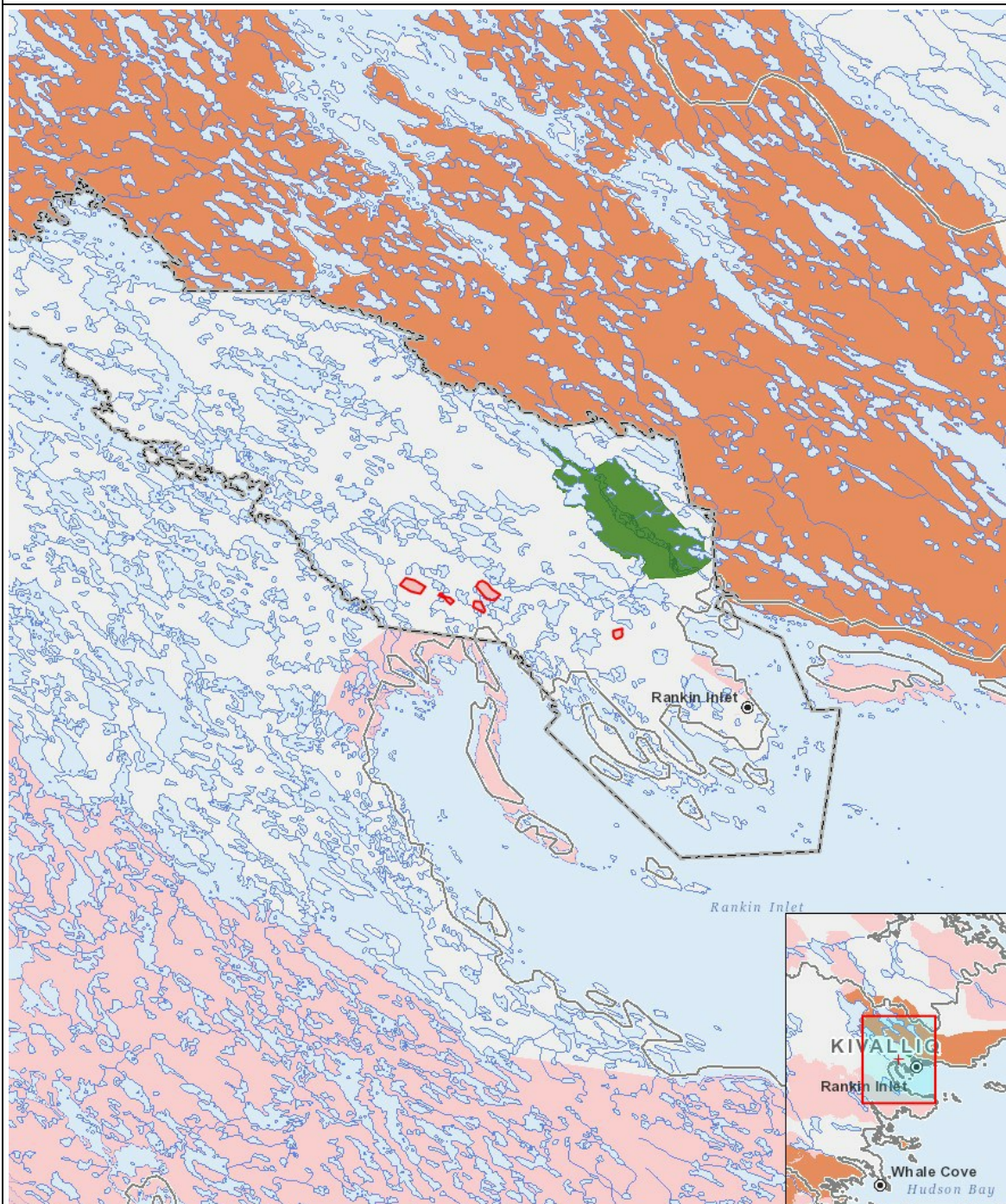
Impacts

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																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Operation																										
Quarry/Borrow pit		-	U	U	-	-	-	-	M	U	U	-	-	M		M	-	-	-	-		-	P	P	P	-
Decommissioning																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

Project Location



List of Project Geometries

1	polygon	KM8 boundary
2	polygon	KM15 boundary
3	polygon	KM16 boundary
4	polygon	KM18 boundary
5	polygon	KM20 boundary