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Preliminary Screening Determination and Reasons for Decision

Land Use Permit Application	
File Number	S21Q-004
Company	Government of the Northwest Territories – Department of Infrastructure
Project	Dhu-1 Quarry Development and Operation Project
Location	Four km northeast of the Mackenzie Valley Winter Road at km 966.6 and 16 km northwest of Tulit'a, NWT
Activity	New Quarry development and operation, construction of new winter access, use of heavy equipment, use and storage of fuel and explosives, use of a campsite
Date of Decision	November 10, 2021

1.0 Decision

In accordance with subsection 124(1) of the *Mackenzie Valley Resource Management Act* (MVRMA), the Sahtu Land and Water Board (SLWB or Board) met on November 10, 2021, to make a preliminary screening determination on the new Application from Government of the Northwest Territories – Department of Infrastructure (GNWT-INF) (Applicant) for Land Use Permit S21Q-004 (Permit)¹ for the Quarry undertaking (Project)].²

The Board has decided not to refer the proposed Project to the Mackenzie Valley Environmental Impact Review Board (the Review Board) for Environmental Assessment because, based on the evidence, it is the Board's opinion that the proposed Project will not have a significant adverse impact on the environment of be a cause of public concern.

¹See [SLWB] Online Registry www.slwb.com for [GNWT-INF \(Sahtu\) – Dhu-1 Quarry – Permit Application – September 28, 2021](#)

² The Project is the quarry undertaking, which is the proposed development, where “development” is defined in Part 5 of the MVRMA as:

“any undertaking, or any part or extension of an undertaking, that is carried out on land or water and includes an acquisition of lands pursuant to the *Historic Sites and Monuments Act* and measures carried out by a department or agency of government leading to the establishment of a park subject to the *Canada National Parks Act* or the establishment of a park under a territorial law.”

The Board’s determinations, including reasons for its decisions, are detailed in the sections 3 and 4.

2.0 List of Defined Terms and Acronyms

Applicant	Government of the Northwest Territories – Department of Infrastructure
Application	The complete application package submitted by the Applicant for Land Use Permit S21Q-004
Board	Sahtu Land and Water Board
CRP	Closure and Reclamation Plan
DFO	Department of Fisheries and Oceans Canada
GNWT	Government of the Northwest Territories
GNWT-ENR	Government of the Northwest Territories – Environment and Natural Resources
GNWT-INF	Government of the Northwest Territories – Infrastructure
GNWT-Lands	Government of the Northwest Territories – Lands
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
Minister	Minister of the Government of the Northwest Territories Department of Lands
ORS	Online Review System (www.new.onlinereviewsystem.ca)
Project	Dhu-1 Quarry undertaking which is the proposed development (as defined in Part 5 of the MVRMA). ³
QOP	Quarry Operations Plan
Review Board	Mackenzie Valley Environmental Impact Review Board
SCP	Spill Contingency Plan
SLUP	Sahtu Land Use Plan
SMZ	Special Management Zone
Standard Permit Conditions	MVLWB Standard Land Use Permit Conditions Template
TK	Traditional Knowledge
WMP	Waste Management Plan
WMMP	Wildlife Management and Monitoring Plan

3.0 Background and Scope of Screening

The Board received a new Type A Land Use Permit application (Application) from GNWT – Department of Infrastructure (GNWT-INF) on September 17, 2021, for the construction and operation of the Dhu-1 Quarry and 4 km winter access road (the Project). The purpose of the Project is to produce and stockpile up to 600,000 m³ of crushed rock (“material”) for use in the Great Bear River Bridge Construction Project, with potential for use by other applicants for local construction Projects.

Pre-application engagement began early June 2021 with an in-person meeting held in Tulit’a with the FNRR. A traditional knowledge study was requested and GNWT-INF commissioned FNRR to complete

³ “development” is defined in Part 5 of the MVRMA as:

“any undertaking, or any part or extension of an undertaking, that is carried out on land or water and includes an acquisition of lands pursuant to the *Historic Sites and Monuments Act* and measures carried out by a department or agency of government leading to the establishment of a park subject to the *Canada National Parks Act* or the establishment of a park under a territorial law.”

the study. In total, ten knowledge holders/Elders familiar with the study area were interviewed. This information, to be kept CONFIDENTIAL by request of the FNRRRC, was considered in the Project design.

GNWT-INF sent pre-application engagement notification letters to the SLWB and Tuli't'a Distribution List on July 6 and 19, 2021. An Engagement Plan and Record were submitted with the Application and was reviewed and found to be in accordance with the MVLWB Policy and Guidelines for engagement.

In accordance with paragraph 125(1)(a) of the MVRMA, the Board must conduct a preliminary screening of the proposed Project to determine and report to the Review Board whether, in its opinion, the proposed Project might have a significant adverse impact on the environment or might be a cause of public concern. The details of the Board's analysis are set out in section 3 below.

3.1 Scope of Screening:

The existing biophysical environment is described, and potential impacts of Project activities were assessed on three scales:

- Project Area – the area in which Project activities and components may occur. The Project Area includes the PDA and winter access road. As such, the PDA represents the physical footprint including the area of physical disturbance.
- Local Study Area (LSA) – the area within 1.5 km of the Project footprint.
- Regional Study Area (RSA) – the area within 10 km of the Project footprint.

A portion of the proposed Project (the quarry area) lies within the Norman Range Special Management Zone (SMZ) 50 of the Sahtu Land Use Plan (SLUP). This zone encompasses several frequently used traditional, cultural and subsistence use sites, described below.

1. The new access road to be constructed north from the MVWR, is located within four to five kilometers of Bear Rock Conservation Zone (CZ) 32, a karst feature with spiritual and sacred significance to the peoples of Denendeh. Bear Rock would be considered as falling within the Regional Study Area.
2. The Willow Lake Wetlands SMZ is located 10-15 km east of the Project site. It is a travel corridor, heritage place and the site of an important seasonal camp used by the K'áálq Got'ine (Willow Lake People) for subsistence hunting, trapping, and fishing. Willow Lake Wetlands would be considered as falling at the outer limit of the Regional Study Area.
3. The Project Area may contain Heritage trails that potentially cross or intersect with the winter access road. According to the TK Study, these trails would be those that lead to Kelly (Kelley) Lake Protected Area (Land Claim) CZ 56, located over 30 km northwest of the Project site, well outside of the Regional Study Area.

The following bullet list describes a summary of potential impacts and mitigation measures as developed by the Applicant for the land use plan conformity determination and the impact and mitigation screening

and assessment and presented in the Staff Report⁴ prepared and presented to the Board for this Application:

- All proposed Project activities are permitted within the SMZ of the SLUP.
- No issues of concern with traditional land use activities and wildlife were raised in the TK Study or during engagement.
- An Archaeological Impact Assessment was completed in August 2021 with no significant resources identified and there is a process in place with the Prince of Wales Northern Heritage Centre (PWNHC) for discovery of unknown archaeological and/or burial sites.
- The Project is located outside of the Hamlet of Tulit'a drinking water catchment and sources.
- Two intermittent watercourses (without a defined Ordinary High Water Mark) will require crossing using only snowfills.
- Water withdrawal from ice-covered lakes will be below the threshold for water licence with overall low potential for impacts on water quality and quantity and on fish and fish habitat. Department of Fisheries and Oceans (DFO) protocols and assessments will be followed.
- To address potential impacts of changes to local hydrology, temperature and distribution of permafrost, and increased erosion arising from warming climate trends, an Erosion and Sediment Control Plan (ESCP) and a Permafrost Protection Plan (PPP) will be submitted for Board approval, 30 days prior to Project commencement.
- Timing for all quarry development and operation activities will be during the winter, outside of migratory bird nesting season.
- A Wildlife Management and Monitoring Plan has been prepared by GNWT- Environment and Natural Resources (ENR) in accordance with the *Wildlife Act*. The Plan contains measures to protect and avoid impact to any wildlife nests and dens, to minimize disturbance to any wildlife by restricting hunting, harassment and feeding, and to cease activities if caribou approach.
- The Project is in an area of karst topographic features with springs, sinkholes, and karst caves in proximity, within the Local Study Area. All potential quarry locations were previously screened prior to geotechnical testing to ensure no overlap with the Project Area. The quarry footprint is located at the margin of the karst feature which will provide the high-quality limestone material for construction of the Great Bear River Bridge.

⁴ See [SLWB] Online Registry www.slwb.com for [S21Q-004 – Dhu-1 Quarry Project – Staff Report 1 – Nov 10 21](#)

3.2 Public Record and Regulatory Proceeding

To assist the Board in its preliminary screening determination for the Project, the Board distributed the Application and a draft Permit for public review on October 1, 2021, inviting reviewers to provide comments and recommendations on the Applications and the preliminary screening (e.g., on impacts and mitigation measures) using the Online Review System (ORS). Comments were due October 20, with responses from the Applicant due October 26. The Board received comments and recommendations from GNWT–Lands – Sahtu Region (GNWT-Lands), and Fort Norman (Tulit’a) Renewable Resources Council (FNRRC) (attached).

Since there were no requests to extend the reviewer comment deadline, the Board is satisfied that a reasonable period of notice was given to affected communities and First Nations, as required by subsection 63(2) of the MVRMA.

The Board is also satisfied that the Délı̄nę Got’ine Government has been consulted in accordance with section 63 of the MVRMA.

4.0 Potential Impacts and Proposed Mitigations

For Board licences and permits in general, potential impacts can be mitigated through existing permit conditions, standard Board permit conditions, and/or project-specific conditions established by the Board as per the MVLWB [Standard Process for Creating New Conditions](#). These conditions may include requirements for management and monitoring plans that provide detailed information regarding the implementation of mitigation measures and the evaluation of their effectiveness.

A draft Permit was circulated for review during the regulatory proceeding, and all Parties were given the opportunity to provide comments and recommendations on the draft conditions. In finalizing the conditions, the Board will consider all the evidence provided through the regulatory proceeding.

Table 1 below summarizes:

- the potential impacts of the proposed Project;
- the concerns that were identified during the regulatory proceeding and how the Applicant addressed those concerns;
- the proposed and potential mitigations for the potential impacts; and
- the Board’s analysis of the potential impacts and proposed mitigations.

Table 1: Potential Impacts and Proposed Mitigations for the Proposed Project

BIOPHYSICAL ENVIRONMENT			
Atmospheric Environment			
Valued Component	Activity - Potential Impact	Mitigation	Residual Effects ⁵
Climate	warming trends may reduce the duration of the winter road season and affect the temperature and distribution of permafrost with the potential for changes to local hydrology and increased erosion.	<ul style="list-style-type: none"> • Permafrost Protection Plan (PPP) • Erosion and Sediment Control Plan (ESCP) 	<ul style="list-style-type: none"> • Short-term duration?⁶ • Intermittent • Seasonal • Local to Regional Study Area
Air Quality and Noise	Unavoidable impacts from operation of equipment and blasting	<ul style="list-style-type: none"> • Equipment maintenance, blast mats, speed limits, 12-hour operational day 	<ul style="list-style-type: none"> • Reversible? • Moderate magnitude
Board Analysis and Determination	Effects of warming trends will be long-term and irreversible; however, localized erosion issues resulting from permafrost instability can be mitigated with known technologies		

BIOPHYSICAL ENVIRONMENT			
Freshwater Environment			
Valued Component	Activity - Potential Impact	Mitigation	Residual Effects ⁷
Surface Water Quality	Reduced water quality from erosion, spills, waste discharge,	<ul style="list-style-type: none"> • Spill Contingency Plan (SCP) • Waste Management Plan (WMP) • SECP • Standard Permit Conditions 	<ul style="list-style-type: none"> • Medium-term duration • Intermittent • Non-season specific • Local Study Area (LSA) • Reversible • Low magnitude
Surface Water Quantity	Potential alteration to rate and volume of surface runoff Water withdrawal for winter ice road	<ul style="list-style-type: none"> • Runoff directed away from waterbodies • Water withdrawal < 100 m³ / day 	
Groundwater Quality	Potential contamination through spills, waste discharges	<ul style="list-style-type: none"> • SCP • Standard Permit Conditions 	
Fish and Fish Habitat	Spills, water withdrawal, blasting shockwaves	<ul style="list-style-type: none"> • ESCP • SCP • WMP • Standard Permit Conditions 	

⁵ **Residual Effects** are described by: • Duration, • Frequency, • Timing, • Geographic Extent, • Reversibility, • Magnitude

⁶ A question mark (?) following a residual effect, indicates where Board Staff question the assessment of potential residual effects.

⁷ **Residual Effects** are described by: • Duration, • Frequency, • Timing, • Geographic Extent, • Reversibility, • Magnitude

		<ul style="list-style-type: none"> • Blasting > 100 m from any waterbody • DFO protocols for under-ice water taking, screens on intakes 	
Board Analysis and Determination	Agreement with these assessments		

BIOPHYSICAL ENVIRONMENT			
Terrestrial Environment			
Valued Component	Activity - Potential Impact	Mitigation	Residual Effects ⁸
Terrain and Permafrost	Vegetation clearing, sumps, construction activities may alter the terrain and permafrost	<ul style="list-style-type: none"> • Quarry Operations Plan (QOP) • Avoidance of ice-rich areas • Standard Permit Conditions for winter roads, snowfills • Winter clearing to minimize disturbance 	<ul style="list-style-type: none"> • Long-term duration • Once • Non-season specific • Project Area
Vegetation and species distribution and abundance	Unavoidable vegetation clearing of 23 ha with potential loss of sensitive species	<ul style="list-style-type: none"> • Minimize disturbance footprint by restricting access to cleared areas • Clean equipment prior to mobilization to avoid non-native species introductions • Use of vegetation buffers as visual barrier and to protect riparian habitat • Save and replace organic topsoil for reclamation 	<ul style="list-style-type: none"> • Irreversible • Low to Moderate magnitude
Board Analysis and Determination	Agreement with these assessments		

BIOPHYSICAL ENVIRONMENT			
Wildlife			
Valued Component	Activity - Potential Impact	Mitigation	Residual Effects ⁹
Wildlife Habitat	Potential displacement of wildlife due to vegetation clearing and noise Potential disturbance to migratory bird nests	<ul style="list-style-type: none"> • Limit clearing to Project footprint and between Sept 1 and April 15 • Use of previously disturbed areas and cutlines where possible 	<ul style="list-style-type: none"> • Medium-term duration • Intermittent to Continuous frequency

⁸ **Residual Effects** are described by: • Duration, • Frequency, • Timing, • Geographic Extent, • Reversibility, • Magnitude

⁹ **Residual Effects** are described by: • Duration, • Frequency, • Timing, • Geographic Extent, • Reversibility, • Magnitude

		<ul style="list-style-type: none"> • Windrow and mulch brush and unsalvageable trees • Salvage larger trees for community use • Wildlife Monitors and use of setback and timing restrictions • Annual nest and den surveys prior to project activities • Wildlife Management and Monitoring Plan (WMMP) 	<ul style="list-style-type: none"> • Seasonal • Local Study Area • Reversible? • Low magnitude?
Wildlife Mortality	Potential increase due to worker presence and habituation, vehicle and equipment movement, physical destruction of bear dens, other habitat	<ul style="list-style-type: none"> • Annual nest and den surveys prior to project activities • Electric fencing, if required • Restrictions on hunting, feeding • Employee wildlife awareness program • Standard Permit Conditions for wildlife • WMMP 	
Board Analysis and Determination	Wildlife mortality is irreversible; however, may not affect the overall population. Residual impacts of wildlife displacement may be Moderate.		

HUMAN ENVIRONMENT			
Valued Component	Activity - Potential Impact	Mitigation	Residual Effects ¹⁰
Traditional and Other Land Uses	Potential loss of traditional plants, displacement of wildlife harvested for subsistence uses, and disturbance to traditional trails used to access traditional land use areas (Willow Lake and Wetlands, Kelley Lake)	<ul style="list-style-type: none"> • Mitigation measures as above • Limit clearing to Project footprint • Restricted quarry access to authorized personnel • Quarry design, development, closure to consider public safety • Signage and physical barriers • Notification of activities 	<ul style="list-style-type: none"> • Short-term duration • Intermittent • Non-seasonal specific • Local Study Area • Reversible? • Low Magnitude?
Heritage Resources	Potential for the Project development activities to disturb unknown archaeological and burial sites, springs, karst topography features – sinkholes and springs	<ul style="list-style-type: none"> • Implement 500 m setback from any known or suspected burial sites, 150 m from archaeological resources • Standard Permit Conditions for archaeological discovery 	<ul style="list-style-type: none"> • Low Magnitude?
Board Analysis and Determination	Residual impacts on loss or disruption of access to traditional lands, or loss of a previously unknown archaeological resources or burial sites, or unknown karst topography features would be irreversible and of a Moderate to High magnitude.		

¹⁰ **Residual Effects** are described by: • Duration, • Frequency, • Timing, • Geographic Extent, • Reversibility, • Magnitude

4.1 Consideration of Potential Impacts to the Environment

Based on the potential impacts and proposed mitigations identified above in Table 1, the Board considered whether the Project might have a significant adverse impact on the environment. In general, impacts of the Project on the environment can be mitigated through the use of standard permit conditions and/or project-specific conditions established by the Board as per the MVLWB [Standard Process for Creating New Conditions](#). These conditions have included requirements for management and monitoring plans that provide detailed information regarding the implementation of mitigation measures and the evaluation of their effectiveness.

A draft Permit was circulated for review during the regulatory proceeding, and all Parties were given the opportunity to provide comments and recommendations on the draft conditions. In finalizing the conditions, the Board will consider all the evidence provided through the regulatory proceeding.

4.2 Consideration of Public Concern

In addition to considering the potential impacts of the Project on the environment, the Board considered whether the Project might be a cause of public concern.

Based on the evidence provided during the regulatory proceeding, the Board did not identify any comments or issues that indicate that the Project is a cause of public concern.

5.0 Conclusion

The Board has reviewed all the evidence received during the regulatory process with respect to the Preliminary Screening of the proposed Project. Based on the evidence, it is the Board's opinion that the proposed Project activities will not have a significant adverse impact on the environment and/or will not be a cause of public concern as set out in paragraph 125(1)(a) of the MVRMA. The Board has therefore decided not to refer the proposed Project to Environmental Assessment.

If the Board does not receive a notice of referral to environmental assessment by November 21, 2021, the Board will issue the Permit on November 22, 2021.

SIGNATURE



Tanya MacIntosh

Chair, Sahtu Land and Water Board

November 10, 2021

Date