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January 28, 2022

File: MV2021X0023

Mark Cliffe-Phillips  
Mackenzie Valley Review Board  
200 Scotia Centre  
Box 938, 5102-50th Avenue  
Yellowknife NT X1A 2N7

Sent by email

Dear Mark Cliffe-Phillips,

**Re: City of Yellowknife – Notice of Preliminary Screening Determination – Application for Land Use Permit– Yellowknife – Location, NT**

The Mackenzie Valley Land and Water Board (Board) met on January 27, 2022 and considered the Application from the City of Yellowknife (the City) for Land Use Permit (Permit) for 2022 Geotechnical Investigation in accordance with the *Mackenzie Valley Resource Management Act* (MVRMA).

The Board conducted a preliminary screening based on the public record for the proceeding. Based on the evidence provided, the Board is satisfied the screening has been completed according to section 125 of the MVRMA and has decided **not to refer** the Project to environmental assessment. The Board's Preliminary Screening Determination and Reasons for Decision, as required by section 121 of the MVRMA, is attached.

If the Board does not receive notice of referral to environmental assessment, it can proceed with issuance of Permit MV2021X0023 on **Tuesday February 8, 2022**.

The Board and staff look forward to continued communications throughout the pause period. Please contact Shelagh Montgomery at (867) 766-7457 with any questions or concerns regarding this letter.

Yours sincerely,



Mavis Cli-Michaud

Chair, Mackenzie Valley Land and Water Board

BCC'd to: Akaitcho Distribution List

David Macmillan, Municipal Engineer, Public Works and Engineering, City of Yellowknife

Barb Fortin, Geological Scientist – Arctic Group, Tetra Tech Canada Inc.

Richard Hoos, Principal Consultant, Tetra Tech Canada Inc.

Attached: Preliminary Screening Determination and Reasons for Decision



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## Preliminary Screening Determination and Reasons for Decision

Land Use Permit Application	
File Number	MV2021X0023
Company	City of Yellowknife
Project	Winter Geotechnical Drilling Program 2022
Location	Yellowknife, NT
Activity	Geotechnical Drilling
Date of Decision	January 27, 2022

### 1.0 Decision

In accordance with subsection 124(1) of the *Mackenzie Valley Resource Management Act* (MVRMA), the Mackenzie Valley Land and Water Board (MVLWB or Board) met on January 27, 2022, to make a preliminary screening determination on the Application from The City of Yellowknife (The City) for Land Use Permit MV2021X0023 (Permit)<sup>1</sup> for the 2022 City of Yellowknife Geotechnical Investigation (Project).<sup>2</sup>

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 or be a cause of public concern.

The Board's determination, including reasons for its decision, are detailed in sections [3.0](#) and [4.0](#).

<sup>1</sup>See MVLWB Online Registry [www.mvlwb.com](http://www.mvlwb.com) for [City of Yellowknife – Permit Application – Dec15 21](#)

<sup>2</sup> The Project is the 2022 Geotechnical Investigation, 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."

## 2.0 List of Defined Terms and Acronyms

Applicant	City of Yellowknife
Application	The complete application package submitted by the Applicant Land Use Permit MV2021X0023
Board	Mackenzie Valley Land and Water Board
EA/EIR	Environmental Assessment/Environmental Impact Review
GNWT	Government of the Northwest Territories
GNWT-ENR	Government of the Northwest Territories – Environment and Natural Resources
GNWT-Lands	Government of the Northwest Territories – Lands
MVLWB	Mackenzie Valley Land and Water Board
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
Minister	Minister of the Government of the Northwest Territories – Lands (GNWT-Lands)
ORS	Online Review System ( <a href="http://www.new.onlinereviewssystem.ca">www.new.onlinereviewssystem.ca</a> )
Party	As per the MVLWB <a href="#">Rules of Procedures</a> , an applicant, a person, or an organization participating in the regulatory proceeding for the Applications.
Project	City of Yellowknife Winter Drilling Program, which is the proposed development (as defined in Part 5 of the MVRMA). <sup>3</sup>
Review Board	Mackenzie Valley Environmental Impact Review Board
SCP	Spill Contingency Plan
Standard Licence Conditions	MVLWB <a href="#">Standard Water Licence Conditions Template</a>
TG	Tłı̨chq Government
TK	Traditional Knowledge
WMP	Waste Management Plan

## 3.0 Background and Scope of Screening

The City applied for a Permit to conduct a winter geotechnical drilling program in support of the City’s paving program on December 15, 2021 involving specific sections of five city roads.

Approximately 20 boreholes will be advanced using an auger drill (equipped with a rock hammer) either to bedrock or to a depth where ice rich permafrost is not encountered.

There will be five City Road sections to be evaluated, the total length of roadway to be investigated is approximately 1,860 m.

The term requested is two years.

Affected Parties identified in the Application include:

- Yellowknife Dene First Nation (Dettah)
- Yellowknives Dene First Nation (Ndilq)

<sup>3</sup> “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.”

- Akaitcho IMA Implementation Office NWT Treaty 8 Tribal Corporation
- Tłıchǫ Government
- North Slave Metis

The initial engagement email was sent December 07, 2021 with follow up on to be done in January/February 2022.

Responses from Yellowknives Dene First Nation (Ndilǫ) and Yellowknives Dene First Nation (Dettah) were received and indicating that they have no issues to date with the application.

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 [4.0](#) below.

### **3.1 Scope of Screening:**

#### New Areas and Activities:

The City of Yellowknife has retained Tetra Tech to conduct a 2022 winter geotechnical drilling program involving specific sections of five City roads. Approximately 20 boreholes will be advanced using an auger drill (equipped with a rock hammer) either to bedrock or to a depth where ice rich permafrost is not encountered.

During previous drilling investigations, it has been observed that in problematic areas of Yellowknife where significant road degradation has been observed, the areas are typically underlain with an ice rich silty clay layer. The silty clay layer becomes siltier with depth which typically becomes less ice rich. Tetra Tech's field engineer will carefully log ice conditions until the relatively ice poor silt layer is reached. The five City road sections to be evaluated are as follows:

- Franklin Avenue between 44 Street and 41 Street (Franklin Hill) – approximately 400 m
- 44 Street between Franklin Ave. and the driveway for Kimberlite Career and Technical Centre (44 Street hill) – approximately 100 m
- 49A Avenue between 43 Street and 41A Street – approximately 300 m
- Deh Cho Blvd between Kam Lake Road and Ellesmere Drive – approximately 310 m
- Kam Lake Road between Coronation Drive and Curry Drive – approximately 750 m

Map figures showing the sections of roadway to be investigated are provided in Attachment A.

The total length of roadway to be Investigated is approximately 1,860 m. The City recommends a minimum 100 m spacing between boreholes for geotechnical investigations. Tetra Tech has assumed 20 boreholes will be drilled which permits a tighter spacing in areas that are identified as being of particular concern during the geotechnical review phase of the project.

A geotechnical engineer from Tetra Tech's Yellowknife office will complete a utilities locate prior to starting the site investigations. The investigations will be completed using a truck-mounted ODEX/ auger drill rig that can perform standard penetration testing.

During past investigations Tetra Tech identified blast rock in the road structure on Deh Cho Blvd. and blast rock is in some portions of Kam Lake Road. An auger drill rig is not capable of advancing through blast material, where found, so the ODEX drill will be equipped with a rock hammer to permit advance through the embankment, as necessary. The auger drill will then be used to drill and sample the soil beneath the road base.

Tetra Tech proposes to advance boreholes either to bedrock or to a depth where ice rich permafrost is not encountered. During previous drilling investigations, it has been observed that in problematic areas of Yellowknife where significant road degradation has been observed, the areas are typically underlain with an ice rich silty clay layer. The silty clay layer becomes siltier with depth which is typically becomes less ice rich. The field engineer will carefully log ice conditions until the relatively ice poor silt layer is reached.

Tetra Tech's field engineer will monitor the drilling of the boreholes and log subsurface conditions and ground ice conditions. Standard penetration testing will be performed every 1.5 m to assess the soil strength (in unfrozen soil or marginally frozen soil), and disturbed soil samples will be collected at regular intervals, or as warranted by changes in subsurface stratigraphy.

Borehole locations will be recorded by a local surveyor to determine accurate coordinates, particularly elevations. Thermistor cables will be installed in one or two boreholes to permit the measurement of ground temperature. A standpipe piezometer will be installed in one borehole to permit the measurement of groundwater, if encountered, or where considered likely to be present seasonally, depending on the borehole findings.

### **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 December 17, 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 January 7, 2022, with responses from the Applicant due January 14, 2022. The Board received comments and recommendations from Government of the Northwest Territories – Environment and Natural Resources as well as the Government of the Northwest Territories – Department of Lands (Inspector) (attached).<sup>4</sup>

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<sup>4</sup> See MLWB Online Registry for [City of Yellowknife– Review Comment Summary Table – Jan17 22](#)

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.

Pursuant to Schedule 4.1 of the Northwest Territory Métis Nation (NWTMN) Interim Measures Agreement, the Board determined that written notice was given to the NWTMN and that a reasonable period of time was allowed for NWTMN to make representations with respect to the Application.

**AND**

Pursuant to subsection 1.6, paragraphs (a) and (b) of the Akaitcho Territory Dene First Nations (ATDFN) Interim Measures Agreement, the Board determined that written notice was given to the ATDFN and that a reasonable period of time was allowed for ATDFN to make representations with respect to the Application.

#### **4.0 Potential Impacts and Proposed Mitigations**

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**

<b>Potential Impact</b>	<b>Activity</b>	<b>Proposed Mitigations</b> <i>Description of measures to reduce potential impacts, including consideration of cumulative impacts and climate change.</i>	<b>Board Analysis and Determination</b>
Soil Contamination	Mobile Equipment	The City indicated that hydrocarbon spills from mobile equipment, should they occur, would be mitigated by procedures in the Spill Contingency Plan, such as immediate containment and cleaning.	The Board staff is of the opinion that the primary risk of soil contamination is likely associated with the use of heavy equipment fueled by petroleum products. The Board noted that the Spill Contingency Plan also includes provisions for spill response resources to be located on site and spill response procedures. These requirements, combined with the vicinity of the work location to waste management service providers and heavy equipment contracting companies, are considered additional mitigation measures sufficient for the scope of work.
Loss or change in extent	Geotechnical Borehole Drilling	The City indicated that permafrost degradation is unlikely to occur, however best management practices will be followed including the backfilling of boreholes with residual drill cuttings.	The Board staff anticipates this will re-establish a protective layer and work to mitigate impacts to potential permafrost.
Changes in air quality	Mobilization and Operation of Equipment	The City indicated that temporary, localized air emissions from the drill rig equipment and pickup truck will occur. No equipment will be left to idle during the investigation. Minimal dust may be generated during the investigation and will be watered down as needed.	Based on the described mitigations, it is the Board staff opinion is that the proposed activities will not have a significant adverse impact on the environment and will not be a cause of public concern.
Increased greenhouse gases	Mobilization and Operation of Equipment	The City indicated they are of the opinion that minimal increase in greenhouse gases do not warrant specific mitigation measures.	The Board staff opinion is that the proposed activities will not have a significant adverse impact on the environment and will not be a cause of public concern.



#### 4.1 Consideration of Potential Impacts

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 may include requirements for management and monitoring plans that provide detailed information regarding the implementation of mitigation measures and the evaluation of their effectiveness.

#### 4.2 Consideration of Public Concern

In addition to considering the potential impacts of the Project, 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 is not likely to have a significant adverse impact on air, water, and/or renewable resources, and will not be a cause of public concern, as set out in paragraph 125(2)(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 February 7, 2022, the Board can issue the Permit on February 8, 2022.

SIGNATURE



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**Mavis Cli-Michaud, Chair**  
**Mackenzie Valley Land and Water Board**

January 27, 2022

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**Date**