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March 2, 2020

File: W2016E0004/W2016L8-0001

Ziaur Rahman
Manager of Surface Design and Construction
Department of Infrastructure
Government of the Northwest Territories
P.O. Box 1320
Yellowknife, NT X1A 2L9

Sent via Email

Dear Ziaur Rahman,

Re: TASR Water Monitoring Plan, Version 1.2; Quarry Operations Plan Versions 2.0 and 3.0

The Wek'èezhì Land and Water Board (WLWB or the Board) met on February 27, 2020 and considered Version 1.2 of the Government of the Northwest Territories Department of Infrastructure's (GNWT-INF) Water Monitoring Plan (WMP), as well as Versions 2.0 and 3.0 of the Quarry Operations Plan (QOP) for the Tlicho All-Season Road (TASR) Project.^{1,2,3}

Version 1.2 of the WMP was submitted to address the Board's decision on Version 1.1.⁴ The Board has approved Version 1.2 of the WMP. The Board would like to remind GNWT-INF that all in-water Construction activities must meet the criteria for total suspended solids (TSS) as outlined in Part G, Condition 14 of Water Licence W2016L8-0001.⁵

One of the revisions required for Version 1.2 of the Water Monitoring Plan was to update the plan to reflect the details of the currently approved Waste Management Plan (i.e., Version 1.2). To address this, GNWT-INF added the following text to the plan:

Sewage waste generated from camp facilities and onsite portable washrooms will be hauled to Behchokò or the City of Yellowknife for the initial months of construction and then managed on site with a sewage lagoon constructed near the camp site.

¹ See WLWB (www.wlwb.ca) Online Registry for [W2016L8-0001 - TASR - Water Monitoring Plan Version 1.2 - Jan 27 20.pdf](#)

² See WLWB Online Registry for [W2016E0004 – TASR – Quarry Operations Plan – Version 2.0 – Jan 27 20](#)

³ See WLWB Online Registry for [W2016E0004 – TASR – Quarry Operations Plan – Version 3.0 – Feb 5 20](#)

⁴ See WLWB Online Registry for [W2016L8-0001 - TASR - Water Monitoring Plan Version 1.1 - Reasons for Decision - Nov 18 19.pdf](#)

⁵ See WLWB Online Registry for [W2016L8-0001 - TASR - Water Licence - May 30 19.pdf](#)

While the Board acknowledges that the revised text reflects the approved Version 1.2 of the Waste Management Plan, the Board would like to remind GNWT-INF that the on-site sewage lagoon for the main camps, as described in the Waste Management Plan, is not yet approved.⁶

Version 2.0 and 3.0 of the QOP were submitted in response to the Board's May 30 and July 16, 2019 Board Direction.^{7,8} The QOPs included supporting geochemical and archaeological information for three (3) already developed pits (2B, 3, and 21B) and one (1) pit that is to be developed in the near future (Pit 48). Version 2.0 and 3.0 were not distributed for public review because the only new information and changes to the plans was the provision of the geochemical data to demonstrate the suitability of the borrow source material. The Board has approved Version 2.0 and Version 3.0 of the QOP with additional direction for the use of Pit 48.

Part E, Condition 14 requires that all materials used for Construction "must be obtained from an approved source and be clean and free of contaminants." In review of the supporting geochemical data provided by GNWT-INF, the Board identified that bedrock materials from Pit 48 were potentially acid generating (PAG). Although GNWT-INF plans to use only surficial (e.g., coarse sand, cobbles, and weathered rock) material, to address uncertainty related to the suitability of material from Pit 48, the Board requires the following:

- a) Bedrock material is avoided, and a 1.5 m depth/buffer of surficial material is left in place;
- b) As much as possible, surficial materials are segregated and managed such that weathered material is avoided and has limited contact with water. Weathered material should also be covered after operations/development of the pit is complete;
- c) GNWT-INF take confirmatory samples as per the QOP (i.e., at least three samples per 100,000 cubic metres removed) and submit these samples for acid-base accounting;
 - i. If results of confirmatory samples indicate no ARD potential but high total sulphate concentrations in the solids (e.g., >0.5%), submit samples for Shake Flask Extraction (SFE);
 - ii. If SFE results show exceedances of sulphate relative to screening criteria, propose a water monitoring program to monitor seepage from road embankments constructed from this material. For clarity, this program should be included in the Quarry Operations Plan.
- d) Take additional samples when changes in material characteristics occur (e.g., weathering, mineralogy, colour, grain-size) and submit for analysis as outlined above;
- e) The GNWT-INF conduct sampling required by c) or d) above (i.e., confirmatory and/or additional) by generating a composite by shift and should be representative of the material removed (i.e., shovel of material from each bucket or truckload, piling it on a clean tarp, homogenizing it, and then generate a representative sample by quartering;⁹ and

⁶ See WLWB Online Registry for [W2016L8-0001 - TASR - Waste Management Plan - Version 1.2 - Oct 8 19.pdf](#)

⁷ See WLWB Online Registry for [W2016L8-0001 - TASR - Land Use Permit and Water Licence Applications - Reasons for Decision - May 30 19](#)

⁸ See WLWB Online Registry for [W2016L8-0001 - TASR - Management Plans - Decision Letter - Jul 16 19](#)

⁹ <http://www.transportation.alberta.ca/Content/docType233/Production/ATT57.pdf>

- f) The GWNT-INF keep all Parties informed about these activities and the results of the confirmatory sampling, as part of the ongoing weekly environmental reporting.

The Board would also like to remind GNWT-INF that as per Condition #65 of Permit W2016E0004, GNWT-INF is required to submit a summary report to the Prince of Wales Northern Heritage Centre (PWNHC), the Inspector, and the Board for all Archaeological Impact Assessments that are conducted.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joe Mackenzie".

Joe Mackenzie
Chair, Wek'èezhii Land and Water Board

Copied: TASR Distribution List