

**GOVERNMENT OF THE NORTHWEST TERRITORIES**

**TECHNICAL INTERVENTION**

FOR

**CROWN-INDIGENOUS RELATIONS AND NORTHERN  
AFFAIRS CANADA – CONTAMINANTS AND REMEDIATION  
DIVISION  
RAYROCK REMEDIATION PROJECT  
TYPE A WATER LICENCE APPLICATION  
W2020L8-0003**

Submitted to:

Wek' èezhii Land and Water Board  
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## List of Acronyms

Aquatic Effects Monitoring Program	AEMP
Biochemical Oxygen Demand	BOD
Canadian Council of Ministers of the Environment	CCME
Coliform Forming Units	CFU
Constituents of Potential Concern	COPC
Confined Disposal Facility	CDF
Crown–Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division	CIRNAC - CARD
Effluent Quality Criteria	EQC
Environment and Climate Change Canada	ECCC
Government of the Northwest Territories	GNWT
Human Health and Ecological Risk Assessment	HHERA
Information Request	IR
Maximum Average Concentration	MAC
Maximum Grab Concentration	MGC
Mackenzie Valley Land and Water Board	MVLWB
Parameter of Potential Concern	POPC
Potentially Acid-Generating	PAG
Protection of Aquatic Life	PAL
Surveillance Network Program	SNP
Sediment and Erosion Control Plan	SECP
Total Dissolved Solids	TDS
Total Petroleum Hydrocarbons	TPH
Total Suspended Solids	TSS
Wek' èezhìi Land and Water Board	WLWB

## **1.0 Introduction**

The following concerns and issues have resulted from the Government of the Northwest Territories' (GNWT) review of plans, proposed monitoring programs and submissions as part of the Crown–Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division's (CIRNAC-CARD) Rayrock Remediation Project Type A Water Licence Application W2020L8-0003. This technical intervention explains GNWT's concerns and provides recommendations for the Wek' èezhii Land and Water Board (WLWB)'s consideration. Of note, this submission takes into consideration all of the documents provided during the process up to March 18, 2021.

GNWT appreciates the opportunity to express its concerns and provide recommendations and suggestions to the WLWB. GNWT intends to provide technical input at the public hearing on April 28-30, 2021 to assist the WLWB in making a decision related to the Water Licence Application.

### **1.1 Report Outline**

This technical intervention is structured to discuss components included within the Water Licence Application and supporting documents. The intervention is divided into the following sections:

Section 1 – Introduction to the technical intervention, information requests (IR) issued following the Technical Session, and GNWT's involvement in the regulatory review;

Section 2 – Discussion of GNWT recommendations related to the location of the Confined Disposal Facility (CDF);

Section 3 – Discussion of GNWT recommendations related to effluent quality criteria (EQC) for Mill Lake treated discharge and treated sewage discharge;

Section 4 – Discussion of GNWT recommendations on water monitoring programs;

Section 5 – Discussion of GNWT recommendations related to the geochemical characterization of bedrock;

Section 6 – Discussion of GNWT recommendations related to sediment and erosion control;

Section 7 – Discussion of GNWT recommendations related to in-water construction;

Section 8 - Discussion of GNWT recommendations related to closure criteria.

## **1.2 Information Requests**

Following the Technical Session held on January 26-28, 2021, there were three sets of IRs issued. The first set of IRs #1-16 was issued during the Technical Session. Information Request #17 was issued to CIRNAC-CARD on February 9, 2021. CIRNAC-CARD's response was provided on February 16, 2021 and issued for public review and comment. Parties submitted comments on March 2, 2021 and CIRNAC-CARD responded to comments on March 9, 2021. Information requests #18-21 were issued to CIRNAC-CARD on February 16, 2021 as potential scope changes were identified in CIRNAC-CARD's responses to IRs #1-16. CIRNAC-CARD submitted responses on February 24, 2021, reviewers submitted comments on March 11, 2021 and CIRNAC-CARD responded to comments on March 18, 2021.

The GNWT notes that IRs are typically not circulated for public review and comment, however it was advantageous in this case to have additional opportunities to seek information and clarity from CIRNAC-CARD on the proposed project activities.

## **2.0 Confined Disposal Facility Location**

The GNWT is concerned that the precise location for the Confined Disposal Facility (CDF) within the Mill Lake Drainage Basin is still under review and consideration and no progress in refining the location has been made throughout this process. CIRNAC-CARD indicated in response to IR #21 that there are "conditions under the sediment of Mill Lake that cannot be reasonably assessed." With no plan provided for how conditions can eventually be assessed, it is not clear if or when there will be sufficient information for the CDF to be safely designed within the Mill Lake Drainage Basin.

Prior to issuing IR #21 to CIRNAC-CARD, the Board issued IR #17 "To confirm whether the applicant is considering a different location for the Confined Disposal Facility (CDF) from that which was initially proposed in its Applications." CIRNAC-CARD responded that "the precise location of the CDF within the Mill Lake Drainage Basin is still under review and consideration, and there is a strong possibility that the final configuration will differ from the design location to allow the best fit into the natural variations in the bedrock." CIRNAC-CARD also noted that "Details on the planned location will be provided in the CDF Design Plan which will be submitted to the WLWB in accordance with the timelines communicated in response to IR #16 and that the scale and location of the blasting would be described in the CDF Design Plan and Quarry Management Plan."

In response to IR #21, CIRNAC-CARD stated that "The reason a precise location has not been provided is that, despite several years of attempts at defining conditions under the sediment of Mill Lake, there are conditions that cannot be reasonably assessed (e.g.

sub-sediment clay thickness and condition, bedrock profile, etc.) and some flexibility is required in the design to allow modification based on actual site conditions.”

In summary, despite two IRs on this topic, the lack of defined conditions under the sediment of Mill Lake, and the subsequent challenges in defining the location of the CDF are concerning to the GNWT. The design and construction of the CDF is one of the major elements of the proposed remediation work for the Rayrock site. GNWT notes that the inability to determine the exact location and configuration of the CDF is a major uncertainty in this Water Licence application.

The GNWT notes that it is not clear if alternatives to the CDF are currently being considered, or if the lack of known location for the CDF is expected to cause delays in construction. Once Mill Lake is drained, and the water treated and discharged to Sherman Lake, the contaminated sediments at the bottom of Mill Lake will be exposed. Any delays in construction of the CDF will prolong the exposure of these sediments, potentially creating additional challenges for the project.

GNWT notes that CIRNAC-CARD should provide additional information on proposed next steps for further determining the location of the CDF, as well as any other contingency options that are being investigated in the event that an appropriate location for the CDF cannot be found. This information should be provided as soon as possible as it is a major element of the Rayrock Remediation Project around which many remediation elements are designed.

It is not possible for the GNWT to fully assess the level of risk of this project without confidence that the CDF can be appropriately designed and constructed within the Mill Lake Drainage Basin. GNWT notes that it is not clear how a preliminary screening determination can be made without a location for this facility as the CDF could and potentially should be considered a disposal of waste as defined under the *Waters Act*.

Recommendation:

1. GNWT recommends that the Board include a condition in the Water Licence requiring that CIRNAC-CARD provide a schedule of, and additional information on, the proposed plan for further determining the location of the CDF within 30 days of licence issuance.
2. GNWT recommends that CIRNAC-CARD identify mitigations and control measures that will be implemented in the event of delays with CDF construction following the dewatering and treatment of Mill Lake water. These could be provided in the Sediment and Erosion Control Plan (SECP).
3. GNWT recommends that the construction of the CDF not be approved until such time as the Board approves an appropriate location, design and configuration for the facility.

The water licence should include a condition that requires the licensee to provide a final location, design and configuration of the CDF which includes an assessment of alternative locations and options for Board review and approval.

### **3.0 Effluent Quality Criteria**

This section outlines GNWT recommendations on Mill Lake treatment discharge, and treated sewage discharge.

In CIRNAC-CARD's initial application, Effluent Quality Criteria (EQC) were proposed to be in line with Canadian Council for Ministers of the Environment (CCME) protection for aquatic life (PAL). Following discussions at the Technical Session regarding discrepancies between the initial proposed set of EQC, and CIRNAC-CARD's responses to reviewer comments, IR #12 was issued to CIRNAC-CARD to present all proposed EQC and the SNP stations where they would apply. As a result, the intervention is the first opportunity that reviewers have had to comment on the EQC proposed in response to IR #12.

### **3.1 Mill Lake Water Treatment Discharge**

#### **3.1.1 Screening for Constituents of Potential Concern**

In their response to IR #12, CIRNAC-CARD presented a revised set of EQC from the initial application. CIRNAC-CARD indicated that the listed parameters with EQC reflect the Constituents of Potential Concern (COPC) from the Human Health and Ecological Risk Assessment (HHERA) for Rayrock. The COPCs identified for the risk assessment for the aquatic environment were copper, fluoride, iron, lithium, and uranium. CIRNAC-CARD also included zinc, total ammonia, nitrate and nitrite as recommended by GNWT in review comments, and further discussed by parties at the technical session.

GNWT notes that the list of proposed EQC in response to IR #12 does not include EQC for total suspended solids (TSS) or total petroleum hydrocarbons (TPH).

In relation to TSS, CIRNAC-CARD stated in their response to IR #12 that "water will be filtered to maximize TSS removal as part of the Mill Lake Water Treatment process." CIRNAC-CARD also stated that "TSS concentrations will have to be low to achieve compliance for the metals and cannot be provided as a strict value. Therefore, TSS EQCs are not required." GNWT notes that if TSS concentrations will have to be low to achieve compliance for metals, it is not clear why an EQC for TSS would not be appropriate and achievable.

Given that there will be heavy equipment operating on site conducting remediation activities, and there will be potential for hydrocarbon spills, EQC for TPH should also be included for discharge to Sherman Lake.

With the addition of EQC for TSS and TPH, GNWT supports the proposed list of parameters to have EQC for discharge to Sherman Lake.

Recommendation:

4. GNWT recommends that EQC for TSS and TPH be added to the list of EQC proposed in response to IR #12. GNWT recommends a maximum average concentration (MAC) of 15 mg/L and maximum grab concentration (MGC) of 25 mg/L for TSS, and a MAC of 5 mg/L for TPH.

### **3.1.2 Maximum Average Concentrations**

GNWT notes that the revised set of EQC proposed in response to IR #12 are for MGC, and that CIRNAC-CARD has not proposed MAC values. GNWT is concerned with the absence of proposed MAC EQC. Maximum grab concentrations are developed such that they are allowable for a short period of time, and are not designed for constant discharge to the receiving environment. This is why the MGC is typically double the MAC. GNWT notes that the proposed EQC values should be set as MAC, while the MGC values should be double the proposed MAC values.

Recommendation:

5. GNWT recommends that the proposed EQC values be included in the Water Licence as MAC.

6. GNWT recommends that the Water Licence also include MGC EQC that are double the MAC values.

### **3.1.3 Zinc EQC**

CIRNAC-CARD's response to IR #14 includes a table of water quality data for zinc in Sherman Lake with a footnote that states "The majority of results are below method detection limit". GNWT notes that based on this statement, the median value would be a better statistical representation of the water quality of Sherman Lake than an average based on a majority of results below detection.

Further, given the majority of zinc concentrations in Sherman Lake are below detection (third table in IR response #14), a more conservative EQC for zinc would be the minimum calculated guideline for Sherman Lake of 15 ug/L (second table in IR response #14).

Recommendation:

7. GNWT recommends that the zinc MAC EQC be set at 15 µg/L rather than the proposed 23 µg/L, and that MGC be set at 30 µg/L.

### **3.2 Treated Sewage Discharge to a Sump**

GNWT supports the list of parameters with EQC included for treated sewage, with some modifications recommended for the EQC values.

CIRNAC-CARD's EQC for camp wastewater were consistent between the initial application and the response to IR #12. GNWT notes that the EQC for TSS (100 mg/L) is notably higher than is typically approved in Water Licences (15 mg/L MAC and 25 mg/L MGC). CIRNAC-CARD has not provided rationale for a TSS EQC of 100 mg/L, and therefore GNWT recommends that the maximum average and maximum grab concentrations be set at 15 mg/L and 25 mg/L respectively.

GNWT notes that recent Water Licences have assigned EQC for TPH rather than mineral oil & grease. GNWT supports the value proposed for the hydrocarbon EQC, but recommends it be for TPH as is standard in recent Water Licences, rather than mineral oil & grease.

GNWT notes that the current proposed EQC for fecal coliforms is 10,000 CFU/dL. GNWT recommends that for clarity, and consistency with other licences, this EQC be presented as 10 CFU/100ml.

Recommendation:

8. GNWT recommends that the TSS limits for sewage be revised to 15 mg/L MAC and 25 mg/L MGC.

9. GNWT recommends that the EQC for mineral oil and grease be replaced with a TPH EQC of 5 mg/L MGC.

10. GNWT recommends that for clarity, and consistency with other licences, fecal coliforms EQC be presented as 10 CFU/100ml.

## **4.0 Water Quality Monitoring**

### **4.1 Surveillance Network Program Sampling Frequency**

GNWT maintains their previous recommendation that monitoring at Surveillance Network Program (SNP) stations SNP 1663-1 to SNP 1663-6 and SNP 1663-8 be completed every two weeks during open water.

In review comments on the initial application, GNWT recommended increased sampling frequency for these stations to every two weeks in order to better monitor any potential changes to the receiving environment during remediation activities. This was further discussed at the Technical Session where GNWT reiterated their recommendations.

In response to IR #13, CIRNAC-CARD provided an update to the proposed SNP. GNWT notes that the sampling frequencies for SNP stations SNP 1663-1 to SNP 1663-6 and SNP 1663-8 have not been updated from the original proposed frequency of monthly during open water.

GNWT notes that CIRNAC-CARD proposes the following 2 additional SNP stations in their response to IR #13:

- SNP 1663-10 Sherman Lake K: To test the water quality of Sherman Lake near the location of the Mill Lake water discharge to Sherman Lake and at the principal benthic sampling area. The proposed sampling frequency is monthly during open water.
- SNP 1663-11 Camp Wastewater: Compliance point for camp wastewater (all wastewater from camp operations including greywater and toilet wastes). discharge. The proposed sampling frequency is weekly.

GNWT supports the addition of the two above-noted SNP stations, and recommends that sampling occur every two weeks at SNP 1663-10 as recommended above for SNP 1663-1 to SNP 1663-6 and SNP 1663-8. GNWT notes that CIRNAC-CARD could seek to reduce this monitoring frequency at a later date, with sufficient rationale.

GNWT supports the proposed weekly sampling frequency for Camp Wastewater if discharge were to continue beyond a week.

GNWT also supports the revised sampling frequency for SNP 1663-9 New Control Lake A to monthly during open water for background water quality for regional trends.

Recommendation:

11. GNWT recommends that the sampling frequency for SNP stations 1663-1 through to 1663-6, 1663-8 and 1663-10 occur once every two weeks during open water.

## **4.2 Surface Water Runoff Control and Monitoring**

GNWT is concerned that precipitation and runoff events during remediation activities may lead to contaminated water entering the receiving environment. Any direct or indirect discharges to the receiving environment must meet the appropriate EQC.

CIRNAC-CARD's initial application states that "A drainage swale will be constructed into the bedrock and/or the residual clay lake bottom to provide surface drainage from the base of the former Mill Lake basin into Mill Creek." It also states that "The proposed remediation design is intended to minimize the ponding and accumulation of surface water in the Mill Lake basin by promoting continuous overland flow and drainage to the Mill Creek inlet and down-gradient to Sherman Lake." GNWT notes that these statements seem to imply that surface runoff will be directed to Mill Creek and Sherman Lake without any capture or treatment.

Discussion at the technical session about seepage and surface water runoff led to IR #5 for CIRNAC-CARD to "A) describe the feasibility of monitoring seepage and/or runoff" on site and "B) describe the management options for this seepage/runoff, if effects were identified in the receiving environment (i.e., at proposed SNP stations for monitor for potential effects of runoff/seepage)."

In response to IR #5, CIRNAC-CARD states that "no seepage has historically been identified through the course of several site visits/inspections since the early 2000s." It was also noted that "Flow from this area, if it occurs, will be directed to the Mill Lake basin and Mill Creek. Mill Creek has shown, since mine operation in the 1950s, that the natural peat soils in this creek have been able to attenuate metals concentrations from the Mill Lake outflow." GNWT notes that at minimum, the SNP program should include monitoring at the Mill Lake outflow to ensure that the natural peat soils are attenuating metals concentrations as expected, and that runoff water entering Sherman Lake meets EQC.

CIRNAC-CARD also states in response to IR #5 that the ability to monitor surface water runoff is complicated and that collection of runoff water would require someone to be at site during a precipitation event. GNWT notes that in order to prevent runoff from directly entering the receiving environment, CIRNAC-CARD should capture and/or direct runoff water to the Mill Lake or CDF area for collection and treatment prior to discharge to Sherman Lake.

GNWT notes that CIRNAC-CARD's response to IR #5 did not address part B of the IR. Management actions for seepage/runoff in the event of detected changes in the environment should be described in a surface water management plan submitted for review post-issuance of the Water Licence.

Recommendation:

12. GNWT recommends that CIRNAC-CARD capture and/or direct surface runoff to the Mill Lake or CDF area for collection and treatment prior to discharge to Sherman Lake.

13. GNWT recommends that if capture of surface runoff is not possible, the SNP program include a monitoring location at the Mill Lake outflow to monitor runoff entering Sherman Lake and ensure it meets EQC.

14. GNWT recommends that CIRNAC-CARD submit a Surface Water Management Plan post-issuance of the Water Licence.

### **4.3 Aquatic Effects Monitoring Program Required**

GNWT notes that an Aquatic Effects Monitoring Program (AEMP) was not provided with the Water Licence Application for review. A draft AEMP was later submitted to the Board and provided to reviewers “For Information” on December 23, 2020. CIRNAC-CARD responded to several GNWT review comments by strictly referencing draft content of the AEMP, however this document is not officially part of CIRNAC-CARD’s application, and therefore has not been reviewed as such.

At the technical session held January 26-28, 2021, GNWT offered to meet with CIRNAC-CARD to discuss the AEMP and provide input on the draft document in advance of baseline sampling to be conducted this coming open water season. As of the writing of this intervention, CIRNAC-CARD has not reached out to request this meeting.

Recommendation:

15. GNWT recommends that the AEMP be submitted to the Board post-issuance of the Water Licence for review and approval.

## **5.0 Geochemical Characterization of Bedrock**

In response to GNWT review comments on CIRNAC-CARD’s response to IR #21, CIRNAC-CARD stated that “Environmental analyses completed on bedrock samples collected to-date has not identified Potentially Acid Generating (PAG) rock. Additional bedrock sampling and analysis will occur in 2021 to confirm past findings.” GNWT notes that the planned additional bedrock sampling should be described in the Quarry Management Plan.

Additionally, CIRNAC-CARD stated that “If identified, PAG rock would be used within the CDF footprint and capped with a synthetic liner and non-PAG rock.” Details on the management and disposal of any PAG material should also be described in the Quarry Management Plan.

Recommendation:

16. GNWT recommends that geochemical criteria for defining PAG material, as well as a bedrock geochemistry monitoring plan be outlined in the Quarry Management Plan, to be submitted post-issuance of the Water Licence for review and approval of the Board.

## **6.0 Sediment and Erosion Control Plan**

### **6.1 TSS Response Framework**

In review comments submitted on the initial application, GNWT commented on action level exceedances in the SECP. CIRNAC responded that responses will depend on the sedimentation event. At the Technical Session, GNWT noted that a general response framework should be developed in advance of an action level exceedance, so that timely, mitigation responses are possible, rather than reactionary responses once a sedimentation event has occurred, potentially leading to delays in response. CIRNAC-CARD was agreeable to this suggestion.

Recommendation:

17. GNWT recommends that CIRNAC-CARD develop a general response framework for action level exceedances as part of the SECP.

### **6.2 TSS versus Turbidity Curve**

CIRNAC-CARD noted at the Technical Session that they intend to measure TSS with a field meter that can measure TSS in real time. GNWT supports the use of new technologies and equipment but is not aware of the TSS field meter and its functionality/calibration/maintenance requirements. Because of this the GNWT supports CIRNAC-CARD developing a TSS/turbidity curve that can be used to convert field measured turbidity readings to TSS values as an alternative and backup.

Recommendation:

18. GNWT supports the use of technologies that are available such as a field meter for TSS measurements, but also recommends that a site-specific TSS/turbidity curve be developed as a backup method of determining TSS in the event that the field meter malfunctions or becomes unreliable.

### **6.3 Total Metals Water Quality Sampling during Sedimentation Events**

At the Technical Session, GNWT followed up on CIRNAC-CARD's response to review comment GNWT-32, and asked if CIRNAC-CARD would be willing to sample for total metals in the event that a turbidity and/or TSS action level were exceeded, signifying a

sedimentation event. GNWT also suggested that this sampling could be described in the response framework developed for the SECP. CIRNAC-CARD noted that they would consider this when developing a response framework for the SECP.

Recommendation:

19. GNWT recommends that the Board include water quality sampling for total metals (in EQC). This would be valuable in the event of a turbidity and/or TSS action level exceedance.

## **7.0 In-Water Construction**

CIRNAC-CARD received both IR #4 and IR #19 from the Board in order to clarify if they are requesting consideration of in-water construction as part of the scope of its Application. Although dock expansion in Sherman Lake involves “anchoring the dock to the bottom of the lake with the piling”, CIRNAC-CARD does not consider dock construction “in-water construction”. GNWT notes that the Mackenzie Valley Land and Water Board Standard Water Licence Conditions include the definition of Construction as “any activities undertaken during any phase of the Project to construct or build any structures, facilities or components of, or associated with, the development of the Project.”

In response to WLWB comment #2 on CIRNAC-CARD’s response to IR #19, CIRNAC-CARD stated that “the Board’s definition is sufficiently broad that it is recognized that this work could meet the definition. Regardless of whether it is or is not considered part of the proceedings, the expansion of the dock would have no impact on the aquatic environment and mitigative measures are not proposed for the installation or removal.”

GNWT notes that CIRNAC-CARD has clearly stated that the “anchoring of the dock to the bottom of the lake with the piling” will be occurring. GNWT is of the opinion that in-water construction for the expansion of the dock considered as part of this proceeding and that CIRNAC-CARD describe potential impacts and mitigations.

Recommendation:

20. GNWT recommends that in-water construction for dock expansion be included in the scope of this project, and considered as part of the proceedings.

21. GNWT recommends that prior to dock expansion, CIRNAC-CARD include a description of potential impacts of the dock expansion and associated mitigations for review and approval in the SECP.

## 8.0 Closure Criteria

In response to IR #8, CIRNAC-CARD has made progress in developing measurable closure criteria, however GNWT believes further refinement is needed for several criteria to ensure they are clear and measurable. IR #8 was for CIRNAC-CARD “To propose an update to Appendix C Table C1 of the Closure and Reclamation Plan/Remedial Action Plan for Rayrock Remediation Project Closure Objectives and Criteria that proposes measurable criteria that will be used to evaluate success of remediation activities in accordance with the Boards’ Closure Guidelines.”

GNWT outlines the following criteria as examples to support the need for further refinement. Several proposed closure criteria (criteria 2-1, 2-4, 2-5, 2-6, 2-7 and 2-8) are to “...reduce exposure of humans and aquatic and terrestrial receptors to contaminants”. The extent to which a reduction in exposure is acceptable is not clear and therefore not measurable. For example:

- Criterion 2-3 outlines that “Water treatment process wastes are disposed of in a controlled manner, so they are not, and will not become, a source of environmental contamination.” It is unclear how CIRNAC-CARD will measure that the waste is not and will not become a source of environmental contamination.
- Criterion 2-10 identifies quarrying regulations and guidelines. It is not clear which specific regulations and guidelines this is in reference to and therefore they cannot be evaluated for acceptability.
- Criterion 2-12 outlines that “Remediated areas are designed and constructed to promote positive drainage and resist erosion, including targeted revegetation with native species”. However, a monitoring component is not proposed to identify the presence of erosion.
- Criterion 2-13 outlines that “Remediated areas are not, and will not become, a source of environmental contamination” and identifies the SNP and AEMP as monitoring components. GNWT notes this is an example where the SNP and AEMP should be included as closure criteria.
- Criterion 4-1 is proposed to “Minimize long term maintenance requirements by selecting remedial options that are lower in maintenance, lower in long-term costs and have a low probability of failure.” It is unclear how an option will be selected if not all of the criteria listed can be met. For example, it is unclear how an option with low maintenance and low probability of failure but high cost would be compared to an option with low cost but high maintenance and high probability of failure.

In addition, several proposed criteria lack a temporal component to identify when a closure criterion has met the closure objective, as recommended in the Closure

Guidelines (MVLWB/AANDC, 2013). For example, criterion 3-1 outlines that “Residual risks are managed on site via long term monitoring and operation, maintenance and surveillance (OMS) activities until suitable end points are achieved.” It is unclear what constitutes a suitable end point and the required duration a suitable endpoint should be stable or decreasing to have successfully met the closure objective.

GNWT highlights that due to the importance of closure criteria, as outlined in the Guidelines (MVLWB/AANDC, 2013), the closure criteria as proposed should not be approved. Closure criteria measure whether the closure objectives have been met, and therefore if the goal of closure has been achieved.

Recommendation:

22. GNWT recommends that the Board not approve the closure criteria proposed in Table C1.

23. GNWT recommends that the Board require closure criteria in Table C1 be resubmitted for public review and Board approval post-issuance of the Water Licence.

References:

MVLWB/AANDC. 2013. Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories. November, 2013.