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March 3, 2023

File: W2014L3-0002

Pushp Seth  
Senior Administrative Officer  
Community Government of Behchoko  
PO Box 68  
Behchoko, NT X0E 0Y0

Sent by email

Dear Pushp Seth,

**Re: Sludge Characterization Results for the Water Treatment Plant for Both Rae and Edzo – Approved – Community Government of Behchokò – Municipal – Behchokò, NT**

The Wek'èezhì Land and Water Board (Board) met on February 22, 2023 and considered the Sludge Characterization Results for the Water Treatment Plant for both Rae and Edzo submitted by the Community Government of Behchokò (CGB) on October 27 and 28, 2021 as required by Water Licence (Licence) W2014L3-0002 and the Board's direction in its July 29, 2021 Decision Letter.<sup>1,2</sup>

The Board has determined that the Sludge Characterization Results for the Water Treatment Plant for both Rae and Edzo satisfied the requirements of Part D, Condition 13, and Schedule 2 of the Licence and the Board's direction in its July 29, 2021 Decision Letter. The Board hereby approves the Sludge Characterization Results for the Water Treatment Plant for both Rae and Edzo as submitted. The details of the Board's decision are set out in the attached Reasons for Decision.

To address issues associated with hold-time exceedances, the Board has outlined its expectations regarding all future sampling events within the attached Reasons for Decision. Specifically, the Board expects pH field measurements be taken any time a pH measurement is required and to report these

<sup>1</sup> See WLWB Online Registry ([www.wlwb.ca](http://www.wlwb.ca)) for [W2014L3-0002 - Behchoko - WSF - CTP - Sludge Characterization Results for Rae WTP - Oct 27 21](#) and [W2014L3-0002 - Behchoko - WSF - CTP - Sludge Characterization Results for Edzo WTP - Oct 28 21](#).

<sup>2</sup> See WLWB Online Registry for [W2014L3-0002 - Behchoko - SDF Submissions and Licence Update - Reasons for Decision - Jul 29 21](#).

results along with the results provided by the lab; the CGB is expected to train its staff on the use of the field pH device. The Board also expects the CGB to communicate with the analytic lab in Yellowknife to help optimize sample collection and drop-off times.

Please direct questions or concerns regarding this letter to Ryan Fequet in writing.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Mason Mantla', written in a cursive style.

Mason Mantla  
Chair, Wek'èezhìi Land and Water Board

BCC'd to:       Wek'èezhìi Distribution List  
                  Meg McCluskie – Inspector, GNWT-ENR

Attached:       Reasons for Decision



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## Reasons for Decision

<b>Reference/File Number:</b>	W2014L3-0002
<b>Licensee:</b>	Community Government of Behchokò (CGB or Behchokò)
<b>Subject:</b>	Sludge Characterization Results for the Water Treatment Plant (WTP) for both Rae and Edzo

## Decision from the Wek'èezhì Land and Water Board Meeting of February 22, 2023

### **1.0 Decision**

The Wek'èezhì Land and Water Board (WLWB or the Board) met on February 22, 2023 and considered Behchokò's (CGB) Sludge Characterization Results for the Water Treatment Plant (WTP) for both Rae and Edzo.<sup>3,4</sup>

In consideration of the submissions and reviewer comments, the Board has approved Behchokò's Sludge Characterization Results for the Water Treatment Plant for both Rae and Edzo. The Board has also included within this Reasons for Decision its expectation regarding all future sampling events to help address hold-time exceedances.

### **2.0 Background**

On July 29, 2021, the Board approved Version 1.1 of the Efficacy Studies and Version 2.0 of the Sewage Disposal Facility (SDF) Operations and Maintenance (O&M) Plan and required the CGB to submit Sludge Characterization Results for the Water Treatment Plant as stated in Decision #9 of the Board's Reasons for Decision.<sup>5</sup> These results are also required by Part D, Condition 13 of the Licence. Part D, Condition 13

<sup>3</sup> See WLWB Online Registry ([www.wlwb.ca](http://www.wlwb.ca)) for [W2014L3-0002 - Behchoko - WSF - CTP - Sludge Characterization Results for Rae WTP - Oct 27 21](#)

<sup>4</sup> See WLWB Online Registry for [W2014L3-0002 - Behchoko - WSF - CTP - Sludge Characterization Results for Edzo WTP - Oct 28 21](#)

<sup>5</sup> See WLWB Online Registry for [W2014L3-0002 - Behchoko - SDF Submissions and Licence Update - Reasons for Decision - Jul 29 21](#)

was included during the Renewal of the Licence to address the commitment made by the CGB to submit its sludge characterization results from the Water Treatment Plant for both Rae and Edzo.<sup>6</sup> Results were originally submitted on November 5, 2015 and July 22, 2020. It was identified that not all the information required by Schedule 2 was included in the submissions. On July 29, 2021, the Board required that the CGB provide a complete characterization of the Rae and Edzo sludge leaving the Water Treatment Plant within 90 days of the Board's decision.<sup>7</sup> This submission was to include new results or rationale for missing results, as well as to indicate where samples were taken in a supporting cover letter.

On October 27 and 28, 2021, BluMetric Environmental Inc. (BluMetric) on behalf of the CGB submitted Sludge Characterization Results for the Water Treatment Plant for both Rae and Edzo.

## **2.1 Public Review**

The CGB Sludge Characterization Results for both Rae and Edzo were distributed for public review on October 27, 2022. Reviewer comments were received by the deadline of November 17, 2022 from the Government of the Northwest Territories – Department of Environment and Natural Resources – Environmental Assessment and Monitoring (GNWT-ENR). Environment and Climate Change Canada (ECCC) stated they had no comments at the time. The proponent did not submit responses to comments and recommendations by the response deadline of December 1, 2022.

In a follow-up email dated January 6, 2023, Board staff reached out to the Senior Administrative Officer for the CGB to let them know that no response was received on the comments/recommendations with regards to this Item for Review. The SAO was also informed that even though the response deadline had past, if the CGB should like to provide responses for the Board's consideration then to please let Board staff know by January 13, 2023 if the CGB would like additional time to respond. The CGB did not provide a response to Board staff's email by January 16, 2023.

In an effort to assist the CGB, Board staff reached out to the analytical company that analyzed the samples (i.e., ALS) and to the consultant that prepared the submission for the CGB (i.e., BluMetric) in order to get some additional information regarding the recommendations received by GNWT-ENR. The responses received from the consultant, and the corresponding response from the CGB along with the comments/recommendations received during the public review are available on the WLWB Online Registry.<sup>8,9</sup>

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<sup>6</sup> See WLWB Online Registry for [W2014L3-0002 - Behchoko - Water Licence - Reasons for Decision - Oct 27 14](#)

<sup>7</sup> See WLWB Online Registry for [W2014L3-0002 - Behchoko - SDF Submissions and Licence Update - Reasons for Decision - Jul 29 21](#)

<sup>8</sup> See WLWB Online Review System for [Behchoko - WSF - CTP - Sludge Characterization Results for Rae and Edzo's WTP](#)

<sup>9</sup> See WLWB Online Registry for [W2014L3-0002 - Behchoko - WSF - CTP - Sludge Characterization Results for Rae-Edzo WTP - Correspondence - Feb 13 23](#)

### **3.0 Reasons for Decision**

GNWT-ENR submitted three comments/recommendations during the public review. These comments/recommendations are discussed in the subsections below.

#### **3.1 Cations**

During the review, GNWT-ENR noted that Schedule 2 of the Licence requires that cations be included as part of the Sludge Characterization results (GNWT-ENR comment 1). GNWT-ENR noted for both Rae and Edzo, the results do not include a designated cation category. GNWT-ENR also acknowledged that there may be overlap between cations and other categories, such as metals. GNWT-ENR also noted that Schedule 2 does not specify what parameters are to be included for cations, which makes it difficult to determine whether that requirement has been satisfied. GNWT-ENR recommended that the CGB provide an explanation as to how the results provided satisfy the requirement of Schedule 2 to characterize cations in the sludge (GNWT-ENR comment 1). Since there was no response from the proponent to GNWT-ENR's recommendation, Board staff reached out to ALS in Yellowknife (the analytical company that did the analysis of the sludge samples) over the phone to confirm if the cations were included in the results. The ALS Lab Manager confirmed that the cations are included within the metals section of the report (e.g., Mg<sup>2+</sup>, Na<sup>+</sup>, and K<sup>+</sup>). Therefore, the Board is of the opinion that the required information was included in the Sludge Characterization results and the requirement of Schedule 2 to characterize cations in the sludge has been satisfied.

#### **3.2 pH - Field Measurement**

During the review, GNWT-ENR noted that for both Rae and Edzo, the recommended holding time for pH was exceeded and that a field measurement was recommended (GNWT-ENR comment 2). GNWT-ENR commented that there is no discussion of whether field measurements for pH were completed. GNWT-ENR recommended that the CGB either complete the field measurements for pH or provide a rationale for why these measurements would not be needed (GNWT-ENR comment 2). With assistance from BluMetric, the CGB indicated that the hold time for pH is 15 minutes, which is impossible to meet. It was also confirmed that a field pH pen was left with CGB staff to take pH readings when needed. No pH measurement was reported and it could not be confirmed if the sludge was too thick to record pH in the field at the time and no photos were taken.

The Board understands that it is not always possible to meet hold times, especially when they are short and/or need to be shipped to an offsite analytical laboratory. The samples should have ideally been accompanied with a field measurement or information on why a field measurement was not possible. **The Board expects that field pH measurements be taken any time a pH measurement is required as it will never be possible to meet pH hold times for the laboratory. CGB staff should be trained on the use of the field pH device and report these results along with the results provided by the lab.**

### 3.3 Nitrate and Nitrite - Hold Times

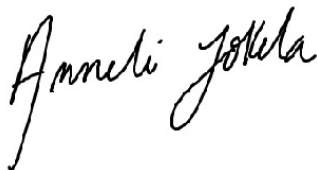
During the review, GNWT-ENR noted that the hold times for both nitrate and nitrite had been exceeded for the sludge characterization results from Rae (GNWT-ENR comment 3). GNWT-ENR noted that there is no discussion of how this may have affected results and whether additional testing could be warranted. GNWT-ENR recommended that the CGB provide a discussion of how the exceedance recommended hold times for nitrate and nitrite in the Rae sample may have affected the results and whether additional testing could be warranted (GNWT-ENR comment 3). With assistance from BluMetric, the CGB noted that the hold times for nitrate and nitrite is three days. While the samples were delivered to the lab within 2.5 hours of the sample time, the samples have to be shipped from Yellowknife to another lab to be analysed. CGB/BluMetric indicated that they had called ALS to confirm this information and were still waiting to hear back from ALS regarding the implications of exceeding the hold times. Board staff followed up by phone with ALS in Yellowknife and the Lab Manager explained that it was not possible to comment on the implications of exceeding hold times because there are too many potential factors that could influence the sample (i.e., cannot say if it is more likely to underestimate or overestimate the concentration). The Yellowknife Manager did indicate that exceeding three-day hold times is a common problem with samples taken in the Northwest Territories and that it requires a lot of coordination with delivery times and flights. The Board is not requiring additional samples be taken at this time given that the same potential risks of exceeding hold times exist. **The Board expects that any future sampling events by the CGB (as required by the Licence and/or Board direction) be coordinated in such a way as to minimize the likelihood of exceeding hold times. This requires communication with the lab in Yellowknife to determine ideal drop off times, which in turn will help determine ideal sample collection times.**

### 3.4 Approval of Sludge Characterization Results

Overall, the Board is of the opinion that the sludge results can be approved. While there were some hold time exceedances identified, these were generally due to factors outside of the CGB's control. The Board has communicated its expectations above to help address similar issues in any future sampling required by the Licence and/or Board direction.

- **Decision #1: The Board approves the Sludge Characterization results for both Rae and Edzo.**

Signed the 3<sup>rd</sup> Day of March, 2023, on behalf of the Wek'èezhìi Land and Water Board



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Witness



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Mason Mantla  
Chair, Wek'èezhìi Land and Water Board