



Box 32, Wekweètì, NT X0E 1W0
Tel: 867-713-2500 Fax: 867-713-2502

#1-4905 48th Street, Yellowknife, NT X1A 3S3
Tel: 867-765-4592 Fax: 867-765-4593
www.wlwb.ca

November 19, 2020

File: W2017L3-0002

Lisa Nitsiza
Senior Administrative Officer
Community Government of Whatì
Whatì, Northwest Territories
X0E 1P0

Sent by email

Dear Lisa Nitsiza,

Re: Solid Waste Facility Operation and Maintenance Plan – Version 4.0

The Wek'èezhìi Land and Water Board (the Board) met on November 19, 2020 and considered Version 4.0 of the Community Government of Whatì's Solid Waste Facility Operation and Maintenance Plan (SWF O&M Plan).¹

As described in the Board's Reasons for Decision, the Board has approved Version 4.0 of the SWF O&M Plan and provided further direction. The Board requires the Community Government of Whatì to include revisions #1 to #4 when it submits Version 5.0 of the SWF O&M Plan. Due to the small nature of the revisions, the Board believes that the revisions required can be included when the CGW submits its next SWF O&M Plan. As discussed in the attached Reasons for Decision, Version 5.0 should be submitted no later than one year following the opening of the Tìjchq All-Season Road (TASR). The Board has also provided additional direction for updates to the SWF O&M Plan after the Tìjchq All-Season Road has been completed. Please review the attached Reasons for Decision for further information.

The Board reminds the Community Government of Whatì that these submissions should include a revision history table, as per the Board's *Document Submission Standards*.²

Yours sincerely,

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

Joseph Mackenzie
Chair, Wek'èezhìi Land and Water Board

Attachment:

- Reasons for Decision

Copied: Wek'èezhìi West Distribution List

¹ See WLWB Online Registry for [W2017L3-0002 – Whatì – O and M Plan – SWF – Version 4.0 – Jun 12 20.pdf](#)

² See WLWB Website for the [MVLWB Document Submission Standards](#)



Box 32, Wekweètì, NT X0E 1W0
Tel: 867-713-2500 Fax: 867-713-2502

#1-4905 48th Street, Yellowknife, NT X1A 3S3
Tel: 867-765-4592 Fax: 867-765-4593
www.wlwb.ca

Reasons for Decision

Reference/File Number:	W2017L3-0002
Licensee:	Community Government of Whatì
Subject:	Solid Waste Facility Operation and Maintenance Plan Version 4.0

Decision from the Wek'èezhì Land and Water Board Meeting of November 19, 2020

1.0 Decision

On November 19, 2020, the Wek'èezhì Land and Water Board (WLWB or the Board) met and considered Version 4.0 of the Community Government of Whatì (CGW's) Solid Waste Facility Operation and Maintenance Plan (SWF O&M Plan), required by Part, H, Condition 1 of its W2017L3-0002 Water Licence and August 24, 2018 Reasons for Decision.^{1,2,3} The Board decided the following:

1. To approve Version 4.0 of the SWF O&M Plan with additional direction;
2. To direct CGW to include revisions #1 to #4 when it submits Version 5.0 of the SWF O&M Plan; and
3. To direct the CGW to review and consider potential changes to the capacity of the landfill, and any other relevant sections as a result of the opening of the TARS, and submit a revised SWF O&M Plan for Board approval once the TARS has opened. If no revisions are required because of the TARS, rationale should be provided in the cover letter of the Plan. This submission is to be submitted no more than a year after the TARS is opened.

2.0 Background

The Community of Whatì has two Solid Waste Facilities: One for Bulk Solid Waste and one for Domestic Solid Waste, and both facilities are addressed by the SWF O&M Plan,⁴ required by Part H, Condition 1 of CGW's Water Licence (W2017L3-0002). Part H, Condition 1 states:

The Licensee shall annually review the Operation and Maintenance Plans for the Sewage and Solid Waste Disposal Facilities and shall submit updates to the Plan to the Board for approval at the following times:

- a) when necessary to reflect changes in operation or technology; and
- b) upon the request of an Inspector or the Board.

¹ See WLWB Online Registry (www.wlwb.ca) for [W2017L3-0002 – Whatì – O and M Plan – SWF – Version 4.0 – Jun 12 20.pdf](#)

² See WLWB Online Registry for [W2017L3-0002 – Whatì – Type B Water Licence Renewal – Water Licence and SNP – Sep 22 17.pdf](#)

³ See WLWB Online Registry for [W2017L3-0002 – Whatì – O and M Plan – SWF – Version 3.0 – Directive and RFD – Aug 24 18.pdf](#)

⁴ Bulk solid Waste materials include the stockpiling of white goods, old snowmobiles, tires, wood, vehicles, and empty heating fuel tanks. Hazardous Waste is removed from the Domestic Solid Waste Facility during the winter road season.

In its August 24, 2018 Reasons for Decision, the Board approved Version 3.0 of the SWF O&M Plan and directed the CGW to include the following updates in the O&M Plan when it conducts its next annual review, but no later than September 1, 2019:

- Current practices for disposing of electronic Waste;
- Current practices for managing and disposing of ozone-depleting substances and mercury-containing equipment;
- How site access is controlled; and
- Current practices in managing surface water, with proposed practices and trigger for groundwater monitoring.

The CGW submitted Version 4.0 of the SWF O&M Plan on June 12, 2020 to address the Board's August 24, 2018 decision. With Version 4.0 of the SWF O&M Plan, CGW submitted a soil sampling plan to characterize potentially impacted soil and stockpiles located at the Domestic Solid Waste Disposal Facility. Although this soil sampling plan was not required by the Board or for Board approval, the Board has included a discussion of this sampling in section 3.3.

Version 4.0 of the SWF O&M Plan was distributed for public review on July 14, 2020, and reviewer comments were due by August 19, 2020. Comments on the submission were received from Environment and Climate Change Canada (ECCC), the Government of Northwest Territories – Environment and Natural Resources (GNWT-ENR), and the Tłıchǫ Government (TG); Board staff also submitted questions. Proponent responses were submitted after the deadline of September 2, 2020, on October 9, 2020. Reviewer comments and recommendations, as well as the proponent's responses are available on the WLWB Online Registry.⁵

3.0 Reasons for Decision

3.1 Overall Decision

Version 4.0 of the SWF O&M Plan has been reviewed for conformity to Part H, Condition 1, Schedule 2, and to previous Board direction. As discussed below, the Board also considered all reviewer comments and proponent responses submitted during the public review period. Although additional direction is required, the Board finds Version 4.0 to be an improvement to Version 3.0. Because of this, the Board approves Version 4.0 of the SWF O&M Plan with additional direction to address comments raised during the public review and outstanding Board direction.

- ***Decision #1: The Board approves Version 4.0 of the SWF Operation and Maintenance Plan with additional direction.***

The required revisions and provided additional direction for future SWF O&M Plans are discussed in the following sections below. Due to the small nature of the revisions, the Board believes that the revisions required can be included when the CGW submits its next SWF O&M Plan. As discussed in section 3.2.5, Version 5.0 should be submitted no later than one year following the opening of the TASR.

- ***Decision #2: The Board directs the CGW to include revisions #1 to #4 in Version 5.0 of the SWF O&M Plan.***

⁵ See WLWB Online Registry for [W2017L3-0002 – Whati – O and M Plan – SWF – Version 4.0 – Review Summary and Attachments – Oct 9 20](#)

3.2 Outstanding Direction and Public Review Comments

3.2.1 Management and Disposal of Mercury-containing Equipment and Ozone-depleting Substances

In the public review of Version 3.0, the CGW clarified that its proposal to manage ozone-depleting substances and mercury-containing equipment outlined in the Plan “incorporates the recommendations provided by the hazardous waste specialist” and that the management of mercury-containing equipment will not only include mercury switches from vehicles as described in Version 3.0, but will also include thermostats, thermometers, and fluorescent light bulbs (see response to WLWB staff comments 1 and 2). In the Board’s Reasons for Decision, the Board directed CGW to update section 17 to reflect the CGW’s response to Board comments 1, 2, and 3, and its current practices for managing and disposing of ozone-depleting substances and mercury-containing equipment.⁶ The details included in the CGW’s response to Board comments 2 and 3 were not included in Version 4.0 as per Board direction. To ensure the Board’s previous direction for the SWF O&M Plan is satisfied, the Board directs CGW to include in section 17:

- In addition to mercury switches, thermostats and fluorescent light bulbs that contain mercury will be segregated and stored in a dry building; and
 - CGW will contract KBL for the transport and ultimate disposal of hazardous Wastes.
- **Revision #1: The CGW is to update section 17 to include the following details in Version 5.0 of the SWF O&M Plan:**
- a) ***In addition to mercury switches, thermostats and fluorescent light bulbs that contain mercury will be segregated and stored in a dry building; and***
 - b) ***CGW will contract KBL for the transport and ultimate disposal of hazardous Wastes.***

3.2.2 Burning of Waste

In review of Version 4.0, GNWT-ENR commented that the CGW has indicated it would be incinerating cardboard and paper but did not provide any supporting information regarding the use of an incinerator (GNWT-ENR comment 2). GNWT-ENR recommended the CGW revisit the term “incineration” to clarify if the proposed process is incineration or open burning. If open burning was the proposed method, GNWT-ENR recommended that the CGW refer to the *Municipal Solid Wastes Suitable for Open Burning Guidelines*⁷ as the protocol for incineration was not included in the O&M Plan (GNWT-ENR comment 3). In addition, GNWT-ENR recommended that the CGW refer to best practices for open burning (GNWT-ENR comment 6) and address the fire risk if burning of waste is proposed near the landfill (GNWT-ENR comment 4).

In response, the CGW clarified that the process being conducted is open burning; that the CGW will refer to the Guidelines and referenced material indicated by GNWT-ENR; and that if burning is proposed near the landfill, fire risks will be considered. The Board notes that GNWT-ENR’s *Municipal Solid Wastes Suitable for Open Burning Guidelines* are already referenced within the SWF O&M Plan and that the *Technical Document for Batch Waste Incineration* recommended does not apply since CGW has clarified that it conducts open burning and not incineration. The Board believes that the CGW has addressed GNWT-ENR’s comments regarding burning of Waste but directs the CGW update Section 5 – Facility Design and the maps attached to the SWF O&M Plan to reflect open burning (i.e., not incineration) of cardboard and paper in Version 5.0. At this time, the Board also encourages that, as committed to by the

⁶ See WLWB Online Registry for [W2017L3-0002 – Whati – O and M Plan – SWF – Version 3.0 – Directive and RFD – Aug 24 18](#)

⁷ See WLWB’s website for the *Resources for Municipalities* page for [GNWT Municipal Solid Wastes Suitable for Open Burning Guidelines](#)

CGW during the public review, the CGW consider potential fire risks when open burning near or within the landfill.

- **Revision #2: The CGW is to update Section 5 and attached maps to reflect ‘open burning’ of cardboard and paper and not ‘incineration’ in Version 5.0 of the SWF O&M Plan.**

3.2.3 Management of Wastes not listed and Alternative Waste Management

During the public review, GNWT-ENR asked if scrap metal is being landfilled and recommended that decision-making criteria for the disposal pathways to be clearly outlined to account for Wastes not detailed in the Plan (GNWT-ENR comment 5). The CGW responded that the solid Waste facility attendant determines how items not explicitly stated in the SWF O&M are disposed of. In the comments provided by the Tłıchǫ Government (TG), it was encouraged that construction waste and plastics be segregated and either reused or recycled (TG comments 1 and 2). The CGW in response committed to considering alternative solid Waste management practices. Although disposal pathways for materials are not included in the SWF O&M Plan template, the Board believes that best practices are to be used and alternatives to disposal are to be considered. Best practices and resources for communities on Waste management are available on the WLWB’s ‘Resources for Municipalities’ page.⁸ When the CGW conducts its annual review of the SWF O&M Plan (as per Part H, Condition 1 of the Licence), it should consider best practices and resources available on the Board’s website and Waste management alternatives to landfilling as suggested by the TG. Any changes to Waste management as part of this review are expected to be included in the next SWF O&M submission (Version 5.0) as well as future versions.

- **Revision #3: The CGW is to consider best practices and resources for municipal Waste management, as well as alternatives to Waste disposal at the landfill, when it conducts its annual review of the SWF O&M Plan and propose any changes to the O&M Plan as appropriate in Version 5.0 of the O&M Plan.**

3.2.4 Surface and Groundwater Monitoring

Schedule 2, Condition 1(k) of the Licence requires CGW to include a “discussion on the need for monitoring the quality of ground and surface water”. In review of SWF O&M Plan Version 3.0, it was identified that no discussion on monitoring ground and/or surface water quality was included in the Plan.⁹ ECCC also identified that no surface water management was included in Version 3.0. In its responses, the CGW stated that there were no plans to conduct groundwater monitoring; however, committed to continue surface monitoring around the SWFs once per month as per the SNP and make further monitoring and remediation plans if the surface water monitoring proved “detrimental to the environment.”¹⁰ In consideration of Version 3.0, the Board directed CGW to update the Plan to reflect CGW’s responses to ECCC comment 3 and Board staff comment 4, and its current practices for managing surface water, and propose practices and triggers for groundwater monitoring.¹¹

Version 4.0 was updated to reflect the CGW’s responses to ECCC comment 3 and Board staff comment 4. In addition, the Plan describes that cover material is graded to direct runoff away from SWF. During the review of Version 4.0, ECCC commented that it was unclear how surface water is managed, how it is

⁸ See WLWB’s website for the [Resources for Municipalities](#) page

⁹ See WLWB Online Registry for [W2017L3-0002 – O and M Plan – SWF – Version 3.0 – Review Summary and Attachments – Mar 6 18](#); Board staff comment 4

¹⁰ Ibid.

¹¹ See WLWB Online Registry for [W2017L3-0002 – Whati – O and M Plan – SWF – Version 3.0 – Directive and RFD – Aug 24 18](#)

sampled if it accumulates on-site, and where it reports to (ECCC comment 2). ECCC recommended the CGW provide additional information on surface water collection, a description of where water reports to, and how it is managed once the water quality is tested. The CGW responded that surface water collects in natural depressions on-site, evaporates naturally, and so there are insufficient volumes to sample. The Board notes that the Surveillance Network Program (SNP) reports reflect this minimal volume of surface water on-site. In the last nine (9) years, surface water around the solid Waste facilities have been sampled a total of five (5) times through the SNP and mostly during early summer (four times in June, one time in October).¹² SNP reports are sent to the CGW with Board staff and the Inspectors cc'd and posted on the Board's public registry. A summary of these results is included in the Annual Report (as required by Schedule 1, Condition 1e) that is also submitted to the Board. Should there be any concerns identified by Board staff and/or the Inspector from the SNP Reports, the CGW will be contacted. At this point, the Board is of the opinion that the SNP provides sufficient information to monitor and detect if any issues arise with surface water drainage on-site and to address ECCC comment 2.

In the August 24, 2018 RFD, the Board indicated that the CGW "should outline the triggers for when surface water monitoring 'prove[s] to be detrimental'; and when groundwater monitoring would be necessary." In review of Version 4.0, ECCC commented that the CGW had not provided proposed practices and triggers for groundwater monitoring as per the previous Board direction and recommended that the CGW provide this information (ECCC comment 3). The CGW responded that the SWF currently does not have any groundwater monitoring wells and therefore do not have proposed practices or triggers for groundwater monitoring wells being required.

According to the O&M Plan, the SWFs have been active for approximately 40 years and "relies solely on natural attenuation of landfill leachate" with no liner. As described in Section 14 of the SWF O&M Plan, the SWFs are located approximately 3.4 kilometres (km) away from nearest water body but it is unknown what its proximity is to the aquifer and there is little information on the groundwater in the area. The community of Whatì is one of few communities in the Northwest Territories that use a groundwater well as their water source, which is located right next to Lac la Martre (i.e., approximately 3 km away from the landfills).¹³ Acknowledging that the CGW does not currently have any groundwater monitoring wells, the intent of the Board's August 24, 2018 direction was to identify triggers for when the installation of groundwater monitoring wells may be necessary. It appears this may have been misinterpreted as no additional text was provided to specify at what point further monitoring would be done "if results prove to be detrimental to the environment" (i.e., no triggers for groundwater monitoring were included). Only ECCC commented on the absence of triggers for groundwater monitoring and it is not clear whether ECCC itself has any concerns with the lack of groundwater monitoring practices and/or triggers. No Party provided evidence to suggest groundwater issues exist; however, it would be useful to understand what triggers would elicit a need for groundwater monitoring.

Beyond the Board's requirements, the Board understands that groundwater monitoring by GNWT appears to occur at the water well and additional monitoring may be planned in the future. Water quality sampling is required through the Water Supply System Regulations under the authority of the GNWT Health and Social Services.¹⁴ The Board understands that raw water from the CGW's groundwater source is required to be sampled for a set of chemical and physical parameters once a year that may be able to detect

¹² See WLWB Online Registry for SNP Reports for [October 2011](#) (SNP 002-4 and 002-5 under [W2007L3-0002](#)); [June 2017 SNP](#) (SNP 002-5 under [W2007L3-0002](#)); [June 2018](#) (SNP 002-4); [June 2019](#) (SNP 002-5); [June 2020](#) (SNP 002-5)

¹³https://www.enr.gov.nt.ca/sites/enr/files/preliminary_state_of_groundwater_knowledge_in_the_transboundary_region_of_the_mackenzie_river_basin_nwt_march_2016.pdf

¹⁴ <https://www.justice.gov.nt.ca/en/files/legislation/public-health/public-health.r7.pdf>

changes in groundwater quality.¹⁵ In addition, GNWT-MACA conducts groundwater monitoring at the Behchokq and Gamèti SWFs and there may potentially be an opportunity for groundwater monitoring to be conducted at Whati in the future.¹⁶ The Board believes that this data and any analysis from the GNWT could be shared with the community and used as an opportunity to inform the quality of groundwater and/or determine any appropriate triggers for monitoring. The Board encourages the CGW to collaborate with the GNWT and consider the use of any appropriate data collected or received by the CGW (e.g., through SNP, soil sampling, raw water sampling, etc.) to help inform triggers for groundwater monitoring. Any triggers identified by the CGW or other proposed changes to the need for monitoring the quality of ground and surface water are to be included in an updated SWF O&M Plan (Version 5.0) to address the requirements of Schedule 2, Condition 1(k) of the Licence.

- ***Revision #4: The CGW is to consider any relevant data available to the CGW that would help inform triggers for groundwater monitoring and revise and submit Version 5.0 of the SWF O&M Plan to include any triggers identified, along with supporting data, or other proposed changes in section 16 or as an attachment. If no triggers are identified and no revisions are required, rationale should be provided in the cover letter.***

3.2.5 Remaining Landfill Capacity

Pages 9-10 of the SWF O&M Plan Version 4.0 calculate the space required for Waste over the next 10 years of the facility's life, based on assumptions about the level of compaction, the ratio of cover material to Waste (assumed to be 1:5), and the projected population. In this section, the volume of remaining space was less than the calculated space required for the next 10 years.¹⁷ During the public review, GNWT-ENR and Board staff asked questions regarding discrepancies identified in the SWF O&M Plan's estimation of remaining capacity of the landfill as well as the implications of the Tłchq All-Season Road (TASR) (GNWT-ENR comment 7 and Board staff comment 1). In its response to reviewer comments as well as in the Plan, the CGW referenced a letter sent to the Board in 2018 which proposes a different estimate of capacity based on Dillon Consulting Limited (Dillon's) experience with SWFs in the Northwest Territories. The letter states that the generated Waste for the SWF based on Dillon's experience is less than the MVLWB Template (used for the SWF O&M Plan) and that "the lifespan of the solid waste facility should be approximately fifteen years".¹⁸

The Board believes that regardless of the estimation method used, this section (Section 7) and other applicable sections in the SWF O&M Plan should be revisited once the TASR is completed. In response to reviewer comments, the CGW stated that at this time it is unknown if Waste disposal from the construction and/or completion of the TASR will result in an increase or decrease in Waste generated; however, the CGW expects that a better understanding of changes to Waste volumes will be clear once the road is constructed. The Board agrees and believes that as per Part H, Condition 1(a) of the Licence, the SWF O&M Plan will need to be updated to reflect changes in operation or technology. The update to the SWF O&M should consider changes in population, potential addition and acceptance of non-municipal Waste, and any other Waste related changes because of the TASR. If changes are not required, rationale should be provided in the cover letter of the SWF O&M Plan. The Board notes that the anticipated opening

¹⁵ <https://www.maca.gov.nt.ca/en/services/drinking-water-nwt/chemical-and-physical-sampling>;
<https://www.maca.gov.nt.ca/en/services/drinking-water-nwt/monitoring-and-testing-%E2%80%93-proving-water-safe>

¹⁶ See WLWB Online Registry for groundwater monitoring well Land Use Permit ([W2016X0001](#)) for the community governments' Behchokq and Gamèti Landfills

¹⁷ PSWF O&M Plan projects population from 2016 - 2025

¹⁸ See WLWB Online Registry for [W2017L3-0002 – Whati – Operation and Maintenance Plan – SWF – Version 3.0 – Response to RFD – Jan 25 18](#)

of the TASR will be Fall 2021 and believe a year of operation would be a reasonable amount of time to revisit and consider any changes to the SWF O&M Plan (approximately Fall 2022).

- ***Decision #3: The Board directs the CGW to review and consider potential changes to the capacity of the landfill, and any other relevant sections as a result of the opening of the TASR, and submit a revised SWF O&M Plan for Board approval once the TASR has opened. If no revisions are required because of the TASR, rationale should be provided in the cover letter of the Plan. This submission is to be submitted no more than a year after the TASR is opened.***

3.3 Characterization of Potentially Impacted Soils

During the renewal of the Community Government of Whatì Licence, GNWT-ENR raised concerns associated with contaminated soil piles that have been deposited over the last couple of decades.¹⁹ With issuance, the Board stated that it appeared that there was “insufficient evidence on the size and nature of these piles to be able to propose a licence condition that would appropriately capture these concerns,” however, believed that the concerns could be handled through a revision of the SWF O&M Plan. As a result, the CGW was directed to submit a revised SWF O&M Plan on how the CGW plans to address the potential risk of the contaminated soil piles, along with its plan for the safe management, closure, and reclamation of these piles.

In response to the Board’s direction during issuance, CGW stated that it intended to conduct an environmental assessment of the pile in the summer of 2018 and the “results and reclamation” would be provided to the Board.²⁰ When SWF O&M Plan Version 3.0 was submitted, the Board acknowledged CGW’s commitment to provide additional details on managing historical soil piles, but identified that it was not aware of any soil sampling activities to date. In the RFD for Version 3.0, the Board directed the CGW to report on when an environmental assessment of the historically contaminated soil piles would be conducted and when a reclamation plan would be submitted, within 30 days of receiving the Board’s decision. The Board also directed the CGW to report on any of the soil sampling and reclamation activities with the annual report. To date, no soil sampling has been completed yet; however, it is anticipated that sampling will occur next spring.²¹

Although not required by the Board, the CGW submitted a soil sampling plan attached to Version 4.0 and no comments were received on the Plan. While the Plan is appreciated and demonstrates the CGW’s initiative to address concerns raised with the historically contaminated piles, the Soil Sampling Plan is not for approval. As noted in the RFD for Version 3.0, the Board expects a summary of the assessment in its Annual Report as per Schedule 1, Condition 1(j). If the reclamation plan proposed after the soil sampling assessment requires changes to the SWF O&M Plan or requires details to be included in the eventual Closure and Reclamation Plan of the SWFs, then the Board expects that these details will be included in the appropriate submissions.

¹⁹ See WLWB Online Registry for [W2017L3-0002 – Whatì – Type B Water Licence Renewal – Reasons for Decision – Sep 27 17](#)

²⁰ See WLWB Online Registry for [W2017L3-0002 – Whatì – Operation and Maintenance – SWF – Version 3.0 – Response to RFD – Jan 25 18](#)

²¹ See WLWB Online Registry for [W2017L3-0002 – Whatì – Notification – Anticipated Timing of Soil Sampling at SWF – Nov 16 20](#)

Signed the 19th of November 2020, on behalf of the Wek'èezhii Land and Water Board



Witness



Joseph Mackenzie
Chair, Wek'èezhii Land and Water Board