



Mackenzie Valley Land and Water Board
7th Floor - 4922 48th Street
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

May 10, 2018

File: MV2016L3-0001

Ms. Susan Christie, SAO
Hamlet of Fort Providence
Box 290
Fort Providence NT X0E 0L0

Email:sao@fortprovidence.ca

Dear Ms. Christie:

Solid Waste Disposal Facilities Action Plan – Interim Approval
Hamlet of Fort Providence – Water Licence MV2016L3-0001

The Mackenzie Valley Land and Water Board (Board) met on May 10, 2018 and reviewed the Solid Waste Disposal Facilities Action Plan (Action Plan), submitted by the Hamlet of Fort Providence (Hamlet) to fulfill Part D, condition 22 of municipal Water Licence (Licence) MV2016L3-0001.

The Board hereby approves the Solid Waste Disposal Facilities Action Plan, Version 1, as an interim submission.

The Hamlet shall adhere to Version 1 of the Action Plan and the commitments made in their responses to reviewer comments dated February 21, 2018, until Version 2 is approved (attached). The Board requires the Hamlet to **submit a revised version of the Solid Waste Disposal Facilities Action Plan (Version 2) by August 31, 2018** for staff confirmation of conformity. Version 2 of the Action Plan shall include, but not be limited to, the following revisions:

1. Update Section 4 to account for waste accumulated in Cell 1 and the Construction Waste Area since 2012, to ensure that landfill lifespan estimates and projections are accurate as possible;
2. Update Section 4 of the Action Plan to include more detail on how the estimated lifespan of the landfill (8.5-12 years) was determined; and
3. Include a timeline for the recommended waste management practices and site improvements that they intend to implement, in particular those related to actual Licence requirements (for example, SNP sampling and reporting, waste segregation and signage).

The Hamlet is reminded that landfilling operations should take hydrogeology into consideration, in order to ensure that groundwater quality is not affected by operations.

The Board notes and appreciates the Hamlet's recent efforts to fulfill the requirements of Licence MV2016L3-0001. The full cooperation of the Hamlet is anticipated and appreciated. If you have any questions or concerns, please contact Erica Janes at (867) 766-7466 or email ejanes@mvlwb.com.

Yours sincerely,



Mavis Cli-Michaud
MVLWB, Chair

Copied to: Distribution List
 Crystal Sabel, Dillon Consulting
 Bill Bennett, Manager, Community Infrastructure Planning, MACA Dehcho
 Region

Attachment: Reasons for Decision
 Review Comment Table



Mackenzie Valley Land and Water Board
7th Floor - 4922 48th Street
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

Reasons for Decision

Issued pursuant to section 72.25 of the *Mackenzie Valley Resource Management Act* (MVRMA) and section 54 of the *Waters Act*

Type B Water Licence Management Plan	
Preliminary Screener	MVLWB
Reference/File Number	MV2016L3-0001
Applicant	Hamlet of Fort Providence
Project	Fort Providence, NT
Date of Decision	May 10, 2018

These Reasons for Decision set out the Mackenzie Valley Land and Water Board's (the Board or MVLWB) decision on a submission made by the Hamlet of Fort Providence (Hamlet) to the Board on December 20, 2017, for Water Licence (Licence) MV2016L3-0001.

1.0 Background

The Hamlet of Fort Providence submitted a Solid Waste Disposal Facilities Action Plan (Action Plan) on December 20, 2017, to fulfill Part D, condition 22 of their municipal Licence MV2016L3-0001.

2.0 Public Review

By January 30, 2018, comments and recommendations on the Action Plan were received from Environment and Climate Change Canada (no comment); the Government of the Northwest Territories Department of Environment and Natural Resources (GNWT-ENR), and Board staff. The Hamlet responded on February 21, after the February 20, 2018 deadline.

3.0 Decision

After reviewing the submission of the Hamlet, the written comments received by the Board and the Staff report prepared for the Board, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the *Waters Act* and Regulations made thereunder, has determined that some components of the Solid Waste Disposal Facilities Action Plan (Action Plan) submitted to satisfy the requirements of the Licence, require revision. For this reason, the Board has decided to approve the Action Plan as an interim submission.

The Hamlet shall adhere to Version 1 of the Action Plan and the commitments made in their responses to reviewer comments dated February 21, 2018, until Version 2 is approved. The Board requires the Hamlet to submit a revised version of the Solid Waste Disposal Facilities Action Plan (Version 2) by August 31, 2018 for staff confirmation of conformity. Version 2 of the Action Plan shall include, but not be limited to, the following revisions:

1. Update Section 4 to account for waste accumulated in Cell 1 and the Construction Waste Area since 2012, to ensure that landfill lifespan estimates and projections are accurate as possible;
2. Update Section 4 of the Action Plan to include more detail on how the estimated lifespan of the landfill (8.5-12 years) was determined; and
3. Include a timeline for the recommended waste management practices and site improvements that they intend to implement, in particular those related to actual Licence requirements (for example, SNP sampling and reporting, waste segregation and signage).

Water Licence MV2016L3-0001 contains provisions that the Board feels necessary to ensure and monitor compliance with the MVRMA and the *Waters Act* and the Regulations made thereunder and to provide appropriate safeguards in respect of the Applicant's use of the waters and/or deposit of waste affected by the Licence. The Board will provide additional referenced material or documents if requested in writing to do so.

SIGNATURE

Mackenzie Valley Land and Water Board



May 10, 2018

Mavis Cli-Michaud, Chair

Date

Review Comment Table

Board:	MVLWB
Review Item:	Hamlet of Fort Providence - Solid Waste Disposal Facilities Action Plan (MV2016L3-0001)
File(s):	MV2016L3-0001
Proponent:	Hamlet of Fort Providence
Document(s):	MV2016L3-0001 - Fort Providence - Solid Waste Disposal Facilities Action Plan - Dec20-17 (1892 KB)
Item For Review Distributed On:	Dec 21 at 09:27 Distribution List
Reviewer Comments Due By:	Jan 30, 2018
Proponent Responses Due By:	Feb 20, 2018
Item Description:	<p>The Hamlet of Fort Providence has submitted a Solid Waste Disposal Facilities Action Plan, in accordance with Part D, Condition 22 of their municipal Water Licence MV2016L3-0001. This Plan is for Board approval.</p> <p>Reviewers are invited to submit questions, comments and recommendations on the Solid Waste Disposal Facilities Action Plan by January 30, 2018.</p> <p>If you have questions or comments regarding this review or the Online Review System, please contact Erica Janes at (867)766-7466 or ejanes@mvlwb.com.</p>
General Reviewer Information:	<p>In addition to the email distribution list, the following organizations received review material by fax:</p> <ul style="list-style-type: none"> • Fort Liard Metis Local #67 - Ernie McLeod, President (867)770-4573; • Fort Simpson Métis Local #52 - Marie Lafferty, President (867)695-2040; • Hay River Metis Council - Trevor Beck, President (867)874-4472; and • Northwest Territory Métis Nation - Tim Heron, NWTMN IMA Coordinator (867)872-3586.
Contact Information:	<p>Erica Janes 867-766-7466 Heather Scott 867-766-7463 Jen Potten 867-766-7468</p>

Comment Summary

Environment and Climate Change Canada: Gabriel Bernard-Lacaille				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General	<p>Comment ECCC has reviewed in accordance with its mandate and doesn't have any comments at this time.</p> <p>Recommendation Not applicable.</p>	<p>Feb 21: The Hamlet thanks ECCC for its review.</p>	Noted.
GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
9	General File	<p>Comment (doc) ENR Letter with Comments and Recommendations</p> <p>Recommendation</p>	--	Noted.
1	Topic 1: Cell #1 and Large Construction Waste Areas and Landfill Lifespan Projections	<p>Comment In Section 4.1(2012 Landfill Lifespan Projection) of the Solid Waste Disposal Facilities Action Plan (the Plan), low and high lifespan projections were provided using stated assumptions (pg. 8). The Plan does not take into account that the now capped domestic waste cell (Cell #1 of domestic waste area) was receiving waste up until September 2014. This cell was capped in spring 2016. In addition the Large Construction Waste Area adjacent to the main landfill area has been accumulating large amounts of mixed waste (since 2012) that would otherwise be deposited in the main landfill area, if access/tipping was not available. Given that only the two active domestic waste cells (Cell #2 & #3) were considered in the projections, and the two aforementioned areas were not, this omission could skew estimates and the 2017 projections provided, which are now much less compared to the 2012 projections. ENR recommends that all areas of the landfill accumulating waste since 2012 be included in the</p>	<p>Feb 21: The plan will be updated accordingly if required by the Board.</p>	The Hamlet should update the Action Plan to account for waste accumulated in Cell 1 and the Construction Waste Area since 2012, to ensure that landfill lifespan estimates and projections are accurate as possible.

		<p>projections in order to get more accurate estimates of the current landfill capacity/lifespan.</p> <p>Recommendation 1) ENR recommends that the Plan be updated to account for waste accumulated in the two above noted areas (Cell #1 & Construction Waste Area) to ensure that landfill lifespan estimates and projections are accurate as possible.</p>		
2	Topic 2: 2017 Projected Estimated Lifespan of Landfill (8.5-12 Years)	<p>Comment Further in Section 4.1 (2012 Landfill Lifespan Projection) of the Plan, it is noted on page 9 that the estimated lifespan of the landfill is 8.5-12 years. How was this lifespan range determined? It seems like a big leap from the calculations and assumptions provided previously in the Plan. Please clarify and elaborate on how this estimate was achieved. In addition, the second last paragraph on page 9 of the Plan contains wording that are assumed errors as they do not make sense in the paragraph. The sentences read 'Note the Error! Reference source not found.' Please update the Plan by removing this wording and/or editing the paragraph to make it more coherent.</p> <p>Recommendation 1) ENR requests that the Plan be updated with information to explain more clearly how the estimated lifespan of the landfill (8.5-12 years) was determined.</p>	Feb 21: The plan will be updated accordingly if required by the Board.	The Hamlet should revise the Action Plan to include more detail on how the estimated lifespan of the landfill (8.5-12 years) was determined.
3	None	<p>Comment None</p> <p>Recommendation 2) ENR recommends that the Plan be updated to correct the above noted Page 9 errors.</p>	Feb 21: The plan will be updated to correct the reference error on page 9.	Acceptable response.
4	Topic 3: Best Management Practices to	<p>Comment Figure 4.2 in Section 2.0 of the Plan (Current Conditions) shows assumed areas available for</p>	Feb 21: ENRs recommendation is noted.	Board staff note that site improvements

<p>Avoid Standing Surface Run-Off/Leachate for Proposed Landfill Waste Cells</p>	<p>future disposal of domestic waste. If these areas are to be developed as future waste disposal cells, all areas-especially the low lying area at the southeast corner-will require re-grading and use of the mounding method in order to avoid standing/ponding water/leachate due to the high water table and surface run-off collection. More frequent cover and compaction of wastes will also aid in avoiding ponding surface run-off, and the creation of contaminated leachate. Implementation of diversion ditching that allows for surface run-off to flow away from the main landfill site, or feed into to a collection sump is recommended as well. ENR reminds the Hamlet that the Inspector must be notified 10 days prior to the discharge of standing water at the Landfill (i.e. SNP 2016-2), and discharge shall not commence until authorized in writing by an Inspector as per Part D, Item 19 of the Water Licence. In addition, ENR also reminds the Hamlet that it must notify the Board and Inspector 60 days prior to the beginning of any modifications, which includes new waste cell construction as per Part G, Item 1 of the Water Licence.</p> <p>Recommendation 1) ENR recommends that the Hamlet implement the best management practices noted above (i.e. re-grading, use of the mounding method, more frequent cover of waste and diversion ditching) in order to avoid ponding surface run-off, and the creation of contaminated leachate.</p>		<p>recommended in the Action Plan on page 11 include “Grade site to minimize standing water, and ditching around site perimeter on east, west, and south perimeters to prevent surface runoff on to site”, and that the cover letter submitted with the Action Plan states that the Hamlet has accepted the Action Plan recommendations and is “committed to making improvements to the operations and infrastructure at the SWDF.”</p> <p>The Action Plan could be revised to include a timeline for the recommended waste management practices and site improvements that they intend to implement, in particular those related to actual Licence requirements (for example, SNP sampling and reporting, waste segregation and signage).</p>
--	---	--	--

5	None	<p>Comment None</p> <p>Recommendation 2) ENR reminds the Hamlet of their obligations to notify the Board and Inspector prior to any discharge of any standing water off-site, or modifications made at site as per the above noted conditions of the Water Licence.</p>	Feb 21: Noted.	Noted.
6	<p>Topic 4: Regulatory Authorities to be included at Meetings Regarding Landfill Expansion, or New Siting.</p>	<p>Comment Section 5.3.4 (New SWDF Location Options) of the Plan discusses options for the future of the Hamlet's Solid Waste Disposal Facility. Two options are provided: Expand the existing facility, or locate a new site. Regulatory authorities. (i.e. The Board and Inspectors) should be kept apprised of the Hamlet's Plans for the existing facility, and what option the Hamlet chooses to pursue with regard to the future of the facility. This may include participation in calls and/or meetings. Involvement of Regulators is paramount in ensuring responsible operation, and project approval.</p> <p>Recommendation 1) ENR recommends that the Hamlet keep Regulators apprised of their Plans for the existing facility, and what option(s) the Hamlet chooses to pursue with regard to the future of the facility. This may include participation in calls and/or meetings.</p>	Feb 21: Noted.	Noted.
7	<p>Topic 5: Inspector Support of Plan Recommendations and Implementation</p>	<p>Comment Multiple recommendations are made in Section 5.0 (Recommendations) of the Plan, which references Environment and Climate Change Canada's (ECCC) 2017 guidance document, Solid Waste Management for Northern Communities. The Inspector supports all recommendations</p>	Feb 21: Recommended operational practices are referenced from ECCC 2017. Intermediate covering operations are recommended once/month to once/year and refer to a soil covering consisting of a minimum of 300 mm	Noted.

		<p>provided in the Plan, especially in Sections 5.1 (Improvements to Waste Management Practices) and 5.2 (Site Improvements), and encourages implementation of the recommended improvements as soon as is feasible. In most cases, many of the recommended site improvements are already required the conditions of the Water Licence. In addition, Section 5.3.2 (Design Criteria) also provides additional design criteria for consideration that the Inspector supports, especially a locked and secure area for hazardous wastes. However, this Section states that "covering operations should occur within the range of once a month to once a year" and in Table 2: Recommended Operation Activities (ECCC, 2017) cover of compacted waste is recommended on a weekly basis. These are conflicting recommended frequencies. ENR support ECCC's weekly cover frequency to minimize windblown waste and deter wildlife attraction, but given Hamlet capacity issues, it is likely that this cover frequency is not feasible. ENR reminds the Hamlet that (in collaboration with Municipal and Community Affairs (MACA-GNWT) it needs to budget and plan for future site improvements in order to achieve these Water Licence requirements on-site.</p> <p>Recommendation 1) ENR recommends that the Hamlet implement many of the recommended site improvements provided in the Plan, as many of them are required by conditions of the Water Licence.</p>	<p>of soil. Daily/weekly covering is also recommended which refers to a minimum of 150 mm of soil. ENR's recommendation is noted.</p>	
8	None	<p>Comment None</p> <p>Recommendation 2) ENR recommends that the Hamlet work</p>	<p>Feb 21: ENRs recommendation is noted.</p>	Noted.

		with MACA-GNWT to budget and plan for future site improvements in order to achieve the Water Licence requirements on-site.		
MVLWB: Erica Janes				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	Section 3.2.2 Updated Solid Waste Generation Estimates	<p>Comment It is unclear whether the updated solid waste generation estimates account for the community's use of the large construction waste area at the Facility, which Board staff observed to contain domestic waste on a site visit in summer 2017. Section 5.1 of the Plan recommends that the Hamlet more closely monitor community use of the large construction waste area.</p> <p>Recommendation Please clarify whether the updated solid waste generation estimate accounts for the community's use of the large construction waste area. If it does not, please provide rationale for not including this potential contribution to waste estimates between 2012-2017.</p>	<p>Feb 21: The plan will be updated accordingly if required by the Board.</p>	<p>The Hamlet should update the Action Plan to account for waste accumulated in Cell 1 and the Construction Waste Area since 2012, to ensure that landfill lifespan estimates and projections are accurate as possible (see Comment ID GNWT-ENR 1).</p>
2	Section 4.2 Updated Landfill Lifespan Projection	<p>Comment The second-last paragraph in Section 4.2 contains a reference error to an unknown reference.</p> <p>Recommendation Please correct the reference error in Section 4.2</p>	<p>Feb 21: The plan will be updated to correct the reference error on page 9.</p>	<p>Acceptable response (see Comment ID GNWT-ENR 3).</p>
3	Section 5.1 Improvements to Waste Management Practices and Section 5.2 Site Improvements	<p>Comment These sections include lengthy lists of recommended improvements to waste management practices and the site itself. The Hamlet indicates in the cover letter that they "have reviewed and accepted the recommendations contained in the Action Plan, and is committed to making improvements to the operations and infrastructure at the SWDF." but no further detail is</p>	<p>Feb 21: A timeline for the recommended waste management practices and site improvements will be included in an updated version of the plan if required by the Board.</p>	<p>The Hamlet should revise the Action Plan to include a timeline for the recommended waste management practices and site improvements that they intend to implement, in particular those</p>

		<p>provided. Part D, condition 22(f) of the Licence requires the Hamlet to provide "A timeline for implementation of the Action Plan, including start and finish dates for construction of the new facility."</p> <p>Recommendation Could the Hamlet provide a timeline for the recommended waste management practices and site improvements that they intend to implement, in particular those related to actual Licence requirements (for example, SNP sampling and reporting, waste segregation and signage)?</p>		<p>related to actual Licence requirements (for example, SNP sampling and reporting, waste segregation and signage).</p>
4	5.3.3 Land Area Required	<p>Comment This section includes mention of the use of the trenching method for landfilling. Board staff note that the trenching method is not considered best practice in landfilling, and that the Hamlet has experienced challenges with ponded water in both the domestic waste and large construction waste areas of the SWDF, which would counter-indicate the use of the trenching method.</p> <p>Recommendation Please provide rationale for suggesting use of the trenching method in the landfill expansion area on the existing lot.</p>	<p>Feb 21: The trench method is selected where soil and terrain conditions allow excavation, as recommended in Kent et. al, 2003. When used in combination with the area method, the site capacity is substantially increased. In Fort Providence, the depth of excavation would be dependent on groundwater table and would likely require the implementation of drainage controls. Excavated soil could later be used as a cover over the waste.</p>	<p>Board staff note that the Hamlet could be reminded that landfilling operations should take hydrogeology into consideration, in order to ensure that groundwater quality is not affected by operations.</p>