



## **Report to Council**

**Report Number:** ENV-07-2022

**Subject:** Central Landfill Action Plan

**Prepared by:** Daniel R. Desforges, Environmental Infrastructure Manager

**Revised by:** Guylain Laflèche, MCIP RPP, Planner

**Date of the meeting:** April 25<sup>th</sup>, 2022

## **Context**

Report was received from Ministry of the Environment, Conservation and Parks (MECP) for an inspection completed at the Central landfill.

## **Report**

An inspection was conducted at the Central Landfill on September 9, 2021 by an MECP officer assisted by a Nation employee. The inspection report was received by email on Tuesday, February 2, 2022. The report indicates that certain improvements must be made to the landfill site to bring it up to standard. The MECP is asking The Nation Municipality to create an action plan to address any deficiencies that need to be addressed to bring it back into regulation. Some important changes are the removal of trees growing over the waste, the installation of a barrier behind the municipal office and the installation of appropriate signage at the entrance to the site. As the plan indicates, we would like to start the work this year and finish it next year.

## **Financial Considerations**

Money had been put in the 2022 budget in consideration of the inspection report. An amount had been allocated to replace the sign at the entrance of the landfill and the installation of a fence at the back of the central office. Money had also been budgeted for the rental of a mechanical shovel for the maintenance of the site as well as for the removal of trees growing on the waste.

N5838-4050-4050 – \$1,500 Signs at the entrance, gate, closure

N5838-5000-5210 – \$3,500 Rental of a mechanical shovel

## **Recommendation**

The Department of the Environment recommends that Council accept the proposed action plan and submit it to the MECP.

## **Attachments**

MECP Report: 1487-4UCMVZ

Proposed Action Plan

## Central Landfill Work Plan



**Purpose:** To create a plan for the improvement of the landfill site as per MECP request.

**Directions:**

1. Use this form as a work plan to help achieve each objective identified by the needs assessment process.
2. Distribute copies of each work plan to the members of the collaboration.
3. Keep copies handy to bring to meetings to review and update regularly.

**Goal:** Bring the Central Landfill Site up to standard as recommended

**Results/Accomplishments:**

<b>Action Steps</b> <i>What Will Be Done?</i>	<b>Responsibilities</b> <i>Who Will Do It?</i>	<b>Timeline</b> <i>By When? (Day/Month)</i>	<b>Resources</b> <i>A. Resources Available B. Resources Needed (financial, human, political &amp; other)</i>	<b>Potential Barriers</b> <i>A. What individuals or organizations might resist? B. How?</i>	<b>Communications Plan</b> <i>Who is involved? What methods? How often?</i>
<b>Step 1:</b> Purchase and installation of a gate at the back of Head office	Enviro staff	By the end of May 2022	<b>A. Employee and equipment</b> <b>B. Financial, equipment</b>	<b>A. None</b> <b>B.</b>	<b>Nation staff, MECP</b> <b>Email</b> <b>After completion</b>
<b>Step 2:</b> Cut the grass and inspect final cover	Enviro staff	By the end of June 2022	<b>A. Employee and equipment</b> <b>B. Require clay to fill holes, equipment</b>	<b>A. Weather and equipment</b> <b>B.</b>	<b>None</b>
<b>Step 3:</b> Remove trees over waste	Enviro staff	By July 15 <sup>th</sup> 2022	<b>A. Employee</b> <b>B. Renting of mechanical shovel, equipment</b>	<b>A. Weather and equipment</b> <b>B.</b>	<b>Nation staff, MECP</b> <b>Email</b> <b>After completion</b>
<b>Step 4:</b> Realign and install stakes to outline the waste contour	Enviro staff	By the end of October 2022 or June 2023	<b>A. Employee and equipment</b> <b>B. Metal stakes</b>	<b>A. None</b> <b>B.</b>	<b>None</b>

<b>Step 5: Purchase, replace and install new entrance signs</b>	<b>Enviro staff</b>	<b>By the end of October 2022 or June 2023</b>	<b>A. Employee and equipment B. New signs, structural materials (post, brace)</b>	<b>A. None B.</b>	<b>Nation staff, MECP Email After completion</b>
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**Evidence Of Success** *A monthly inspection reports will be created to keep the department informed of the process of the work.*

**Evaluation Process** *Evaluate and analyze monthly reports and compare to benchmarks allocated for all tasks.*



Central Waste Disposal Site  
LOT:14, CONCESSION:5, GEOTOWNSHIP:CAMBRIDGE, THE  
NATION, ON,

## Inspection Report

System Number:	1487-4UCMVZ
Inspection Start Date:	09/09/2022
Inspection End Date:	02/22/2022
Inspected By:	Melissa Forget
Badge #:	1442



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(signature)

### **NON-COMPLIANCE/NON-CONFORMANCE ITEMS**

The following item(s) have been identified as non-compliance/non-conformance, based on a "No" response captured for a legislative or best management practice (BMP) question (s), respectively.

**Question Group:** Other Inspection Findings

Question ID	949100		
Question	Question Type	Legislative Requirement	
Were the inspection questions sufficient to address other identified non-compliance items?	Legislative	Not Applicable	
Observation/Corrective Action(s)			
<p>The following instances of non-compliance were also noted during the inspection: As identified in the correspondence of the application to amend ECA No. A471101 prepared by Stantec Ltd. in September 2001, improvements to the site were to be made. These improvements included the removal of existing trees and shrubs within the area that was to be reshaped. At the time of the inspection, many trees and shrubs were located in the landfill area. These trees should be removed as outlined in the closure plan. An action plan shall be developed and submitted by no later than April 29, 2022, addressing the trees and shrubs located within the footprint and reshaped area of the closed landfill.</p> <p>It was also indicated in correspondence of the application to amend ECA No. A471101, that the removal of a culvert on an access trail behind the municipal office or the installation of a gate to control unauthorized access was to be completed. No such work was completed. Documentation shall be submitted by no later than April 29, 2022, outlining what actions will take place to control unauthorized access at the site.</p>			

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program: Regulated Activity:** WASTE : Landfills

<b>Question ID</b>	NCL 1		
<b>Question</b>		<b>Question Type</b>	<b>Legislative Requirement</b>
Does the Closed landfill site have an Environmental Compliance Approval (ECA)?		Legislative	EPA   27   (1)
<b>Observation</b>			
<p>Yes Environmental Compliance Approval No. A471101 was issued to the Corporation of the Nation Municipality on June 7th, 1982.</p> <p>Environmental Compliance Approval No. A471101 Notice No. 1 was issued dated August 1, 2001, indicating that no waste shall be deposited at the Central Landfill Site, and that the closure of the landfill was required to be completed by August 31, 2002. The Central Landfill was required to be closed as per the closure plan and final contours indicated on Figure 5 of the 2001 supporting documentation prepared by Stantec Consulting Limited. Groundwater and Surface Water monitoring is required to be carried out as per Table 4 and 5 of the same document. An Appropriate number of additional monitoring wells along the eastern boundary and justification for the number of wells and a map showing the location to the District Manager was required. By August 31, 2002. the Corporation of the Nation Municipality to address off-site leachate contamination so that the landfill site complies with Reasonable Use Guidelines by the Ministry of the Environment.</p> <p>Environmental Compliance No. A471101 Notice No. 2 was issued dated December 14, 2004, to increase the size of the waste disposal site property from 16.37 hectares to 22.73 hectares to address offsite contamination.</p> <p>Environmental Compliance Approval No. A471101 Notice No. 3 was issued dated December 1, 2010, to reduce the total site area from 22.73 to 22.28 to transfer the land containing Ravine 1 to the Corporation of the Village of Casselman. The groundwater and surface water monitoring is required to continue as per the details outlined in Table 1 and Table 2 of the supporting documentation prepared by Golder Associates dated July 22, 2010. The District Manager may, from time to time authorize modifications to the monitoring program.</p>			

<b>Question ID</b>	NCL 4		
<b>Question</b>		<b>Question Type</b>	<b>Legislative Requirement</b>
Does the landfill have a Contaminant Attenuation Zone (CAZ)?		Information	Not Applicable
<b>Observation</b>			
Yes Environmental Compliance Approval No. A471101 Notice No. 2 issued dated December 14,			

2004, was granted to increase the size of the landfill from 16.37 hectares to 22.73 hectares to include 6.36 hectares of Contamination Attenuation Zone (CAZ).

Question ID	NCL 2		
Question		Question Type	Legislative Requirement
Is this landfill on Crown land?		Information	Not Applicable
Observation			
No			

Question ID	NCL 3		
Question	Question Type	Legislative Requirement	
Does the holder of the landfill ECA own the entire site?	Information	EPA   27   (1), EPA   O. Reg. 232/98   3	
Observation	Yes The owner, The Corporation of the Township of the Nation owns the site, however; The Township received Amended ECA No. A471101 Notice No. 3. The notice acknowledges the transfer of a parcel of land adjacent to the Central Landfill Site property to west, containing Ravine No. 1, to the Village of Casselman.		

Question ID	NCL 5		
Question		Question Type	Legislative Requirement
Is the CAZ on Crown land?		Information	Not Applicable
Observation			
No			

Question ID	NCL 11		
Question		Question Type	Legislative Requirement
Has the holder of the ECA notified the Director in writing within 30 days of a change in holder's status, identity, ownership, or CAZ property rights?		Legislative	EPA   27   (1), EPA   O. Reg. 232/98   5
Observation			
Yes			

<b>Question ID</b>	NCL 7	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>

Is the CAZ on a public road?	Information	Not Applicable
<b>Observation</b>		
No		

<b>Question ID</b>	NCL 9	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Does the holder of the landfill ECA own the property rights for the CAZ?	Legislative	EPA   27   (1), EPA   O. Reg. 232/98   4   (1)
<b>Observation</b>		
Yes		

<b>Question ID</b>	NCL 10	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Do the property rights for the CAZ meet the requirements of Reg 232?	Legislative	EPA   27   (1), EPA   O. Reg. 232/98   4   (3)
<b>Observation</b>		
Yes		

<b>Question ID</b>	NCL 18	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are monitoring well samples taken and tested to determine the quality of the groundwater?	Legislative	EPA   27   (1), EPA   O. Reg. 232/98   25
<b>Observation</b>		
Yes The monitoring wells consist of monitoring well No. G99-5, and G99-6 that are strategically placed at the top of Ravine No. 1 in the corner to determine leachate strength discharging to Ravine No. 1. Monitoring well-MW99-5 has not been sampled since 2008, due to dry conditions.		

<b>Question ID</b>	NCL 19	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are there water quality concerns with the results of the samples that have been tested?	Information	Not Applicable
<b>Observation</b>		
No The groundwater monitoring program consisted of one single sampling event for 2020 that was collected on October 19, 2020. Groundwater level measurements were collected, landfill gas monitoring, and groundwater samples were collected from G99-6. Groundwater samples were analyzed for metals, hardness, alkalinity, total dissolved solids (TDS), chlorides, sulphate, nitrite,		

nitrate, total phosphorous, ortho-phosphate, ammonia, dissolved organic carbon (DOC), and chemical oxygen demand (COD).

The results were compared to Provincial Water Quality Objectives (PWQO) as requested by the MECP in 2005. The site was reported to be in compliance with Guideline B-9 and B-7.

Phosphorous continues to exceed PWQO. Aluminum levels were slightly lower than 2019, and zinc levels have slightly increased.

Phosphorous results were 10 mg/L on October 19th, 2020, and the duplicate was 6 mg/L.

<b>Question ID</b>	NCL 21	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is the site required to manage leachate by the ECA?	Information	Not Applicable
<b>Observation</b>		
No There are no leachate management requirements. Samples are collected for leachate indicator parameters.		

<b>Question ID</b>	NCL 23	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are samples taken to monitor leachate quality?	Legislative	EPA   27   (1), EPA   O. Reg. 232/98   26
<b>Observation</b>		
Yes		

<b>Question ID</b>	NCL 24	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are there concerns with the leachate quality?	Information	Not Applicable
<b>Observation</b>		
<p>Yes</p> <p>Surface water sample results from Ravine 2, surface water sampling location (SW3) had sporadic exceedances of the PWQO that may be directly correlated to leachate landfill impacts. The results of the October samples and the duplicates did not correspond for boron, harness, manganese, potassium, sulphate, TDS, TSS, and zinc. It was reported that this may be caused by sedimentation in the samples causing different results. It was determined that the results were inconclusive at this location.</p> <p>The sample results from Ravine 3 (SW 18) had some PQWO exceedances. The boron sample result may be indicative of landfill leachate.</p>		

The 2020 Central Landfill Annual Monitoring Report concluded that since the landfill was compliant with surface water quality, it does not appear that Ravie 2, and Ravine 3 have been impacted by landfill leachate.

Groundwater discharges to surface water in Ravine 1. The analytical results were compared to PWQO. It was determined that minor leachate impacts were detected.

A detailed review of the 2021 Annual Monitoring Report by the Ministry's Technical Support Section, Groundwater and Surface Water will assist in the determination of landfill leachate indicator parameters and landfill leachate impact at the Central Landfill.

Question ID	NCL 25		
Question	Question Type	Legislative Requirement	
Is there ongoing abatement to address any concerns the ministry has with the leachate monitoring?	Information	Not Applicable	
Observation	No At this time there is no ongoing abatement; however; a groundwater and surface water review of the 2021 Annual Monitoring Report will provide comments and recommendations.		

Question ID	NCL 26		
Question		Question Type	Legislative Requirement
Is the site required to manage landfill gas by the ECA?		Information	Not Applicable
Observation			
No The Nation Municipality conducted a landfill gas monitoring program using the GEM 5000 Landfill Gas Monitor, that measures methane, carbon Dioxide, and oxygen.			
The gas levels were compared against Ontario Regulation 232/98-Landfill Sites standard of 2.5 % at the property boundary. Methane levels were found to be non-detect.			

Question ID	NCL 28		
Question	Question Type	Legislative Requirement	
Is landfill gas managed and monitored at this site?	Legislative	EPA   27   (1)	
Observation			
Yes Landfill gas is monitored as previously indicated.			

<b>Question ID</b>	NCL 30		
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>	
Is there ongoing abatement to address any concerns the ministry has with landfill gas at this site?	Information	Not Applicable	

<b>Observation</b>
No

Question ID	NCL 31		
Question	Question Type	Legislative Requirement	
Is the site required to have a surface water monitoring program by the ECA?	Information	Not Applicable	
Observation	Yes The surface water monitoring program consist of two monitoring sessions to be continued in the spring and fall.		

Question ID	NCL 33		
Question	Question Type	Legislative Requirement	
Is the water quality being monitored/sampled for surface water features on-site and for any off-site surface water features that receive a direct discharge from the site?	Legislative	EPA   27   (1), EPA   O. Reg. 232/98   24	
Observation	Yes Surface water samples are collected at Ravine 2, Ravine 3, SW 18; low lying marsh area, SW 17; and the South Nation River: SW 7. Samples are analyzed for ICP metal scan, calcium, magnesium, sodium, potassium, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, manganese, molybdenum, nickel, silicon, silver, strontium, thalium, tin, titanium, vanadium, and zinc. Samples are also collected for temperature, conductivity, pH, and dissolved oxygen at each location.		

Question ID	NCL 34		
Question	Question Type	Legislative Requirement	
Are there water quality concerns with the results of the samples that have been tested?	Information	Not Applicable	
Observation	No As previously mentioned, some samples have exceeded PQWO in both surface water and groundwater that discharges to Ravine 1. It is also possible that surface water is being impacted by landfill leachate. Further monitoring will assist in detecting landfill leachate impacts.		

Question ID	NCL 35		
Question		Question Type	Legislative Requirement
Is there ongoing abatement to address any concerns the ministry has with the surface water monitoring?		Information	Not Applicable
Observation			
No			

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Question ID	NCL 36		
Question		Question Type	Legislative Requirement
Has the annual post-closure care report been submitted to MECP or available on site as required by the ECA?		Information	EPA   27   (1)
Observation			
Yes			

Question ID	NCL 37		
Question	Question Type	Legislative Requirement	
Is scavenging being prevented?	Legislative	EPA   27   (1)	
Observation	Yes The landfill is closed and covered. No putrescible waste was deposited at the landfill that would attract scavengers. The landfill is also gated and locked, and has a no trespassing sign.		

Question ID	NCL 38		
Question	Question Type	Legislative Requirement	
Has a closure plan been submitted to the MECP?	Legislative	EPA   27   (1)	
Observation			
<p>Yes</p> <p>A closure plan was submitted as part of the Environmental Compliance Approval application in February of 2001, by Stantec Consulting Ltd.</p> <p>The closure plan outlined that the final intended use of the north portion of the landfill was to return the land to natural vegetation that is visually compatible with surrounding land use. The land use of the south portion of the landfill was to be used for the construction of landfill to store leachate impacted surface water for a period of six months until flow conditions in the South Nation River were favorable to accommodate its release. The lagoons were never constructed.</p> <p>As part of the ECA application to amend ECA No. A471101 prepared by Stantec Ltd. in 2001, various improvements were completed at the landfill that consisted of and were no limited to filling in depressions of the east buffer, making improvements to the entrance road; cutting and removing existing trees and shrubs within the area to be reshaped; removing waste from the proposed lagoons area and placing the materials in the landfill area, shaping and compacting the waste in accordance with Figure 5 of the report; applying final cover and compacting to a moderate thickness of 600 mm as per OPSS 570; spreading seed over organic cover, removing existing stockpiled soil, shaping waste in Ravines 2 and 3, removing visual debris and waste from the landfill; improving the entrance and replaced fencing, gate, and lock pad, and sign.</p>			

Question ID	NCL 39				
Question			Question Type	Legislative Requirement	
Has the closure plan been approved by MECP?			Legislative	EPA	27   (1)
Observation					
Yes					

Question ID	NCL 40		
Question	Question Type	Legislative Requirement	
Does the landfill have a procedure in place to address complaints?	Legislative	EPA   27   (1)	
Observation			
Yes No complaints were report as indicated by Mr. Desforbes at the time of the inspection. Any complaints received would be documented and addressed.			

Question ID	NCL 42		
Question	Question Type	Legislative Requirement	
Is there an ECA condition requiring financial assurance?	Information	EPA   27   (1)	
Observation			
No Ministry Guideline F-15 Financial Assurance identifies the criteria for financial assurance. The site is owned by the Corporation of The Nation Municipality, therefore, financial assurance is not required.			

Question ID	NCL 45		
Question	Question Type	Legislative Requirement	
At the time of inspection, there are no indications of inadequate waste management (no visible leachate seeping, no waste deposited illegally outside the landfill boundary, etc)?	Legislative	EPA   27   (1)	
Observation			
Yes			

Question ID	NCL 46		
Question		Question Type	Legislative Requirement
Has the Certificate of Requirement been registered on Title?		Legislative	EPA   27   (1)
Observation			
Yes On December 8th, 1988, the existence and location of the Central Landfill Site was registered on title.			

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<b>Question ID</b>	949100	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Were the inspection questions sufficient to address other identified non-compliance items?	Legislative	Not Applicable
<b>Observation</b>		
<p>The following instances of non-compliance were also noted during the inspection: As identified in the correspondence of the application to amend ECA No. A471101 prepared by Stantec Ltd. in September 2001, improvements to the site were to be made. These improvements included the removal of existing trees and shrubs within the area that was to be reshaped. At the time of the inspection, many trees and shrubs were located in the landfill area. These trees should be removed as outlined in the closure plan. An action plan shall be developed and submitted by no later than April 29, 2022, addressing the trees and shrubs located within the footprint and reshaped area of the closed landfill.</p> <p>It was also indicated in correspondence of the application to amend ECA No. A471101, that the removal of a culvert on an access trail behind the municipal office or the installation of a gate to control unauthorized access was to be completed. No such work was completed. Documentation shall be submitted by no later than April 29, 2022, outlining what actions will take place to control unauthorized access at the site.</p>		

<b>Question ID</b>	NCL 13	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is site access restricted by use of a gate, fence, or physical barrier?	Legislative	EPA   27   (1)
<b>Observation</b>		
Yes At the time of the inspection, the site was gated, locked, and equipped with a sign.		

<b>Question ID</b>	NCL 16	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is the site required to have a ground water monitoring program in the ECA?	Information	Not Applicable
<b>Observation</b>		
<p>No As indicated in correspondence dated June 17, 2005, the MOE groundwater reviewer indicated that because the site is now closed, Guideline B-7 is no longer applicable to the site and Guideline B-9 applies. It was also determined that since the site is closed and the potential for non-conformance with Guideline B-9 was negligible, the groundwater monitoring was discontinued.</p> <p>For the purpose of determining the strength and composition of leachate impacted water, monitoring of groundwater monitoring well G99-6 (located in the fill area east of Ravie No. 1)</p>		

and monitoring well G99-5 is conducted.

Environmental Compliance Approval No. A471101 Notice No. 3 dated December 1, 2010, indicates that the groundwater and surface water monitoring is required to continue as per the details outlined in Table 1 and Table 2 of the supporting documentation prepared by Golder Associates dated July 22, 2010.