



Report n° ENV2024-002  
Date: April 24, 2024  
Submitted by: Denis Longpré  
Subject: Annual Reports – Landfill Site

### Nature/Goal

The purpose of this report is to present to Council the Clarence-Rockland Landfill Site Annual Monitoring and Operations reports as required under the site's Environmental Compliance Approval (ECA).

### Directive/Previous policy

N/A

### Department's recommendation

**THAT** the 2023 Clarence-Rockland Landfill Site Annual Monitoring and Operations reports presented under Report No. ENV2024-002 be received as information.

**QUE** les rapports annuels intitulés '2023 City of Clarence-Rockland Landfill Site Monitoring' et 'Operations Reports' tel que présenté dans le rapport no. ENV2024-002, soient reçus à titre d'information.

### Background

The City of Clarence-Rockland owns and operates a 50 hectare landfill site (12 hectare waste footprint) located at 2335 Lalonde Road. In 2001, the Ministry of the Environment issued an amended provisional ECA for the expansion of the landfill for an additional 740,000 m<sup>3</sup> of waste to be accepted. The City also operates a Leaf and Yard (L&Y) waste transfer station in Rockland and its activities are included in this report

This annual report must be prepared and submitted to the Ministry of the Environment, Conservation and Parks (MECP) by March 31<sup>st</sup> of each year. A copy of the report has been submitted to MOECP by Jp2g on the City's behalf.

Council, as custodian of the landfill site, must be aware of the annual report's contents including results, recommendations and action items so that it may direct resources to make all necessary corrections. Approval of the report is not required.

The annual reports have been divided into two distinctive reports, the *Annual Operations Report* and the *Annual Monitoring Report*

The *Operations Report* (Attachment 1) will point to any deficiencies in terms of site operations and recommended the appropriate measures to be taken. This report endeavours to portray the operations that transpired during the reporting year. Best practices, in terms of landfill site operations could be summarized in the three following points:

- Maximize waste diversion at the site in order to limit the amount of waste landfilled, and;
- Limit the spread of leachate and contaminants in the environment, and;
- Limit or avoid negative impacts of site operations on nearby properties.

The *Annual Monitoring Report* (Attachment 2) describes and discusses the impact of leachate and contaminants at associated sampling locations (surface water, landfill gas and groundwater) to provide a 'snapshot' of the impacts of the landfill site on the nearby environment. Trends of these impacts are analyzed to ensure that they respect designated standards at the boundaries of the site. Exceedance of standards at those locations would 'trigger' the need for contingency measures, and require the City to take appropriate measures to limit the spread of contaminants on surrounding private properties.

#### Discussion

#### ***Annual Operations Report :***

During 2023, waste was deposited in the northeast section of the landfilling area. Based on a site survey completed in November 2023, the estimated volume of waste and daily cover deposited at the landfill was approximately 9,666m<sup>3</sup>.

Using the actual volumes measured over the last five years (2019-2023), the average per capita landfilling rate was calculated to be **0.36m<sup>3</sup>/year**, which is lower than the design per capita of **0.832 m<sup>3</sup>/year**. At this rate (the 5-year average of approximately 11,265 cubic metres), the landfill's remaining capacity of approximately 478,361 cubic metres would reach capacity in over 30 years.

It is important to note that the projected life span of the landfill has increased by nine (9) years compared to last annual reports. With projected waste per capita and growth included, the landfill will reach capacity in 2065.

Based on the information presented in this report, the following summarizes the main recommendations for 2024:

1. Continue with the groundwater, surface water and landfill gas monitoring programs to demonstrate continued compliance with regulatory requirements.
2. Maintain staff training for WHMIS, First Aid as required. Review ECA conditions and operating practices.

#### ***Annual Monitoring Report:***

The 2023 groundwater and surface water programs were carried out in

accordance with Conditions 8(5) and 8(6) of Amended Provisional C of A (now ECA) No. A471203. The objectives of the program were to monitor background water quality; leachate quality; water quality within the area impacted by landfill leachate; and water quality along the interpreted leading edge of the leachate-impacted plume.

Monitoring wells were also monitored for methane gas to assess the potential risks with respect to subsurface methane gas migration towards existing and proposed on-site buildings. Groundwater and surface water sampling locations at the landfill site are shown in the Annual Monitoring Report.

### **Domestic Water Wells**

The Ministry's Water Well Information System (WWIS) was consulted to obtain water well records within 500 m of the site boundary (Golder Associated, 2015 Annual Monitoring Report).

Six wells are reported to be within this area, excluding those wells with a location accuracy of greater than 300 m. These water supply wells completed in bedrock with at least 18 m casing. Given the presence of at least 7 m of silty clay above the bedrock in each of these well records, the wells were not considered vulnerable to landfill leachate impacts.

### **RECOMMENDATIONS**

The following groundwater mitigation measures are recommended:

- For the west boundary, it is recommended to acquire additional land to extend the Contamination Attenuation Zone (CAZ) within the next 5 year, and also to sample the nearest residential wells to the west of the site at least once for the landfill surveillance parameters. There are currently no sampling results available for these residential wells and testing is recommended to obtain baseline conditions.
- As further mitigation measures to the east, it is recommended to ban snow disposal activities everywhere on site.
- Along the northern boundary, it is recommended to install a new monitoring well along the northern boundary to confirm compliance since the nearest northern boundary well is currently located 140m inward of the northern CAZ limit.
- On the south boundary, the groundwater quality shows evidence of roadside impacts that are difficult to differentiate from landfill leachate impacts. At this time, the cut-off wall appears to be successful in mitigating downgradient waste disposal site related impact and no further mitigation measures are recommended.
- Continue to apply interim and final cover to minimize leachate generation.
- The water from the scale office should not be used as a source of drinking water.

Mitigation measures recommended to address surface water trigger exceedances are:

- Ban snow disposal at the site.
- Continue to apply waste cover as per the regular landfill operation program.

**Conclusion:**

With continued efforts by dedicated staff at the landfill site, a new waste compactor, adding and modifying recycling programs, the landfill site's lifespan has increase by nine (9) years.

The monitoring report notes recommendations that wells to the West of the landfill site be sampled to obtained as they were never sampled in the past. Important to note that there are no indications of these wells being contaminated, but sampling would be a proactive measure for future data analysis. There would be no cost for sampling to these homeowners.

As noted in the 2024 budget, the Solid Waste Management Plan approved by council in 2015 will be updated this year. As part of this exercise, the above noted recommendations will be included in the analysis and final recommendations. Staff expects a final report for council approval will be ready at the end of 2024, with different opportunities for participation such as a survey and public open house throughout the year.

[Consultation](#)

N/A

[Recommendations or comments from committee/ other departments](#)

N/A

[Financial impact \(expenses/material/etc.\)](#)

N/A

[Legal implications](#)

The Bourget Landfill Site is subject to an Environmental Compliance Approval (ECA) that is under the jurisdiction of the Ministry of Environment, Conservation and Parks (MECP). Should the municipality default on its obligations from the ECA, the MECP would be in its right to put an order on the activities conducted at this site. The requests from the MECP could have significant impacts on day-to-day operations and be effective immediately.

The MECP will also revise both reports and provide the City of Clarence-Rockland with requirements for the monitoring program in due time.

### Risk management

The purpose of both reports presented is to assess the acceptability of operations and contaminants migration of the landfill site. The largest risk is inaction in regards to the recommendations discussed in the report. To avoid challenging and costly situations, it is recommended that the City tackles the recommendations within a reasonable time frame.

### Strategic implications

**N/A**

### Supporting documents

Attachment 1 – Annual Operations Report

Attachment 2 – Annual Monitoring Report