WASTE MANAGEMENT OF CANADA CORPORATION

RICHMOND SANITARY LANDFILL SITE, MONITORING REPORT NO. 37

PART OF LOTS 1, 2 AND 3, CONCESSION IV, TOWN OF GREATER NAPANEE, COUNTY OF LENNOX AND ADDINGTON

MARCH 25, 2024

RICHMOND SANITARY LANDFILL SITE, MONITORING REPORT NO. 37

PART OF LOTS 1, 2 AND 3, CONCESSION IV, TOWN OF GREATER NAPANEE, COUNTY OF LENNOX AND ADDINGTON

WASTE MANAGEMENT OF CANADA CORPORATION

PROJECT NO.: CA0022409.0678 (8570)
DATE: MARCH 25, 2024

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March 25, 2024

WASTE MANAGEMENT OF CANADA CORPORATION
1271 Beechwood Road
Napanee, ON
K7R 3L1

Attention: Mr. Noah Wayt, District Manager, ELMG, Midwest

Dear Mr. Wayt:

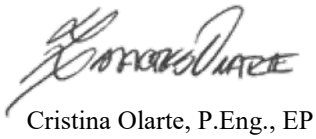
Subject: Waste Management of Canada Corporation - Richmond Landfill Site Annual Monitoring Report #37

We are pleased to provide Monitoring Report #37 in accordance with the conditions of Environmental Compliance Approval No. A371203, and Environmental Compliance Approval No. 1688-8HZNJG.

Two (2) hard copies and **two (2) electronic copies** of this report have been provided to the District Manager and Senior Environmental Officer for the Ministry of the Environment, Conservation and Parks – Kingston District Office. Additional hard copies and/or electronic copies have been provided to the stakeholders as described in Condition 14.2 of ECA No. A371203. We have provided an electronic copy of this document to you and to Chad Moose. If you require additional copies, please let us know.

We trust the enclosed is satisfactory. However, if you have any additional questions, please do not hesitate to contact the writer.

Yours truly,



Cristina Olarte, P.Eng., EP
Waste Management Engineer

CO/BDM/bdm
Encl.

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March 25, 2024
Date

APPROVED[1] BY

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Waste Management Engineer

March 25, 2024
Date

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1 INTRODUCTION

Waste Management of Canada Corporation's (WM) Richmond Landfill site is located within Part of Lots 1, 2, and 3, Concession IV, Former Township of Richmond, now the Town of Greater Napanee. The landfill site consists of a 16.2 hectare waste disposal landfill site within a total site area of 138 hectares and operates under Environmental Compliance Approval (ECA) (formerly Certificate of Approval) (Waste) No. A371203, including amendments. The Richmond Landfill ceased to accept waste for final disposal on June 30, 2011.

This monitoring report for the Richmond Landfill complies with conditions listed in ECA No. A371203, issued March 19, 2021. The report also complies with conditions listed in ECA (Industrial Sewage Works) No. 1688-8HZNJG, issued January 10, 2012. The specific conditions in the ECAs to which this report complies with are listed below:

- Conditions 4.9 (i through vi), 14.2 and 14.3 (i through xv) of ECA No. A371203; and
- Conditions 10(4) (a) (b), (c), (d), (e), (f), (g), and (h) of ECA No. 1688-8HZNJG.

This report was prepared following an overall site inspection and a detailed inspection of the stormwater management infrastructure completed by WSP Canada Inc. (WSP) on July 11, 2023; and discussions with management. The report covers activities and monitoring for the 2023 calendar year.

A copy of ECA No. A371203 is included in **Appendix A.1** of this report. The following other Certificates of Approval (C of As) and ECAs concerning the site are included in this report, as follows:

- ECA No. 1688-8HZNJG (Industrial Sewage Works), dated January 10, 2012, can be found in **Appendix A.2.** This document outlines the requirements for the operation, maintenance, and reporting of the leachate and stormwater management systems.
- C of A (Industrial Sewage Works) No. 4-0129-64-956 dated January 24, 1995 is located in **Appendix A.3**. This approval governs the operation of the oil/sediment interceptor at the former soil recycling pad.
- C of A for a Waste Disposal Site No. A710003 (Soil Recycling) dated December 20, 1993 (**Appendix A.4**, with amendments), and
- ECA No. 5970-9HKP3V (Landfill Gas Collection and Flaring System), dated April 29, 2014 (**Appendix A.5**). The approval permits the operation of a candlestick flare as a contingency measure in the event the enclosed flare is shut down for repair or maintenance.

1.1 HISTORICAL APPEAL OF ECA NO. A371203 AND UPDATE TO ECA CONDITIONS

As noted in previous annual reports, an appeal was filed on January 30, 2012 by the Concerned Citizens Committee of Tyendinaga and Environs (CCCTE) pertaining to seven (7) conditions of ECA No. A371203 issued January 9, 2012. The seven (7) conditions were: Condition 8.5 (Monitoring Programs); Condition 9.1 (Groundwater and Surface Water Impact Contingency Plan); Condition 9.2 (Leachate Collection System Contingency Plan); Condition 9.5 (Public Notification Plan for Contingency Plans); and Conditions 14.1, 14.2, and 14.3 (Monitoring Reports and Annual Reporting). On March 30, 2012, the Environmental Review Tribunal (ERT) granted the CCCTE leave to appeal all the conditions. The ERT lifted the automatic stay initiated by the appeal until the ERT issued its decision or otherwise ordered.

From May 2013 through June 2016, amendments to ECA No. A371203 were issued following ERT decisions pertaining to the aforementioned conditions. Some amendments were also issued that were unrelated to the ECA appeal. The June 2016 amendment to ECA No. A371203 was based on the ERT's final decision issued December 24, 2015, which stated the ERT was no longer required to supervise or participate in the CCCTE appeal of the ECA, subject only to the ERT's determination of the final wording of the ECA conditions and EMP provisions as outlined

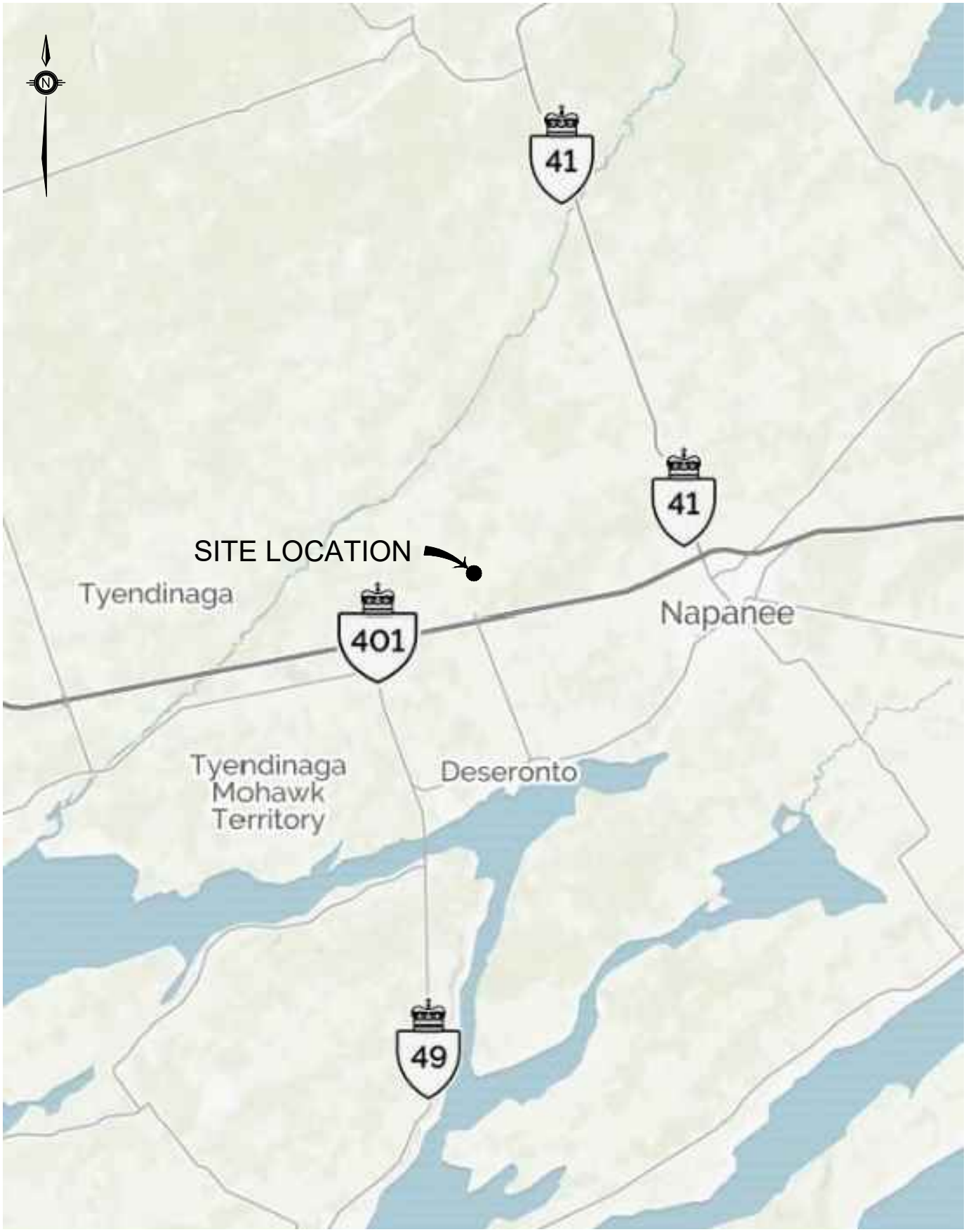
in the order. At present, no conditions of ECA No. A371203 remain under appeal, however, additional amendments to ECA No. A371203 will occur based on the findings of reports required in the June 2016 amendment, as outlined below.

As part of the ERT's ruling issued December 24, 2015, WM was required to demonstrate delineation of leachate-impacted ground on the site and off site. Between January 2016 and December 2020, extensive field studies were conducted to complete the requested delineation. On August 11, 2021, a hydrogeologist from the Ministry of the Environment, Conservation and Parks (MECP) issued an assessment that the delineation of the groundwater contamination had been sufficiently identified, and that WM could move forward with the development of a revised environmental monitoring program. On August 24, 2021, the MECP Kingston District Manager issued his concurrence of the MECP hydrogeologist's assessment that the extent of the leachate-impacted groundwater related to the Richmond Landfill had been delineated. As a result of this confirmation, an ECA application to amend select conditions of ECA No. A371203 was submitted by WM on November 23, 2021. The application was submitted in accordance with Condition 8.5 (e) of the ECA, which required WM to apply for approval to amend the ECA to address any non-compliance with Condition 8.8 and Guideline B-7, including a proposed Contaminant Attenuation Zone (CAZ) to be added to the ECA; and a proposed updated Environmental Monitoring Plan (EMP).

On December 14, 2021, a pre-consultation meeting held with representatives of WM, MECP, and BluMetric Environmental Inc. (BluMetric) to discuss a recommendation listed in the August 24, 2021 MECP Kingston District Manager's confirmation letter regarding the securement of groundwater rights to the property to the east of the site, or establish an engineered system to ensure hydraulic control of off-site migration of landfill leachate impacted groundwater in the intermediate bedrock flow zone. A conceptual design for inclusion of a hydraulic control system (HCS) was prepared by BluMetric and following the meeting, it was determined the HCS conceptual design should be incorporated into the November 2021 ECA application to amend ECA No. A371203. On January 7, 2022, WM submitted an addendum to the ECA application which included the conceptual design for the HCS along with supplementary information requested by the MECP during the December 14, 2021 pre-consultation meeting. A separate ECA application to amend ECA No. 1688-8HZNJG was also submitted by WM to the MECP for approval on January 7, 2022, for the inclusion of flow rates from the proposed hydraulic control system into SWM Pond 3, along with the addition of a monitoring parameter to Table 2 under Condition 8 of this ECA. In October 2022, the MECP provided comments regarding the two (2) ECA applications as referenced in the preceding paragraph. A meeting with representatives of the MECP, WM, and BluMetric was held on December 2, 2022 to discuss the comments and WM's potential responses. The majority of the comments were addressed during the meeting.

On February 2, 2023, a formal response to the MECP comments on the ECA applications was submitted by WM. Throughout 2023, additional correspondence between the MECP and WM was exchanged. As of December 2023, WM advises that the ECA amendment application pertaining to the CAZ and EMP is nearing agreement with the MECP. The ECA amendment application regarding the HCS received comments from both the MECP and the Public Liaison Committee members, and as a result the MECP has requested a modification to the initially proposed HCS design. Modifications to the HCS are being discussed internally before initiating further discussions with the MECP. Discussions were also held regarding the restoration of the approval for use of the leachate holding lagoon as a contingency storage measure. In the event the revised ECAs are issued in 2024, changes to the information presented within future versions of this report may be required.

The site location can be seen in the following **Figure 1**.



C:\1985\8570\DRAWINGS\2024\FINAL 8570-F1-2024 WSP.dwg

SHEET 1	DWN BY: T C G DATE: MARCH 2024 CHK BY: B D M SCALE: N T S WASTE MANAGEMENT OF CANADA CORP. DRAWING NO. 8570 - Figure 1	SITE LOCATION PLAN RICHMOND LANDFILL	WASTE MANAGEMENT	wsp 101-1450 1st AVENUE W OWEN SOUND (ONTARIO) CANADA N4K 6W2 TEL: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

2 PREVIOUSLY SUBMITTED REPORTS

Several reports have been completed and filed with the MECP in compliance with requirements of the conditions of the previous Provisional C of A and current ECAs. Those prepared by WSP (formerly GENIVAR Inc. and Henderson Paddon & Associates Limited.) are as follows:

Monitoring Report No. 1, March 1988

1987 Annual Monitoring - Complying with Conditions 10(b), 10(c), and 10(e) of the C of A dated August 11, 1987.

Final Design Report, September 1988

Complying with Conditions 2(a) and 11(a) of the C of A dated August 11, 1987, (Condition 2(a) and 10(a) of the C of A dated March 30, 1988).

Application for the Approval of Sewage Works for the Leachate Collection and Treatment Facilities, October 1988

Monitoring Report No. 2 to 23

1988 to 2009 Annual Monitoring Reports - Complying with Conditions 9(b), 9(c), 9(e), and 9(f) of C of A No. A371203 dated March 30, 1988, Condition 12 (3) of C of A No. 3-0975-90-916 dated October 21, 1991 (Monitoring Reports No. 5 through 22), and Conditions 10 (4) (a), (b), (c), (d), (e), (f), (g), and (h) of C of A No. 5268-7E8LJW, dated August 19, 2008 (Monitoring Reports 22 and 23).

Clay Liner – Design Construction and Testing, October 1989

Complying with Condition 2(b) of the C of A dated March 30, 1988.

Condition No. 7 Report, December 1991

This report was prepared and filed on December 31, 1991 by Laidlaw in connection with requirements of Certificate of Approval (Sewage) No. 31720-90-916.

Condition No. 29 Report, December 1991

This report was prepared and filed on December 31, 1991 by Laidlaw in connection with requirements of Certificate of Approval No. 19-371203 dated September 4, 1991.

Development & Operations Report

Report dated March 1996, to comply with Condition 2(a) of the C of A and as requested in the Amendment to the C of A on August 1, 1995.

Final Closure Plan

Final Closure Plan dated June 2007 was submitted to satisfy Condition 34 of the C of A that required a detailed closure plan pertaining to the termination of the landfill site, post closure inspection, maintenance and monitoring, and end use.

Construction Quality Assurance/Construction Quality Control (CQA/CQC) Plan for the Final Cover System

CQA/CQC Plan dated June 25, 2010, to comply with Condition 6(b) of the amended C of A issued March 31, 2010.

Odour Monitoring Plan

Submitted June 25, 2010 as part of the EMP prepared by Water and Earth Science Associates (WESA), to satisfy Condition 8(d) of the amended C of A issued March 31, 2010.

Financial Assurance Update

Revised Financial Assurance Plan dated June 25, 2010, to satisfy Condition 19 of the amended C of A issued March 31, 2010.

Operations and Procedures Manual

Updated Operations and Procedures Manual dated June 25, 2010, to satisfy Condition 66 of the amended C of A issued March 31, 2010.

Leachate Collection System Contingency Plan

Dated June 25, 2010, to satisfy Condition 84 of the amended C of A issued March 31, 2010.

Landfill Gas Collection System Contingency Plan

Dated June 25, 2010, to satisfy Condition 88 of the amended C of A issued March 31, 2010.

Design of Low Permeability Surface and Low Permeability Liner for Compost Pad and Pond

Dated June 25, 2010, to satisfy Conditions 138 and 139 of the amended C of A issued March 31, 2010.

Monitoring Report No. 24

2010 Annual Monitoring Report - Complying with Conditions 9(b), 9(c), 9(e), and 9(f) of C of A No. A371203 dated March 30, 1988 (as amended), Conditions 9a and 9b (i through xxv) of Notice 5 to amend C of A No. A371203 dated March 31, 2010, and Conditions 10(4) (a through h) of C of A No. 5268-7E8LJW dated August 19, 2008.

Waste Public Drop off Area ECA Application

Dated May 25, 2011, this application was submitted to request an amendment to Condition 35 of ECA No. A371203, to permit the continued use of the existing public drop off area after site closure on June 30, 2011, for residents to dispose of waste. Approval of this application was provided by the MECP on January 10, 2012.

Monitoring Report No. 25

2011 Annual Monitoring Report – Complying with Conditions 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Operations and Maintenance Manual Revision No. 1 – Stormwater/Leachate Management Systems

Dated March 22, 2012, to satisfy Condition 7 (3) of ECA No. 1688-8HZNJG. This report was updated to reflect changes in site operations. This report was not required to be submitted to MECP but is retained at the site as part of the operating records.

Operations and Procedures Manual Revision No. 1

Dated March 22, 2012, to satisfy Condition 4.3 (c) of ECA No. A371203. This report was updated to reflect changes in site operations. This report was not required to be submitted to MECP but is retained at the site as part of the operating records.

Odour Monitoring Plan Revision No. 1

Dated March 22, 2012, to satisfy Condition 8.5 d of ECA No. A371203. This report was updated to reflect changes in site operations and to address comments from the public and MECP on the initial submission.

Stormwater Contingency and Remedial Action Plan

Dated March 22, 2012 to satisfy Condition 9 (1) of ECA No. 1688-8HZNJG. This condition required the submission of a contingency and remedial action plan pertaining to the stormwater systems within six (6) months of the date of ECA issuance. The report was required to be submitted only to the MECP Kingston District Manager for approval. On March 15, 2021, an Environmental Officer from MECP Kingston District Office notified WM via email that the plan was reviewed as part of a desktop review of ECA No. 1688-8HZNJG. An action item originating from the MECP's review of the plan was provided to WM in the March 15, 2021. Refer to **Section 4.2.2** for additional details. To date, no other correspondence pertaining to the plan has been provided by WM, and acceptance of the stormwater contingency and remedial action plan has not been incorporated into the ECA.

Transfer Station Waste Frequency Removal ECA Application

Dated September 14, 2012, WM requested an amendment to Condition 5.18 (1), to reduce the frequency of waste removal from the public drop off area from twice per week, to once every two (2) weeks. To date, WM has not received comments from the MECP regarding the status of this application.

Public Notification Plan

Dated September 19, 2012 to satisfy Condition 9.5 of ECA No. A371203. This condition required the submission of a public notification plan to notify parties that contingency plans were implemented at the site, within 12 months of the date of issuance of the ECA.

Odour Survey Protocol

Dated February 2013. This report was submitted to address comments from the ERT hearing.

Public Notification Plan

Dated February 2013. This report was submitted to address comments from the ERT hearing.

Financial Assurance Update

Revised Financial Assurance Plan dated March 25, 2013, to satisfy Condition 2.7 of the ECA issued January 9, 2012.

Monitoring Reports No. 26 and 27

2012 and 2013 Annual Monitoring Reports – Complying with Conditions 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Maintenance Schedule – Ditches, Culverts, and Leachate Collection System

Dated June 12, 2014 to satisfy Conditions 13.9 and 13.10 of ECA No. A371203. This schedule was submitted as part of a MECP application regarding maintenance on the aforementioned landfill infrastructure for the duration of the landfill's contaminating lifespan.

Addendum to Monitoring Reports No. 26 and 27

Dated September 15, 2014, to satisfy Condition 5.11 (i through iv), which was inadvertently excluded from the 2012 and 2013 annual monitoring reports. This letter report was submitted to the MECP and various stakeholders as identified under Condition 14.2 of Notice 1 to amend ECA No. A371203.

Operations and Procedures Manual Revision No. 2

Dated October 28, 2014, to satisfy Condition 4.3 (b) of ECA No. A371203. This report was updated to reflect changes in site operations. This report was not required to be submitted to MECP but is retained at the site as part of the operating records.

Odour Monitoring Plan Revision No. 2

Dated November 24, 2014. This report was submitted as part of a MECP application to request consolidation of the Odour Monitoring Plan Revision No. 1, and the Odour Survey Protocol documents identified under Condition 8.5 (d) of ECA No. A371203 and was updated to reflect changes in site operations.

Leachate Storage System Design Brief

Dated January 13, 2015. This report was submitted as part of an ECA application seeking approval to construct an onsite leachate storage facility to simplify and improve leachate removal and truck loading operations.

Monitoring Report No. 28

2014 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Financial Assurance Update

Revised Financial Assurance Plan dated March 30, 2016, to satisfy Condition 2.7 of the ECA issued January 9, 2012. Submission was accepted by MECP in July 2017.

Monitoring Report No. 29

2015 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Surface Emission Survey Frequency Reduction Application

Dated June 24, 2016. This application was prepared in regard to a Condition in ECA No. A371203 which permits WM to apply for a reduction in the frequency of surface emission surveys performed in a calendar year based on the results of the 2013 and 2014 surface emission surveys. Submission was accepted by MECP in July 2017.

Odour Monitoring Plan Revision No. 3

Dated June 24, 2016. This report was prepared to accompany the Surface Emission Survey Frequency Reduction Application as referenced above. Submission was accepted by MECP in July 2017.

Monitoring Report No. 30

2016 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Monitoring Report No. 31

2017 Annual Monitoring Report –Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Monitoring Report No. 32

2018 Annual Monitoring Report –Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

ECA Application - Revisions to Environmental Compliance Approval No. A371203

Dated January 14, 2020. This application was prepared to request approval for amendments (removal or revision) to several Conditions of ECA No. A371203. There are several Conditions in the ECA which were relevant when the site was in operation, but no longer apply now that the landfill has closed. Correspondence was exchanged between WM and the MECP between late September 2020 and late January 2021. Approval was granted via the ECA issued March 19, 2021.

Monitoring Report No. 33

2019 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Financial Assurance Update

Revised Financial Assurance Plan dated March 20, 2020, to satisfy Condition 2.7 of the ECA issued July 14, 2017. Additional information was requested by the MECP in late December 2020. Approval was granted via the ECA issued March 19, 2021.

ECA Application - Forcemain Between North Chamber and Leachate Holding Lagoon

Dated April 15, 2020. This application was prepared to request approval of the forcemain between the north chamber (pumping station PS2) and the leachate holding lagoon. The ECA application was one of the applications identified under the longer-term Action Item measures prepared by WM in response to the January 23, 2020 Provincial Officer's Order (POO) pertaining to an overflow of leachate from the south pumping station in early

January 2020 and leachate spill event near the leachate holding lagoon in mid-January 2020. Correspondence was exchanged between WM and the MECP between late September and mid-November 2020 pertaining to the application. Approval to construct the forcemain was granted via the ECA issued March 19, 2021.

ECA Application - Modifications to Leachate Storage System

Dated April 30, 2020. This application was prepared to request approval of various changes to the previously approved leachate storage system under Condition 5.5 of former ECA No. A371203. The ECA application was one of the applications identified under the longer-term Action Plan measures prepared by WM in response to the January 23, 2020 MECP POO pertaining to an overflow of leachate from the south pumping station in early January 2020, and leachate spill event near the leachate holding lagoon in mid-January 2020. The changes include an increase in the size and the type of storage tank (from a buried unit to a above ground facility), among other items. Correspondence was exchanged between WM and the MECP between late September 2020 and mid-November 2020 pertaining to the application. Approval was granted via the ECA issued March 19, 2021.

Public Notification Plan

Dated November 2020. This report was submitted to address comments from the MECP and various stakeholders regarding the January 2020 ECA application requesting approval for amendments to several Conditions of former ECA No. A371203. Approval was granted via the ECA issued March 19, 2021.

Monitoring Report No. 34

2020 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Stormwater Infrastructure Inspection and Maintenance Plan

Dated April 29, 2021. This report was submitted after an Environmental Officer with the Kingston District MECP completed a desktop review of ECA No. 1688-8HZNJG. Condition 9 (1) of the ECA required WM to submit a Stormwater Contingency and Remedial Action Plan which within six (6) months of the date of issuance of the ECA. WM submitted a plan on March 22, 2012 to the MECP Kingston District Manager for approval. The MECP's review of the plan identified a statement where a formal maintenance program was to be submitted five (5) years after site closure that would formalize a maintenance schedule for the remaining contaminating lifespan of the landfill. After discussions with WM, the MECP was unable to determine if the formal maintenance schedule was produced and noted that no formal cleaning or maintenance of the ponds has been completed. On March 15, 2021, the MECP Environmental Officer requested WM provide a written response outlining the measures to be taken to conduct a detailed performance assessment of the stormwater ponds including timeframes for completion of proposed work and submission of findings to the MECP. The stormwater infrastructure inspection and maintenance plan was intended to satisfy the MECP's request. To date, no response has been received from the MECP regarding the plan.

Spill Contingency Plan

Dated June 23, 2021. This report was intended to satisfy Condition 9.4 (1) of ECA No. A371203, which required the submission of a spill contingency plan that is prepared in accordance with Ontario Regulation 224/07 and should include procedures to prevent and mitigate accidental leachate discharge to the environmental. To date, no response has been received from the MECP regarding this plan.

Monitoring Report No. 35

2021 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of former ECA No. A371203 dated July 14, 2017 (valid from January 1, 2021 through March 18, 2021); Conditions 4.9 (i through vi), 14.2 and 14.3 (i through xv) of current ECA No. A371203; and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Monitoring Report No. 36

2022 Annual Monitoring Report – Complying with Conditions 4.9 (i through vi), 14.2 and 14.3 (i through xv) of current ECA No. A371203; and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Spill Contingency Plan – Revision No. 1

Dated October 17, 2023. This report was intended to satisfy Condition 9.4 (1) of ECA No. A371203, which required the submission of a spill contingency plan that is prepared in accordance with Ontario Regulation 224/07 and should include procedures to prevent and mitigate accidental leachate discharge to the environmental. The plan was updated from the original version submitted in June 2021 to reflect as built information regarding the location of the onsite leachate storage tank and leachate forcemains. The plan was submitted to the District Manager and the MECP Kingston District Office. To date, no response has been received from the MECP regarding this plan.

3 REPORTING REQUIREMENTS – ECA NO. A371203

3.1 ASSESSMENT OF ENGINEERING FACILITIES, DESIGN AND OPERATIONS OF THE SITE, AND ADEQUACY OF, AND NEED TO, IMPLEMENT CONTINGENCY PLANS

Condition 14.3 i of the ECA requires an assessment of the operation and performance of all engineered facilities. The following describes the facilities reviewed and the assessment completed.

3.1.1 LANDFILL MASS

The existing landfill mass was reviewed for slope stability, areas of settlement, integrity of the final cover, vegetation, leachate and gas seeps, and areas requiring remediation. The landfill slopes are regularly reviewed by WM and were inspected in the past year by WSP. No areas were discovered with slope instability, and minor amounts of settlement is occurring, mainly in the higher elevations of the landfill. The landfill final cover vegetation was reviewed and has established well, however, there are some barren areas on the north slope and on the crest of the landfill mound and in other isolated areas which require re-seeding, which were identified to WM during WSP's 2023 site inspection. Mowing of the grass on the landfill mound and screening berms, as required by a Condition of ECA No. A371203, had not been completed at the time of WSP's inspection, and a recommendation to undertake this activity before the end of the growing season was included in the report summarizing the findings from the inspection. Otherwise, no remedial work is required on the landfill mass.

3.1.2 LEACHATE COLLECTION SYSTEM

The existing leachate collection system infrastructure was reviewed to determine if they are operating as designed, and if any remedial work is required. BluMetric staff regularly reviews the operation of the leachate system and if repairs are required, BluMetric and WM complete this work. It is understood that leachate is being collected from the system, and that no blockages are present.

High-level alarms were installed in PS2 (also known as the north chamber) and replaced in PS1 (also known as the south pumping station) in 2010 as per an ECA requirement. Improvements to the leachate collection system were undertaken in 2021 and 2022 to eliminate the direct removal of leachate from PS1 and PS2 by tanker trucks, as described in further detail under **Sections 3.4.6** and **3.4.7** of this report. Monitoring of leachate levels within PS1 and PS2, along with levels in the leachate storage tank and other infrastructure components, is completed by BluMetric using the programmable logic controller present within PS3.

Refer to **Section 3.2** for a discussion regarding the efficiency of the leachate collection system; and for additional site improvements pertaining to leachate management proposed by WM to the MECP.

3.1.3 LANDFILL GAS COLLECTION SYSTEM

On August 16, 2021, the enclosed flaring system was shut down due to low gas generation rates that could not sustain flare operation. The flare has not been in operation since then.

3.1.4 STORMWATER MANAGEMENT SYSTEM

Three (3) stormwater sedimentation ponds collect stormwater runoff from the landfill site and remove sediment prior to discharge. Ponds are regularly inspected by WM staff. The ponds in the northwest and northeast corners of the site had no operational issues in 2022. The south pond was reconstructed in 2008-2009 and had no operational issues in 2022.

A detailed inspection of the stormwater infrastructure was completed by WSP on July 11, 2023. Refer to **Section 4.2.2** and **Section 4.2.3** of this report for further information on the inspections completed, along with maintenance recommendations for components of the stormwater infrastructure.

3.1.5 LEACHATE HOLDING LAGOON

The leachate holding lagoon was inspected during the July 11, 2023 annual site inspection conducted by WSP and was found to be in acceptable condition. The lagoon was decommissioned by WM in 2010 but remained in place as a contingency for leachate storage. The lagoon was utilized for a period in January 2020 to temporarily store leachate due to high flows experienced as a result of abnormal rainfall events. No issues were noted with the lagoon by WM during this period.

On January 23, 2020, a MECP POO revoked the use of the leachate holding lagoon as a contingency storage measure. Additional details regarding the POO, and WM's action plan in response to the POO, can be found in Sections 3.15 and 3.23 of the 2020 annual monitoring report. The POO has since been resolved. As noted under Section 1.2 of the 2021 annual monitoring report, approval for construction of a leachate forcemain between PS2 (the north chamber) and the leachate holding lagoon was granted via the ECA issued March 19, 2021. The leachate forcemain shall not be operated until it has been demonstrated and accepted by the MECP that the integrity of the liner is not compromised and leakage from the lagoon is not of concern. The forcemain has not been constructed as of December 2023.

Leachate remains present in the holding lagoon as a result of transfers from the north chamber that occurred prior to January 23, 2020. Between May and November 2020, leachate from the lagoon was moved back to the north chamber and was then pumped from the north chamber into a tanker truck and hauled from the site for treatment. During brief periods in 2021, leachate was again moved back from the lagoon to the north chamber and removed from the north chamber to a tanker truck and hauled from the site for treatment. In 2022, leachate from the lagoon was moved into pumping station PS2 (the north chamber) between June and November 2022. During 2023, leachate was transferred from the north lagoon into PS2 between June and October. Quantities removed from the lagoon are tracked separately and subtracted from the overall volume of leachate removed by the haulers at the truck loading station, to determine the annual volume of leachate generated by the landfill mound. A small volume of leachate remains present in the holding lagoon. The removal of the remaining leachate from the lagoon is expected to be completed in 2024.

In September 2023, maintenance activities were undertaken on the leachate holding lagoon to maintain the clay cover on the side slopes of the lagoon where the high density polyethylene geomembrane was visible. Material was compacted over the geomembrane, and vegetation (seeding) was then applied to the slopes.

Throughout 2023, WM continued discussions with the MECP regarding the restoration of approval to utilize the leachate holding lagoon as a contingency storage measure. This item remains under discussion; and in 2024, WM will be seeking to gain approval for its use.

3.1.6 CONCLUSIONS

After a review of the engineered facilities at the site, it was concluded that there is currently no need to amend the design or adjust the operation of the Richmond Landfill site.

Since all engineering works are performing as designed, and monitoring results are satisfactory, it is our conclusion that at this time, there is no need to implement any contingency plans.

3.2 LEACHATE COLLECTION SYSTEM EFFICIENCY

Condition 14.3 ii of the ECA requires an assessment of the efficiency of the leachate collection system.

A review of the leachate volume removed from the landfill site was determined to be of a reasonable volume to conclude that the leachate collection system is continuing to operate effectively and is further discussed in **Section 3.11**. BluMetric regularly inspects the infrastructure and has determined that there are no blockages in the system. WM advises that an attempt was made to clean the leachate collection system in September 2023, but due to elevated liquid levels the event could not be completed. The event is planned to be completed during the summer of 2024.

On March 19, 2021, the MECP granted approval for two (2) ECA applications to amend ECA No. A371203. The applications pertained to longer term measures to manage, assess, and reduce leachate volumes at the site, as identified under the Action Plan prepared by WM in response to the MECP POO issued on January 23, 2020. Approval was granted for the construction of a permanent forcemain between PS2 (the north chamber) and the leachate holding lagoon. Approval was also granted for modifications to the leachate storage facility design previously approved under Condition 5.5 of former ECA No. A371203. Refer to **Sections 3.4.6** and **3.4.7** for a description of the major components of the leachate storage tank and leachate storage system conveyance network.

Construction of the leachate storage tank was completed in late 2021, while work on the leachate storage system was completed in early 2022. The system operated well and no issues were reported by WM.

In late September 2022, BluMetric personnel took over day to day operations at the facility. In late March 2023, a small leachate release occurred from a rented temporary leachate storage tank located adjacent to the truck loading station. The temporary storage tank was used to contain leachate removed from the onsite leachate storage tank when the high level leachate elevation, as listed under a Condition of ECA No. A371203, was reached during a period when elevated rainfall events resulted in a temporary shutdown of the receiving sewage treatment facility in the Town of Greater Napanee. Additional information regarding this release is provided in **Section 3.8** of this report. In addition, a communications issue in the leachate conveyance system was identified in 2023 and was resolved by WM. Refer to **Section 4.1.2** for additional information. No other issues with the leachate collection system were identified by WM or BluMetric in 2023.

As noted under **Section 1.1**, ECA applications to amend both ECA No. A371203 and ECA No. 1688-8HZNJG for a proposed HCS were submitted on January 7, 2022, with the initial application to amend ECA No. A371203 for the CAZ and EMP submitted on November 23, 2021. The intent of the HCS is to ensure hydraulic control of off-site migration of landfill leachate-impacted groundwater. Review of the ECA applications were completed by the MECP and comments were provided to WM in October 2022. Representatives from the MECP, WM, and BluMetric met in December 2022 to discuss the comments and potential responses. A response from WM to the MECP's comments was submitted on February 3, 2023. Additional discussions between the MECP, WM, and BluMetric in 2023 took place, and the Public Liaison Committee provided comments on the HCS design. The MECP has requested modifications to the original HCS design, while the application pertaining to the CAZ and EMP is nearing agreement. WM advises that internal discussions regarding the proposed changes to the HCS are ongoing. Discussions also took place in October 2023 between WM and the MECP regarding the restoration of approval to utilize the leachate holding lagoon as a contingency storage measure. WM will be seeking approval to utilize the lagoon as contingency storage in 2024.

3.3 FINAL AND VEGETATIVE COVER INSPECTIONS

Condition 14.3 iii of the ECA requires a summary of the inspection of the final cover and vegetative cover, including identification of any seepages and remedial actions taken.

The placement of the final cover system was completed on the Richmond Landfill on September 23, 2011. Inspections which took place in 2023 verified that vegetative cover has mostly become well established. WM indicated re-seeding of select areas had been completed in June 2022. Some barren areas were identified during WSP's inspection on the north slope and on the crest of the landfill mound, along with other isolated areas. During

WSP's inspection in July 2023, former barren areas and seep repair locations which WM indicated had been seeded in June 2022 was noted to have vegetation present in varying stages of growth.

WM advised that no seep repairs were completed in 2023. No obvious leachate seeps were observed during WSP's annual inspection.

3.4 PREVIOUSLY EXISTING SITE FACILITIES

Condition 14.3 iv of the ECA requires information regarding previously existing site facilities.

3.4.1 BUILDINGS AND SIGNAGE

The landfill site office is located to the south of the landfill site on the main access road. The building houses hauling division staff, record services, communications equipment, weigh scale recording devices and operating staff facilities.

Landfill equipment is serviced in the existing maintenance building. Fuel storage is located in this area and a staff room for the landfill equipment operators is attached.

Several unoccupied homes and barns on WM-owned land surrounding the landfill were demolished in 2017 and in 2021.

Signs are erected along the access road near Beechwood Road identify the landfill site. The main sign supplies the following information:

During WSP's annual site inspection completed in 2023, it was observed that the site's complaints procedure signage and this main sign, was very faded and was obscured by vegetation. Some information required by a Condition of ECA No. A371203 (name of contact) was noted to be missing. A recommendation to replace the sign and remove the vegetation was included in the annual site inspection report.

A sign is also present on the main gates notifying the public drop off area for local residents was closed February 28, 2014 and remains closed.

3.4.2 STAFF

WM staff manages and operates the site. Mr. Noah Wayt acted as the Landfill Manager for the 2023 calendar year. The site was managed by the Environmental Legacy Management Group (ELMG) (formerly Closed Sites Management Group (CSMG)) with Mr. Chad Moose being the Area Director of the ELMG – Mideast Group.

From January 1 until September 2022, WM employed one (1) operator who was responsible for site maintenance and repairs. The operator retired from WM in September 2022. From late September until December 31, 2022, BluMetric was responsible for daily facility operations and maintenance, and this continued throughout 2023. Other monitoring staff and equipment operators are brought on the site for contract work as required for ongoing maintenance activities.

3.4.3 EQUIPMENT

Upon completion of landfilling activities, several pieces of equipment were removed from the site. The following equipment remains onsite to assist in performing regular maintenance activities:

- a Case International farm tractor with a rotary mower.

For 2023, snow removal was completed by Dillenbeck Lawn and Property Maintenance. The existing tractor on site was used for the snow removal. If additional equipment was required, it was obtained from local contractors.

3.4.4 TONNAGE CONTROL

A truck weigh scale is present at the site and was used to record daily net tonnages received when the site was accepting waste for disposal. A history of the present scale is provided as follows:

In 1998, an 80' Active Mod-U-Dec pitless truck scale with a Toledo digital weight display and printer was connected to a computer for data management. Truck traffic was controlled from the office by traffic light signals and by an air phone intercom system as trucks approached the scale.

- In 2004, electrical work was completed to allow the scale facility to be run by a generator in the event of power failure to the site. Standby power could be connected to the scale house facility to operate the necessities for the acceptance of waste vehicles.
- Three (3) separate calibration procedures were performed on the scale in 2012, and two (2) separate calibration procedures were performed on the scale in 2013, to ensure that weights were recorded correctly. Load cells were also repaired as required. One (1) calibration procedure was performed on the scale in June 2014 to ensure that weights were recorded correctly.

In 2023, the scale was not in operation, and no calibration was performed.

3.4.5 FORMER SOIL RECYCLING PAD

A vacant area located to the east of the existing maintenance building is the former soil recycling pad and was used in the past for temporary storage of hydrocarbon-impacted soil. Upon site closure on June 30, 2011, the Richmond Landfill ceased to accept waste, including contaminated soil, for final disposal. The pad was flushed and cleaned after soil receipt ended. Surface runoff from this pad flows directly to the stormwater ponds. The oil/sediment separator is monitored for sediment buildup and cleaned as required. No buildup of sediment was noted within this structure during WSP's annual site inspection completed on July 11, 2023. A recommendation to secure the lids on the oil/sediment separator; along with installation of "Confined Space" signage, was included in the 2023 annual site inspection report.

In early 2022, the truck loading area for removal of leachate from the onsite leachate storage tank, located on the east side of the former recycling pad area, commenced operation. Any spills of leachate from truck loading

activities are directed to a catch basin which drains into PS4, located to the immediate east of the truck loading station. This leachate is conveyed via forcemain back to PS3 and into the leachate storage tank.

In 2023, a portion of the former soil recycling pad was the site of a small leachate release from a temporary leachate storage tank used when the high level elevation of leachate within the leachate storage was reached. Refer to **Section 3.8** for additional information. Remedial activities on a section of the pad were completed in late March and early May 2023.

3.4.6 LEACHATE STORAGE TANK AND CONTAINMENT SYSTEM

The leachate storage tank is located to the east of the former soil recycling pad and is part of the improvements to the leachate collection system undertaken by WM in 2021. The leachate storage tank consists of a glass fused steel (GFS) above ground facility and measures approximately 20.46 metres (m) in diameter and approximately 9.47 m in height. The tank can store approximately 3,000 cubic metres (m^3) of leachate. All GFS panels are bolted into place and sealed. The roof is constructed of triangular aluminum sealed panels that are clamped in an interlocking manner to an aluminum truss system forming a dome structure. The entire tank and dome structure is insulated, and the tank is cladded on the exterior. An access ladder is present on the tank along with an access hatch on the roof. Within the tank, piping through the floor contains both an inlet for leachate that is pumped from the various pumping stations into the tank, and an outlet for removal of leachate from within the tank to the truck loading area located to the west of the storage tank. A vertical stilling well pipe is installed under the tank inlet line to minimize liquid splash and foaming. The tank is equipped with a pressure sensor to facilitate continuous liquid level monitoring. A radio antenna is present on the roof to establish communications between PS2 (the north chamber) and PS3, as outlined in **Section 3.4.7**.

The leachate storage tank is protected against catastrophic spill by a GFS secondary containment ring wall which has an inside diameter of approximately 32.4 m and a height of 4.47 m. The secondary containment ring wall can store up to 3,689 m^3 of leachate, which is excess of the capacity of the leachate storage tank. The containment area is equipped with a catch basin and drain line with a normally closed valve, with a discharge line leading to the northeast side of the east half of SWM Pond 3.

Construction of the leachate storage tank and containment system was completed by Greatario Engineered Storage Systems of Innerkip, ON. Construction commenced in April 2021. Substantial performance of the work was issued on December 6, 2021. The system commenced operation in 2022.

3.4.7 LEACHATE STORAGE SYSTEM

Improvements and upgrades to the existing leachate collection system in conjunction with the leachate storage tank installation are provided as follows:

- Pumping station PS1 (existing south pumping station): improvements included the removal of the existing Grundfos pumps within the two (2) sideslope risers within the pumping chamber with larger (5.5 horsepower) EPG Surepumps. The larger pumps are capable of delivering leachate to the top of the leachate storage tank. The entire piping network within PS1 was also removed; and new pipes, valves and gauges were installed, along with pressure transducers on each pump. Associated electrical cables and conduit from PS1 back to the control panel within PS3 (located west of the leachate storage tank) were also installed. Installation of a 100mm diameter high density polyethylene (HDPE) forcemain to pump leachate from PS1 to the leachate storage tank was also completed.
- Pumping station PS2 (existing north chamber): a 7.5 horsepower EPG Surepump was installed within the existing chamber, which is capable of pumping leachate from PS2 via forcemain to the top of the leachate storage tank. A lifting assembly for removal of the pump from within PS2 was also installed. A pressure transducer was installed on the pump and new float sensors were installed within the pumping chamber. A radio antenna was installed at PS2, along with associated electrical cables in a common trench to a radio tower located at the northeast corner of the landfill, and to a second radio tower located at the southeast

corner of the landfill. The radio towers were installed to establish communications between PS2 and PS3 via the radio antenna installed on the roof of the leachate storage tank.

- New pumping station PS3: located to the west of the leachate storage tank, PS3 is comprised of a slab on grade heated building measuring approximately 5 m x 6 m. The building houses the control panel for the leachate storage system, and contains two (2) end suction, variable speed drive equipped Smart Turner pumps, which draw leachate from the storage tank to the truck loading area located on the east side of the former soil recycling pad. Electric spring actuator motors are present on the suction and discharge lines to prevent accidental emptying of the storage tank. Flow meters connected with the programmable logic control (PLC) are used to control the speed of the pumps when filling trucks. A 100mm HDPE discharge forcemain extends from PS3 to a structure on the former soil recycling pad and is terminated with a manual isolation valve and camlock hose connection adapter extending from a concrete structure. Operators of trucks hauling leachate will connect a hose from the camlock fitting at the structure to the camlock fitting on the truck. A control panel containing start and stop buttons for the PS3 pumps is present on the north side of the truck loading area for operator convenience. Power is supplied to the building via electrical cable extending from the west side of PS3, extending northwest and west along the south access road, and entering the electrical building at the enclosed flare.
- New pumping station PS4: located to the north of the truck loading structure and to the northeast of the former soil recycling pad, PS4 is comprised of a 1500mm diameter concrete structure containing a submersible pump and associated electrical controls and sensors. The purpose of PS4 is to convey any leachate spilled during truck loading operations back into the leachate storage tank, and to capture any surface water from the truck loading area. PS4 is connected via forcemain to the common forcemain servicing PS1 and PS2; and
- Common leachate forcemain: a new 100mm HDPE forcemain was installed from PS2 around the east half of the landfill down to PS3. A new 100mm forcemain was installed from the existing HDPE pipe extending into the floor of PS1, extending east back to PS3. A 75mm HDPE forcemain extends from the north side of PS4 into the HDPE forcemain extending from PS1. Electrical cables and conduit were installed within the same trench as the forcemains from PS2 to PS3; from PS3 to the truck loading area, and from PS1 back to PS3 at higher elevations than the forcemain.

Several valves for control of leachate from the various locations to the leachate storage tank were also installed but are not referenced in the aforementioned sections for ease of simplicity when detailing the leachate storage system.

Construction of the leachate storage system commenced in late June 2021 by R.W. Tomlinson Limited and was substantially completed on December 23, 2021. In early 2022, the leachate storage system was completed and truck loading operations commenced at the station located on the east side of the former soil recycling pad.

Refer to **Section 3.8** and **Section 4.1.2** for operational issues involving the leachate collection system in 2023.

3.4.8 SMALL VEHICLE TRANSFER AREA

The public drop off area was approved for operation by the MECP on January 9, 2012, subject to the conditions listed in ECA No. A371203, and opened to the public on February 1, 2012. This area was used for small vehicles offloading waste, recyclables, and compostable materials. This practice facilitated the transfer of material from the smaller vehicles into the roll-off bins. A reuse centre where residents could donate and exchange reusable goods was also constructed within the public drop off area. WM participated in the Ontario Electronic Stewardship (OES) program and Ontario Tire Stewardship (OTS) programs for electronics and tire recycling and was also a member of Stewardship Ontario's Municipal Hazardous or Special Waste (MHSW) program and collected paint and single use batteries for disposal offsite. White goods, including those which were tagged "freon removed", and scrap metal, were separated from the waste stream and temporarily stored on the site. WM removed these materials regularly for recycling.

On February 28, 2014, WM ceased operation of the public drop off area, reuse centre, OTS, OES and white goods areas. All approvals pertaining to the operation of the facility remain in place under ECA No. A371203. WM may elect to re-open the facility at a future date.

3.4.9 LANDFILL GAS COLLECTION AND FLARING SYSTEM

The landfill gas collection and flaring system (LFGCS) was implemented for odour control at the Richmond Landfill in 2000. The construction of Phase I of the system was carried out in the years 2000/2001 with the installation of a 2.1 metre diameter x 12.2-metre-high enclosed flaring system, according to Certificate of Approval (C of A) (Air) No. 8-4076-99-006, issued by the MECP on December 21, 1999. In 2003, C of A (Air) No. 1355-6LRN9N was issued by the MECP, which revoked and replaced the previous C of A. On April 29, 2014, the MECP issued ECA No. 5970-9HKP3V, which revoked and replaced the previous C of A. This approval permits the operation of a candlestick flare only when the enclosed flare is shut down for maintenance and repair.

Subsequent expansions and upgrades to the LFGCS were made since the installation of the initial system in order to burn the landfill gas produced by the decomposing waste. Up until August 15, 2021, WM reported that the present system collected gas from five (5) leachate clean-outs, four (4) leachate collection manholes and 42 vertical gas wells of the 62 wells installed. 20 decommissioned wells are also present.

As noted under **Section 3.1.3**, the enclosed landfill gas flare was shut down due to low gas generation rates on August 16, 2021 and has not resumed operation. There have been no issues with odours or gas migration since the flare was shut down.

3.4.10 SEDIMENTATION PONDS

The three (3) sedimentation ponds were operational in 2022. Prior to 2012, pond discharge was controlled and not permitted without prior testing and approval from MECP District staff. On January 10, 2012, the MECP issued ECA No. 1688-8HZNJG, which revoked the previous C of A for sewage works. The ECA allows for WM to operate the discharge outlet valves on the sedimentation ponds in the open position, thereby permitting the ponds to operate as designed in a free-flowing state. Revised maintenance, monitoring, and reporting programs are also listed in the ECA.

Additional information pertaining to the inspection of the sedimentation ponds and associated stormwater management infrastructure completed in 2023 can be found in **Section 4.2.2** and **Section 4.2.3** of this report.

3.4.11 SITE ACCESS AND ROADS

The site entrance and roads were inspected by WSP during the annual site inspection conducted on July 11, 2023. Aside from recommendations for re-grading the road surfaces in various areas of the perimeter access roads and in an area near the flare compound, no significant issues were identified by WSP.

3.5 LEACHATE QUANTITIES

Condition 14.3 v of the ECA requires a summary of the quantity of any leachate or pre-treated leachate removed from the north and south pumping stations at the site during each operating month.

Leachate haulage from the site to the Town of Greater Napanee sewage system began in 1996. Leachate was regularly hauled from the landfill by Sutcliffe Sanitation Services Ltd. and discharged directly to the sewage system. Close communication between the Town, WM and the leachate hauler was maintained to determine if leachate may be accepted for treatment. Before picking up a load of leachate, the hauler confirms with the Town that leachate can be hauled on that particular day

During the winter of 2003/2004, WM constructed a leachate/septage dumping facility within the Town of Greater Napanee. The dumping facility is located at Enviro Park Lane and West Street within the Town of Greater Napanee on municipally owned property. The dumping facility was commissioned in April 2004, after which time all leachate was deposited at the dumping station. Station users are recorded by PIN numbers that uniquely identify each station user and log the quantity of material discharged to the dumping facility. Users are then billed on a user

pay basis by the Napanee Utilities. Ownership, operation and maintenance of the facility are the responsibility of the Greater Napanee Utilities. WM has a usage contract, which allows WM to use the facility for a specified period of time as long as Napanee Utilities does not have a restriction on dumping due to treatment conditions at the sewage treatment plant. The dumping facility contains dumped loads and slowly discharges wastewater into the Napanee sewage system. Napanee Utilities has a C of A for this site.

It is a requirement of the landfill site's ECA that alternative leachate treatment options are available should the facility in the Town of Greater Napanee be unable to treat leachate. Approval was given to discharge leachate at the City of Kingston's Ravensview Sewage Treatment Plant in 2019 on an on-going, as needed basis. Leachate was hauled from the Richmond Landfill to Kingston for treatment for most of 2022, but this facility ceased to accept loads in late 2022. WM has confirmed that the septage receiving facility in Cobourg, ON will serve as the site's contingency leachate disposal facility, and will accept leachate on an on-call basis. The approval obtained by WM to utilize the Cobourg facility for contingency leachate disposal in spring 2022 is presented in this report under **Appendix B**.

Leachate continued to be collected at the lowest portions on Phases 2 and 4 throughout 2023 and was conveyed via the leachate storage system infrastructure to the onsite leachate storage tank, as outlined in **Section 3.4.6** and **Section 3.4.7** of this report. Leachate was removed from the onsite leachate storage tank via the truck loading station on the east side of the former soil recycling pad; and was hauled for treatment off-site. For 2023, GFL Environmental, Inc., formerly Smith's Septic Tank Service, was the designated leachate hauler for WM.

Previously, if leachate could not be hauled from the site due to conditions at the Town of Greater Napanee or City of Cobourg treatment facilities, leachate or leachate-impacted water was temporarily stored in the leachate-holding lagoon located to the north of the site. Once leachate treatment resumed at the receiving plant, this liquid would then be hauled to the plant for treatment and disposal. Storage of leachate in the holding lagoon was a temporary, last resort measure, and was outlined as such in the leachate management plan submitted to the MECP. In 2010, this pond was dewatered, and allowed to drain freely in future rainfall events. However, if the pond was required for temporary storage of leachate, the pond was capable of being used for this contingency.

Since 2010, the holding lagoon was used for temporary storage of leachate during periods of high flows resulting from wet weather events. On January 23, 2020, use of the leachate holding lagoon for the temporary storage of leachate was revoked by the MECP under a POO. The POO has since been resolved.

Between June and October 2023, leachate from the holding lagoon was transferred to PS2 (the north chamber). Leachate from PS2 was conveyed via underground forcemain to PS3, where it was then transferred into the onsite leachate storage tank. Leachate was removed from the tank via PS3 at the truck loading station on the east side of the former soil recycling pad, where it was then transferred into trucks for disposal offsite at an approved treatment facility. Minimal leachate remains present in the lagoon as of December 2023; and it is anticipated that the lagoon will be emptied in 2024.

Table 3.1 on the following page lists the leachate quantities trucked from the site to approved receiving sewage treatment plants in 2023:

Table 3-1 2023 Monthly Leachate Quantities Hauled for Treatment*

Month	Napanee (m^3)*	Cobourg (m^3)*	Quantity (m^3)**
January	1,952.07	924.00	2,876.07
February	1,547.42	1,056.00	2,603.42
March	2,188.49	1,475.83	3,664.32
April	1,640.19	1,768.00	3,408.19
May	1,431.39	1,072.06	2,503.45
June	2,109.39	568.00	2,677.39
July	2,222.83	588.00	2,810.83
August	1,578.17	588.00	2,086.17
September	1,810.61	352.00	2,162.61
October	540.92	840.00	1,380.92
November	253.38	0.00	253.38
December	685.62	220.00	905.62
Total	**17,960.48**	**9,451.89**	**27,332.37**

*individual values by receiver site provided by WM.
**source: email from Megan Williamson, BluMetric Inc. (containing information as provided by WM) to Bev Minshall, WSP dated January 2, 2024.

The average rate of removal for treatment was initially calculated to be 74.88 m^3/day.

No leachate was transferred from PS2 to the leachate holding lagoon in 2023.

Between June and October 2023, WM reported leachate was transferred from the lagoon to PS2, which was subsequently conveyed to the leachate storage tank, then to the truck loading station for removal offsite. In Section 3.1.2 of the report entitled "*Fall 2023 Semi-Annual Monitoring Report – Waste Management of Canada Richmond Landfill, Town of Greater Napanee, ON*" prepared by BluMetric Environmental Inc., dated January 3, 2024, "a volume of 9,437 m^3 of leachate was pumped from the Lagoon to the North Chamber." As a result, this volume of leachate was subtracted from the overall volume of leachate hauled for treatment for 2023. The result of this calculation is an overall volume of leachate generated by the landfill mound for 2023, as follows:

27,332.37 m^3 leachate hauled for treatment – 9,437 m^3 leachate previously generated = **17,895.37 m^3**

The average rate of removal of leachate generated by the landfill mound in 2023 was 49.03 m^3/day. It is recommended that leachate removal continue.

3.6 TOXICITY TESTING – STORMWATER MANAGEMENT PONDS

Condition 14.3 vi of the ECA requires a discussion of the results of the toxicity testing of the landfill stormwater management ponds which includes potential impacts to the groundwater by the ponds.

BluMetric has provided a memorandum regarding the results of toxicity testing of the stormwater ponds, and potential impacts to the groundwater by the ponds. The memorandum can be found in **Appendix C** of this report.

3.7 SUMMARY OF COMPLAINTS

Condition 14.3 vii of the ECA requires a summary of any complaints received and the responses made.

In 2023, there were no complaints received by WM regarding odours.

Over the years, a few immediate neighbours have occasionally contacted WM regarding odours from the landfill site. The normal decomposition of waste generates odours and is contained in landfill gas. WM implemented the operation of a landfill gas recovery system in 2001 to control the escape of landfill gas. Gas wells were drilled in the waste mound, and collection piping withdraws landfill gas from the wells and all leachate manholes to reduce the odour emitted from the landfill site. Landfill gas was flared off via an enclosed flare to the south of the landfill footprint. The landfill flare was commissioned in April 2001 and successfully reduced landfill gas odours. The flaring system ceased operation in August 2021.

In June and July 2009, the consulting group RWDI, accompanied by a representative from the MECP, conducted a three (3) week long odour survey, and found no negative impacts on the local air quality. In addition, the MECP used their TAGA (Trace Atmospheric Gas Analyzer) unit to evaluate the local air quality and concluded that the air quality was similar to any rural air quality in Ontario.

BluMetric staff also tour the surrounding area and concession roads regularly to monitor for odour, litter and illegally dumped waste. Observations are recorded and corrective measures taken as required. A weather station is located north of the office area, which monitors wind speed, wind direction, temperature, rainfall, solar radiation and relative humidity. Recorded local weather patterns help in addressing odour complaints.

If an odour complaint is received at the landfill site, BluMetric staff are dispatched to investigate the source of the odour and record the conditions that may have influenced the odour. WM can complete this response plan if complaints are received directly at the site. If complaints are delayed or not directed towards the landfill, the potential odour source cannot be investigated, nor can corrective action be taken if the odour was potentially landfill related. A sign was posted near the front entrance, directing residents with questions, concerns and complaints to contact the Landfill Manager or WM Help Line. Phone numbers for both contacts were provided on the sign. The sign has exhibited wear over the years, and a recommendation to replace the signage to clearly identify individuals and phone numbers was provided in WSP's annual site inspection report.

In June 2016, WM submitted an application to the MECP requesting a reduction in the frequency of surface emission surveys performed at the site, based on the results of the 2013 and 2014 surface emission surveys. Included in the application was a revised Odour Monitoring Plan, updated to reflect current site conditions and eliminated the use of surface emission surveys. WM requested that surface emission surveys be performed only in the event of confirming final cover system repairs to areas of the landfill mound, if the landfill mound was confirmed to be a source of odour at an off-site receptor identified in the Odour Monitoring Plan. On July 14, 2017, the MECP approved WM's request, and issued revised Conditions 8.5.3(a), (b) and (c) in former ECA No. A371203. Conditions 8.7 (a) and (b) in the March 19, 2021 version of ECA No. A371203 govern current odour monitoring, abatement activities, and remedial action protocols.

In 2023, no surface emission surveys were completed.

3.8 SUMMARY OF SEEPS/UPSET CONDITIONS/ EMERGENCY SITUATIONS, AND REMEDIAL ACTIONS

Condition 14.3 viii of the ECA requires a discussion of any seeps, upset conditions or emergency situations and/or corrective/remedial actions taken.

In spring 2023, the transfer of leachate from the Richmond Landfill to the sewage treatment plant in the Town of Greater Napanee was stopped, due to the temporary shutdown of the plant following elevated rainfall events. The onsite leachate storage tank reached the maximum high level elevation as listed in a Condition of the ECA. WM made several attempts to secure additional disposal options, without success. In late March 2023, WM rented two

(2) emergency holding tanks ("frac tanks"), each with a capacity of 80 m^3, and were positioned adjacent to the truck loading area to the west of PS3. One (1) tank was put into operation at approximately 5:00 pm on Friday, March 24, 2023. Leachate from PS3 was pumped into the frac tank to provide additional storage capacity in the leachate storage tank. On Monday, March 27, 2023 at approximately 8:30 am, BluMetric field personnel discovered a small drip leak on the underside of the frac tank. BluMetric personnel implemented initial corrective actions by having the leachate hauler remove all leachate from the leaking frac tank into the second frac tank positioned nearby. A volume of 8.9 m^3 of leachate was estimated to have leaked from the temporary frac tank. An assessment was completed and it was determined the release was limited to the asphalt surface and granular area immediately adjacent to the temporary frac tanks. The Spills Action Centre was notified of the release on Monday, March 27, 2023, as was the MECP Kingston District Office, and a MECP Environmental Officer visited the site on the same day to conduct an investigation. WM also notified interested parties and the public of the release in accordance with the public notification plan on the same day. Refer to **Appendix D** for the release notification summary prepared by BluMetric for additional information.

Remedial activities were undertaken between Monday, March 27 and Thursday, March 30, 2023, with removal of the excavated materials completed on Monday, May 8, 2023. Although there was no evidence that the released leachate entered the stormwater management system, sampling of Stormwater Pond 3 was completed on Wednesday, March 29, 2023 as a precautionary measure. Samples were also obtained from adjacent groundwater monitoring wells on Friday, March 31, 2023. Analysis of the samples revealed there was no impact from the leachate release on the natural environment. A summary of the remedial activities prepared by BluMetric, dated June 14, 2023 is provided under **Appendix D** of this report. WM also provided interested parties and the public of these findings in accordance with the public notification plan.

Leachate remains present within the holding lagoon. This leachate was transferred to the holding lagoon from PS2 (the north chamber) prior to January 23, 2020. Following this date, no transfer of leachate from PS2 to the lagoon has occurred. Between June and October 2023, a total of approximately 9,437 m^3 of leachate was transferred from the lagoon to PS2, which was subsequently conveyed to the leachate storage tank via the leachate storage system conveyance network. This leachate was later removed from the leachate storage tank via the truck loading station and was hauled to the approved sewage treatment facilities for treatment. Refer to **Section 3.5** for additional information regarding leachate volumes. Removal of the remaining leachate within the lagoon is anticipated to occur in 2024.

No other seeps, upset conditions or emergency situations were reported at the site in 2023.

3.9 OPERATIONAL PROBLEMS

Condition 14.3 ix of the ECA requires a discussion of any operational problems encountered at the site, and corrective action taken.

A small leachate release occurred at the site in late March 2023, as discussed under **Section 3.8**. Remedial activities related to the release have been completed.

A communications issue in the leachate conveyance system was identified in 2023 and was resolved by WM. Refer to **Section 4.1.2** for additional information.

No other operational problems occurred at the site in 2023.

3.10 REFUSAL OF WASTE

Condition 14.3 x of the ECA requires a summary of any waste that was refused for disposal at the site, the reasons for refusal, and the carrier who brought the waste to the site.

In 2023, there were no incidents where waste was brought to the site and refused.

3.11 LEACHATE COLLECTION SYSTEM CLEANING AND INSPECTION

Condition 14.3 xi of the ECA, requires a summary of the leachate collection system cleaning and inspection activities.

In 2023, WM and/or BluMetric staff inspected the leachate pumps and system on a weekly basis. Aside from the communications issue in the leachate conveyance system that was identified under **Section 3.9** of this report, and discussed further under **Section 4.1.2**, no issues with the equipment or system was noted.

In September 2023, WM advised that cleaning of the leachate collection system was attempted, but due to elevated leachate levels in the system, the contractor could not complete flushing activities. The event has been rescheduled for summer 2024.

3.12 FINANCIAL ASSURANCE SUMMARY

Condition 14.3 xii of the ECA requires an update summary of the amount of financial assurance which has been provided to the Director.

On May 3, 2023, an Irrevocable Standby Letter of Credit No. S18572/188297, issued by the Bank of Nova Scotia for the amount of $11,311,887, was submitted by WM to the MECP Director.

On December 5, 2023, a revision was provided to update the LOC to "His Majesty the King in the Right of Ontario, as Represented by the Minister of Environment, Conservation and Parks (The Crown)'. No adjustment to the amount of financial assurance was made in this submittal.

The letter of credit will be adjusted by WM in 2024 to $10,874,529.

As per Condition 2.7 of ECA No. A371203, a revised financial assurance program will be submitted to the MECP Director for approval by March 31, 2024.

3.13 STATEMENT OF COMPLIANCE

Condition 14.3 xiii of the ECA requires a statement of compliance with all conditions of the ECA and other relevant Ministry groundwater and surface water requirements.

As a result of the site inspection completed in 2023; based on the readily available information provided by WM; and to the best of our knowledge, WSP certifies that WM has complied with the conditions outlined in the various Environmental Compliance Approvals and Certificates of Approval for the site, with respect to site operations. BluMetric has provided a memorandum regarding compliance with the environmental monitoring and reporting requirements of the ECA, which can be found in **Appendix E**.

Monitoring programs have identified elevated levels of some monitoring parameters at locations to the south of the landfill. Detailed explanation of sample results, and work completed prior to 2017, can be found in the spring and fall semi-annual monitoring reports prepared by BluMetric, and in previous annual reports completed by WSP.

In the spring of 2015, the ERT held a hearing on the appeal filed in 2012 by the CCCTE. The decision, with an accompanying order, was issued on December 24, 2015. The ERT ordered that additional field work be completed and a report prepared and provided to all Parties (as defined in the ECA). The report was completed by April 15, 2016.

After review of the April 2016 report, with review and comment from all Parties, the MECP determined that additional field work was required to further define the east and southwest boundaries of the proposed CAZ. That work began in the summer of 2016. The MECP ordered that the report based on this additional field work be

submitted by May 31, 2017. As per the ECA, the Parties were to convene a meeting to discuss the report's contents. After reviewing input from all Parties, the MECP was to determine if the CAZ has been adequately defined. If the MECP agreed the CAZ has been adequately defined, WM was to submit the CAZ application. If the MECP did not agree the CAZ was adequately defined, more field work would be ordered.

The report due May 31, 2017 was submitted by July 20, 2017. The report was delayed while additional field work was being completed. In November 2017, the MECP indicated that the plume had been adequately defined but requested some additional field work to further define the shallow aquifer within the defined plume. Subsequently, in February 2018, the MECP decided additional field work was required in the northwest area of the CAZ. A work plan was submitted to MECP for approval.

In 2018, the field work in the northwest area of the CAZ was completed and a report was submitted to the MECP. The MECP reviewed the report, and requested an additional well be installed.

In 2019, additional wells were installed in the northwest area of the CAZ. All wells were dry. Additional investigation was completed on the east side of the proposed CAZ, just south of Beechwood Road. This well was also dry. Also in late 2019, additional work was done to confirm the leachate lagoon was not leaking.

In 2020, work was completed in accordance with the POO issued by the MECP on January 23, 2020 pertaining to the leachate overflow and spill incident. The POO has since been resolved.

On August 11, 2021, the MECP hydrogeologist involved with review of the proposed CAZ issued an assessment that the delineation of the groundwater contamination had been sufficiently identified, and WM could proceed with the development of a revised EMP. This assessment was confirmed by the MECP Kingston District Manager on August 24, 2021. On November 23, 2021, WM submitted an application to amend ECA No. A371203. Among the items requested under this amendment application was the inclusion of the proposed CAZ in the ECA; addressing non-compliance with Condition 8.8 and Guideline B-7; and a proposed updated EMP. An addendum to the November 23, 2021 ECA application was submitted on January 7, 2022, requesting the inclusion of a proposed HCS into the ECA. A separate ECA application to amend ECA No. 1688-8HZNJG was submitted on January 7, 2022 to include the proposed HCS flow rates into the overall flow volumes for SWM Pond 3, and minor amendments to monitoring parameters listed in the ECA. In October 2022, the MECP provided comments to WM regarding both ECA applications. In early December 2022, representatives from the MECP, WM, and BluMetric met to discuss the MECP comments and potential responses from WM. On February 3, 2023, WM submitted responses to the MECP's comments. On July 6, 2023, representatives from the MECP met with WM and BluMetric at the MECP District Office in Kingston, ON to discuss the ECA applications. Much of the remaining details of the ECA amendment application regarding the CAZ and EMP revisions were agreed upon at the meeting. The HCS ECA amendment application was also discussed, but the MECP requested a revision to the original design that is currently in development. On October 6, 2023, an additional meeting was held between the MECP, WM , and BluMetric to discuss the MECP's further concerns with the original HCS design. Also discussed during this meeting was the contingency utilization of the leachate holding lagoon. The ECA amendment applications and approval for the contingency use of the leachate holding lagoon remain under discussion with the MECP, and WM looks to obtain approval for each of these items in 2024.

It is noted that during the spring semi-annual monitoring event undertaken by BluMetric in May 2023, elevated concentrations of 1,4-dioxane was detected in a groundwater monitoring well slightly above the 0.001 mg/L reading listed in a Condition of ECA No. A371203. As per the ECA condition, which requires that any readings above the value at any groundwater or domestic well where 1,4-dioxane has not been detected in the past or at any surface water monitoring location be reported to the MECP District Manager within 48 hours of the initial data screening, this notification was completed, as was notification of interested parties and the public as per the public notification plan. As this was the first time that 1,4-dioxane had ever been detected at the location, a second sample (split sample) collected at the same time as the initial sample was analyzed to confirm the initial result. Analytical results from the second sample returned a value below the limit of detection, which was consistent with historical results for the monitoring well and suggested that the initial result can be considered a false positive. The MECP District Manager was notified of the findings of the second sample, and WM also shared the findings with interested parties and the public following procedures outlined in the public notification plan,

3.14 CONFIRMATION OF SITE INSPECTION PROGRAM

Condition 14.3 xiv of the ECA requires confirmation that the site inspection program as required by this ECA has been complied with by the Owner.

WM has confirmed to WSP that the site inspection program that is required by the Environmental Compliance Approvals, the Certificates of Approval, and by the various reports that address the site operations and monitoring, have been complied with.

No inspections of the site were undertaken by the Kingston District MECP in 2023. It is noted an Environmental Officer from the MECP Kingston District Office visited the site on March 27, 2023 to investigate the leachate release as described under **Section 3.8** of this report.

3.15 OPERATIONS, EQUIPMENT, PROCEDURES CHANGES, AND RECOMMENDATIONS

Condition 14.3 xv of the ECA requires documentation of any changes in operations, equipment, or procedures employed at the site, and recommendations regarding any proposed changes in operations of the site.

As part of ECA No. 1688-8HZNJG, issued January 10, 2012, WM was required to submit a Stormwater Contingency and Remedial Action Plan to the MECP District Manager within six (6) months of the date of issuance for the ECA. On March 22, 2012, WM submitted this plan. On March 15, 2021, an Environmental Officer from the MECP Kingston District office advised WM that a desktop review of ECA No. 1688-8HZNJG had been completed in February 2021, and as part of the examination of the file, the Stormwater Contingency and Remedial Action Plan submitted in March 2012 was reviewed. The MECP that a commitment in the plan included the submittal of a formal maintenance schedule for the stormwater infrastructure five (5) years after site closure. No such schedule had ever been submitted by WM. A request for preparation of a schedule was submitted by the Environmental Officer to WM. On April 30, 2021, WM submitted an inspection and maintenance schedule to the Environmental Officer at the MECP Kingston District office for approval. To date, WM has not received comments from the MECP regarding this schedule. An inspection on the stormwater infrastructure was completed by WSP on July 11, 2023. Details regarding the inspection and recommended maintenance activities are provided in **Section 4.2.2**. Annual inspections on the stormwater infrastructure will continue and the findings of the inspections will be included in future reports.

As a condition of ECA No. A371203, a spill contingency plan was required to be submitted pertaining to the improvements made to the leachate collection system. The plan was developed and submitted to the MECP Kingston District Manager on June 23, 2021 for approval. The plan outlined contingency measures to be implemented in the event of a spill involving leachate at the site. As construction of the leachate storage tank and leachate storage system was in the early stages at the time the June 2021 plan was submitted, an update to the spill contingency plan was prepared to reflect as built infrastructure components. This updated plan was provided to the MECP Kingston District Manager on October 17, 2023. To date, WM has not received any comments from the MECP on either version of the spill contingency plan.

On March 14, 2023 and November 2, 2023, meetings between WM and the Public Liaison Committee took place. The intent of the Public Liaison Committee is to discuss matters pertaining to the existing closed landfill site including development, operation (current and proposed) and ongoing monitoring, closure and post-closure care related to the site, along with review and comment on any subsequent applications for approval. Invitations to participate in the meeting were sent to the MECP Kingston District Manager and Environmental Officer, local communities including the Mohawks of the Bay of Quinte, and the Concerned Citizens Committee of Tyendinaga and Environs, with representatives from each group participating. Meetings were held virtually. It is anticipated that additional meetings will be held in 2024.

3.16 PHYTOREMEDIATION SYSTEM

Condition 4.9 of the ECA lists the reporting requirements for the phytoremediation system at the Richmond Landfill, which includes the following:

(i) Results and an analysis of the results of the monitoring programs for the phytoremediation system;

(ii) Assessment of the results of the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system;

(iii) Assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes;

(iv) A report on operational problems identified during the operation of the phytoremediation system and a discussion of each problem and what was done to rectify each problem;

(v) Assessment of the need for operational changes for the phytoremediation system and a recommendation of the required changes; and

(vi) A Site plan which shows the location of the phytoremediation system and any changes made to the phytoremediation system.

The approval for the phytoremediation system was initially issued by the MECP on May 2, 2011 through Notice 8 to amend C of A No. A371203. As noted in previous annual monitoring reports, the system was installed in late May 2011 in the northwest corner of the landfill property. No monitoring results or assessment of the system's operation were available for 2011 as the trees required time to establish in their environment. In late September 2012, the entire plantation was plowed under due to poor growth and wet site conditions.

In April 2013, the ground within the entire phytoremediation area was disked, and low areas were drained to remove standing water. All planting areas were frost seeded with white clover and barley at this time. In May 2013, under the direction of Mr. Steve Shaw from Landscape Rehab Tree and Turf, approximately 6,700 dogwoods and willows were planted, and the area was sprayed with the chemical "Round Up" to retard weed growth. WM monitored the growth of the plantation throughout late spring, and by July 2013 reported a tree growth rate of 100 millimetres to 200 millimetres. Grass was mowed between the rows to promote continued growth. In October 2013, "Round Up" was again sprayed for weed control in the planted areas, and grass was mowed between tree rows. WM reported a live tree plantation of approximately 60%, with an average tree height between 250 millimetres to 350 millimetres.

In June 2014, under the direction of Mr. Steve Shaw of Landscape Rehab Tree and Turf, the herbicide Simazine was applied at a rate of seven (7) kilograms per hectare. A post emergent herbicide was also applied to areas where vegetation was already starting to re-establish. Gromoxone was used to burn down re-established grass and weeds and was applied at a rate of two (2) litres per hectare. A tree height of 50 centimetres to 100 centimetres was also reported.

In 2015, WM reported the plantation experienced good growth, with willows measuring approximately 1.5 metres to 2.4 metres in height, and the dogwoods measuring 0.9 metres to 1.2 metres in height. Approximately five (5) to 10 percent more shrubs that were not visible previously due to weeds also showed signs of growth.

For 2016, WM reported the plantation maintained vegetation, with the willows measuring 1.5 metres to 2.4 metres in height, and the dogwoods measuring between 0.9 metres to 1.2 metres in height. Additional shrubs that were not previously visible due to weeds exhibited signs of growth.

For 2017 through 2020, WM reported the plantation continued to develop and no operational issues were noted.

In spring 2021, Hydro One completed pruning of the phytoremediation system, which reduced the height of all vegetation under the maximum 3.66 metre (12 feet) requirement as per a Condition of ECA No. A371203.

To address Condition 4.9 of the ECA for 2023, the following is noted:

- For Conditions 4.9 (i, ii, and iii) of the ECA, please refer to **Appendix F** for the results of the 2023 monitoring program for the phytoremediation area, as provided by BluMetric;

- For Conditions 4.9 (iv and v) of the ECA, WM reports no work (pruning) was undertaken on the phytoremediation and that vegetation continued to re-establish well following the 2021 pruning work undertaken by Hydro One. During the July 2023 site inspection, WSP noted all vegetation had re-established in the phytoremediation area, although some locations contain vegetation which appear to exceed the maximum height of 3.65 metres (12) feet, as specified in a Condition in ECA No. A371203. Pruning of these locations was recommended. WM has stated an inspection of the phytoremediation system will be undertaken in spring 2024 and addressed accordingly. All plant life will continue to be monitored for any signs of impairment. No other operational recommendations nor changes to the system are presented at this time.
- Please refer to the site plan located in **Appendix G** of this report, which shows the location of the phytoremediation system area as required by Condition 4.9 (vi) of the ECA.

4 REPORTING REQUIREMENTS – ENVIRONMENTAL COMPLIANCE APPROVAL NO. 1688-8HZNJG

On January 10, 2012, the MECP issued Environmental Compliance Approval No. 1688-8HZNJG, which revoked and replaced the previous C of A. The ECA removed the requirement to operate the ponds in a closed manner, thereby allowing the ponds to operate as designed, subject to quarterly toxicity testing to confirm no adverse effects to species listed in the ECA.

Since the ECA is the most recent version of the approval regarding the operation and management of the stormwater and leachate management systems at the Richmond Landfill, this section of the annual monitoring report is submitted in accordance with Conditions 10 (4) (a) (b), (c), (d), (e), (f), (g), and (h) of this document. An overview of the leachate management system present at the Richmond Landfill is provided below.

4.1 LEACHATE MANAGEMENT

Refer to **Section 3.5** of this report for a discussion regarding leachate management at the Richmond Landfill.

4.1.1 LEACHATE QUANTITIES

Condition 10(4) (b) of the ECA requires a summary of the monthly quantity of leachate disposed offsite and corresponding leachate average quality.

Refer to **Table 3.1** located in **Section 3.5** of this report for the monthly leachate quantities trucked from the site to approved receiving sewage treatment facilities in 2023.

Please refer to **Appendix C** for information regarding monthly average leachate quality data, provided by BluMetric.

4.1.2 OPERATIONAL PROBLEMS AND CORRECTIVE ACTIONS

Condition 10(4) (c) of the ECA requires a description of any operating problems encountered and corrective actions taken.

As noted under **Section 1.1**, an application to amend ECA No. 1688-8HZNJG was submitted by WM to the MECP on January 7, 2022. The application resulted from a conceptual design of a HCS designed to control landfill leachate impacted groundwater along the southeast side of the landfill. While the proposed HCS was submitted for approval under ECA No. A371203, the application to amend ECA No. 1688-8HZNJG is to incorporate the flow rate from the HCS into the overall flows for SWM Pond 3. A modification to amend monitoring and reporting requirements listed in Table 2 under Condition 8, to include sample parameter 1,4-dioxane was also proposed in the application. In 2022, the MECP provided comments to WM on both ECA applications. A meeting was held with representatives of the MECP, WM, and BluMetric in December 2022 to discuss the MECP comments along with WM's potential responses. On February 3, 2023, WM submitted responses to the MECP comments. Additional discussions took place in 2023 between WM, the MECP and BluMetric regarding the ECA amendment applications, and a discussion regarding the restoration of the approval for the leachate holding lagoon to be utilized as a contingency storage measure, as previously discussed under **Section 3.13**.

In late March 2023, a leachate release occurred. Refer to **Section 3.8** for additional information. All remedial activities were completed by early May 2023.

The leachate collection system experienced communication issues in 2023 between PS2 and PS3. To correct this item, replacement of four (4) radio power supplies was completed, and installation of a replacement antennae on the northeast radio was also completed. Communication between PS2 and PS3 was restored and there have been no further issues.

4.1.3 MAINTENANCE PERFORMED ON STRUCTURES

Condition 10(4) (d) of the ECA requires a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

As noted under **Section 3.11**, cleaning of the leachate collection system was attempted in September 2023 but could not be completed due to elevated leachate levels. WM advised that cleaning has been rescheduled to be completed in the summer of 2024.

In October 2023, maintenance work was undertaken on the leachate holding lagoon, as described under Section 3.1.5 of this report.

Also in 2023, replacement of radio power supplies was completed to resolve the communication issues experienced between PS2 and PS3. A new antennae was also installed on the northeast radio.

4.1.4 CALIBRATION AND MAINTENANCE OF LEACHATE MONITORING EQUIPMENT

Condition 10(4) (e) of the ECA requires a summary of the calibration and maintenance carried out on all leachate monitoring equipment.

In 2023, no calibration procedures were performed on any existing structures or equipment.

4.1.5 SUMMARY OF COMPLAINTS RECEIVED

Condition 10(4) (f) of the ECA requires a summary of any complaints received during the reporting period, and any steps taken to address the complaints.

In 2023, no complaints were received.

4.1.6 SUMMARY OF BY-PASS, SPILL OR ABNORMAL DISCHARGE EVENTS

Condition 10(4) (g) of the ECA requires a summary of all By-pass, spill, or abnormal discharge events.

Refer to **Section 3.8** for a discussion regarding the leachate release which occurred in late March 2023.

There were no other by-pass, spill or abnormal discharge events.

4.2 SURFACE WATER MANAGEMENT

Surface water quality management is also operated under ECA No. 1688-8HZNJG, which revoked and replaced the previous C of A on January 10, 2012. The new approval permits the ponds to be free flowing, subject to toxicity testing to verify no adverse effects are caused to species listed in the ECA. This section is intended to satisfy the requirements outlined in Condition 10(4) (a), (c), (d), (f) and (g) of the ECA.

4.2.1 SUMMARY OF STORMWATER MONITORING DATA

Condition 10(4) (a) of the ECA requires a summary and interpretation of all stormwater monitoring data and a comparison to the Provincial Water Quality Objectives (PWQO), including an overview of the success and adequacy of the Works.

BluMetric has prepared a memorandum to satisfy this condition of the ECA. The reader is directed to **Appendix C** of this report for further information.

4.2.2 OPERATING PROBLEMS AND CORRECTIVE ACTIONS

Condition 10(4) (c) of the ECA requires a description of any operating problems encountered and corrective actions taken.

As identified in Section 4.2.2 of the 2021 annual monitoring report, on April 30, 2021, WM submitted a document to the MECP Environmental Officer entitled "Richmond Sanitary Landfill Site, Stormwater Infrastructure and Maintenance Plan" to satisfy the MECP's request for such a plan. This document outlined the general principles of the existing stormwater infrastructure and included inspection schedules for WM personnel; associated maintenance or repair requirements; and documentation requirements. The plan also outlined the annual inspection on the stormwater infrastructure to be completed by WSP. To date, WM has not received any comments from the MECP pertaining to the content of this plan.

On July 11, 2023, WSP completed the annual site inspection at the Richmond Landfill, which included a detailed inspection of the stormwater management infrastructure in accordance with the inspection schedule outlined in the aforementioned plan submitted to the MECP. The inspection report issued by WSP identified action items including removal of vegetation from the interior and exterior pond banks, particularly at SWM Ponds 1 and 2, re-grading of the paths around the ponds to improve vehicle accessibility, and maintenance improvements on the drainage structures in the pond. Refer to **Appendix H** for a copy of the overall site inspection report. Action items and recommendations pertaining to the stormwater infrastructure are identified on pages 14 through 16 of the report.

Aside from this matter, there were no operating problems encountered for the stormwater management system.

4.2.3 SUMMARY OF MAINTENANCE ACTIVITIES

Condition 10 (4) (d) of the ECA requires a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

The two (2) northerly sedimentation ponds and the south sedimentation pond operated in 2023 without any maintenance required on the ponds. The ponds are regularly inspected to ensure their operation meets the ECA.

As noted under **Section 4.2.2**, a detailed inspection of the stormwater ponds was performed in July 2023 by WSP. Recommended maintenance activities were outlined in the overall site inspection report issued on July 24, 2023 included in **Appendix H** of this report. No maintenance activities were undertaken in 2023. It is anticipated that maintenance activities on the stormwater management infrastructure will be completed in 2024.

4.2.4 SUMMARY OF COMPLAINTS RECEIVED

Condition 10(4) (f) of the ECA requires a summary of any complaints received during the reporting period, and any steps taken to address the complaints.

In 2023, there were no complaints received regarding the ponds.

4.2.5 SUMMARY OF BY-PASS, SPILL OR ABNORMAL DISCHARGE EVENTS

Condition 10(4) (g) of the ECA requires a summary of all By-pass, spill, or abnormal discharge events.

In 2023, there were no stormwater events that were a by-pass, spill, or abnormal discharge event.

5 GENERAL

In 2023, WM and BluMetric completed ongoing maintenance and operation of the landfill site. Active litter control, leachate treatment and active monitoring of the landfill site resulted in no operational impacts on the surrounding area. The landfill gas collection and flaring system ceased operation in August 2021 due to low landfill gas generation rates. Since the flare was shut down, there have been no issues with odours or gas migration.

WM has been very active in monitoring all aspects of the site, both on and off site, ensuring that no impacts were caused on the surrounding areas. The entire landfill mound has had final cover in place since September 2011 and is regularly inspected. No obvious leachate seeps were observed during WSP's annual inspection. WM indicated re-seeding of areas where leachate seep repairs had been undertaken between 2017 and 2021 was completed in June 2022. These areas were assessed in 2023 and vegetation was found to be establishing in several of the reseeded areas.

No modifications to existing approvals occurred in 2023. In November 2021, an application to amend ECA No. A371203 was submitted, following the August 2021 notification from the MECP that the delineation of leachate impacted groundwater on site and off site has been identified to the satisfaction of the MECP. The November 2021 ECA application consisted of a request to include a CAZ into the ECA; addressed non-compliance with Condition 8.8 and Guideline B-7; and a proposed updated EMP. An amendment to the ECA application was submitted on January 7, 2022, requesting the inclusion of a proposed HCS into the ECA. A separate ECA application to amend ECA No. 1688-8HZNJG was also submitted on January 7, 2022 to incorporate flow rates from the HCS into the overall flow volumes from SWM Pond 3, along with a minor amendment to a sampling parameter. In October 2022, the MECP provided comments to WM regarding both ECA amendment applications. In early December 2022, representatives from the MECP, WM, and BluMetric met to discuss the MECP comments and potential responses from WM. On February 3, 2023, WM submitted responses to the MECP's comments. Discussions between the MECP, WM, and BluMetric occurred in 2023, and the revisions to the ECA amendment application pertaining to the CAZ and EMP were agreed upon. Regarding the HCS ECA amendment application, the MECP requested a revision to the HCS original design, and comments were also provided by the Public Liaison Committee. A second discussion regarding the HCS was held in October 2023 and additional concerns with the design were raised by the MECP. Also discussed during the meeting was the contingency use of the leachate holding lagoon. The ECA amendment applications and approval for contingency use of the leachate holding lagoon remain under discussion with the MECP and WM will be seeking approval for each of these items in 2024. If updated ECAs are issued in 2024, changes may result to the information presented within future versions of this report.

The leachate collection system was in operation in 2023. Leachate is collected from low areas in Stage 2 and Stage 4, which is transferred to a leachate storage tank located to the southeast of the former soil recycling pad, through a conveyance network of underground HDPE pipes which enter PS3 and then into the tank. Leachate is removed from the tank via PS3 and the truck loading station located on the east side of the former soil recycling pad. Aside from some communications issues between PS2 and PS3, which were resolved by replacing the radio power supplies and installing a new antennae on the northeast radio, the system worked well in 2023 and no improvements are recommended at this time.

Leachate extraction and treatment continues at the landfill site. Approximately 27,332.37 m^3 of leachate was removed and disposed offsite during the past year, or approximately 74.88 m^3/day. There was approximately 9,437 m^3 of leachate transferred from the leachate holding lagoon back to PS2 for subsequent removal from the site. Therefore, the overall amount of leachate produced by the landfill mound in 2023 was 17,895.37 m^3, or approximately 49.02 m^3/day. It is recommended that leachate removal for treatment offsite continue. The Cobourg sewage treatment plant will continue to serve as the contingency leachate disposal location, and will accept leachate loads on an on-call basis. Transfer of the remaining leachate within the lagoon back to the landfill mound is expected to be completed in 2024.

In spring 2023, the transfer of leachate from the site to the receiving sewage treatment plant in the Town of Greater Napanee was stopped, due to the temporary shutdown of the plant following elevated rainfall events. As the onsite leachate storage tank neared the maximum high level elevation, WM made several attempts to secure additional disposal options, without success. In late March 2023, WM rented two (2) frac tanks, which were positioned

adjacent to the truck loading area to the west of PS3. One (1) tank was put into operation by pumping leachate from PS3 into the frac tank to provide additional storage capacity in the leachate storage tank. On Monday, March 27, 2023 at approximately 8:30 am, a small drip leak on the underside of the frac tank was discovered, which resulted in the release of approximately 8.9 m^3 of leachate to the asphalt surface and granular area immediately adjacent to the tanks. BluMetric personnel implemented initial corrective actions by having the leachate hauler remove all leachate from the leaking frac tank into the second frac tank positioned nearby. The Spills Action Centre was notified of the release on Monday, March 27, 2023, as was the MECP Kingston District Office, and a MECP Environmental Officer visited the site on the same day to conduct an investigation. WM also notified interested parties and the public of the release in accordance with the public notification plan on the same day. Remedial activities were completed in late March 2023, with removal of the contaminated soils from the site completed in early May 2023. Analytical results of stormwater from Stormwater Pond 3 immediately following the release confirmed that leachate did not enter the stormwater management system.

Also in 2023, meetings between WM and the Public Liaison Committee were held in March and November to discuss ongoing site operations, improvements, and monitoring activities. Meetings are expected to continue in 2024.

Neighbours with concerns are always invited to contact the site with their concerns, which are addressed by the site manager.

As a result of the site inspection completed in 2023; based on the readily available information provided by WM; and to the best of our knowledge, we conclude the landfill is managed and operated in an environmentally sound and orderly manner in the post-closure period.

APPENDIX

A ENVIRONMENTAL COMPLIANCE APPROVALS AND CERTIFICATES OF APPROVAL

APPENDIX

A-1

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL (WASTE DISPOSAL SITE) NO. A371293, DATED MARCH 19, 2021 (OVERALL REVISION TO SEVERAL CONDITIONS TO BETTER REFLECT A CLOSED LANDFILL SITE; APPROVAL OF MARCH 2020 FINANCIAL ASSURANCE RE-EVALUATION; APPROVAL OF LEACHATE FORCEMAIN AND LEACHATE STORAGE FACILITY MODIFICATIONS; ADDITIONS OF ITEMS 68 THROUGH 73 TO SCHEDULE "A", AND REVISIONS/ADDITIONS TO REASONS FOR CONDITIONS)

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A371203
Issue Date: March 19, 2021

Waste Management of Canada Corporation
Rural Route, No. 6
Greater Napanee, Ontario
K7R 3L1

Site Location: Richmond Landfill Site
1271 Beechwood Rd Lots 1, 2 and 3, Concession 4, Richmond
Greater Napanee Town, County of Lennox and Addington
K7R 3L1

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

the use, operation, and closure of a 16.2 hectare waste disposal landfill site including a landfill gas collection system and landfill gas flare within a total site area of 138 hectares

For the purpose of this environmental compliance approval, the following definitions apply:

"***Contaminating Lifespan"or "CLS"*** refers to the period of time, after closure until the *Site* finally produces contaminants at concentrations below levels which have unacceptable health or environmental effects;

"*Director*" means any *Ministry* employee appointed in writing by the Minister pursuant to section 5 of the *EPA* as a *Director* for the purposes of Part V of the EPA;

"*District Manager*" refers to the *District Manager* in the Ministry of the Environment's Kingston District Office;

"*District Office*" refers to the Ministry of the Environment Kingston *District Office* ;

"EPB" refers to the Environmental Permissions Branch of the Ministry of the Environment, Conservation and Parks;

"***EMP*** " refers to the Environmental Monitoring Plan;

"***Environmental Compliance Approval" or "ECA"*** means this entire provisional Environmental Compliance Approval document, issued in accordance with Section 20.2 of the *EPA* , and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";

"*EPA* " means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended from time to time;

"*Major Works* " are those works that have an engineering component.

"*MECP* " or "***Ministry*** " refers to the Ontario Ministry of the Environment, Conservation and Parks;

"*Operator* " has the same meaning as "Operator" as defined in s.25 of the *EPA* ;

"*Owner* " means Waste Management of Canada Corporation and its successors and assigns;

"O. Reg. 101/94" means Ontario Regulation 101/94 as amended from time to time;

"***PA*** " means the *Pesticides Act* , R.S.O. 1990, c. P-11, as amended from time to time;

"Parties" mean Concerned Citizens Committee of Tyendinaga and Environs**;** Director, Ministry of the Environment, Conservation and Parks**;** Waste Management of Canada Corporation**;** Mohawks of the Bay of Quinte**:** and Tom Touzel on behalf of Napanee Green Lights;

***"Provincial Officer* "** means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the *OWRA* or Section 5 of the *EPA* or Section 17 of *PA;*

"Regional Director" refers to the Director of the Ministry of the Environment's Eastern Regional Office;

"*Regulation 232* " or "*Reg. 232" or "O. Reg. 232/98"* means Ontario Regulation 232/98 (New Landfill Standards) made under the *EPA* , as amended from time to time;

"*Regulation 347* " or "*Reg. 347* " means Regulation 347, R.R.O. 1990, made under the *EPA* , as amended from time to time; and

"***Site*** " means the Richmond Landfill Site, located at 1271 Beechwood Road, Lots 1, 2 and 3, Concession 4, Richmond, Greater Napanee Town, County of Lennox and Addington .

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1.0 GENERAL

Compliance

1.1 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of the ECA and the conditions herein and shall take all reasonable measures to ensure the person complies with the same.

1.2 Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this ECA.

In Accordance

1.3 Except as otherwise provided for in this ECA, the Site shall be designed, developed, constructed, operated and maintained in accordance with the supporting documentation listed in Schedule "A".

Other Legal Obligations

1.4 The issuance of, and compliance with, this ECA does not:

a. relieve any person of any obligation to comply with any provision of the EPA or any other applicable statute, regulation or other legal requirement; or
b. limit in any way the authority of the Ministry to require certain steps be taken or to request that any further information related to compliance with this ECA be provided to the Ministry.

unless a provision of this ECA specifically refers to the other requirement or authority and clearly states that the other requirement or authority is to be replaced or limited by this ECA.

Adverse Effect

1.5 The Owner or Operator remain responsible for any contravention of any other condition of this ECA or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect or impairment of air and/or water quality.

Furnish Information

1.6 Any information requested by the Director or a Provincial Officer concerning the Site and its operation under this ECA, including but not limited to any records required to be kept by this ECA shall be provided in a timely manner.

1.7 The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this ECA or under any statute, regulation or subordinate legal instrument, in relation to the information, shall not be construed as:

i. an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any condition of this ECA or any statute, regulation or other subordinate legal requirement; or
ii. acceptance by the Ministry of the information's completeness or accuracy.

1.8 Any information related to this ECA and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, RSO 1990, CF-31.

Interpretation

1.9 This ECA revokes and replaces the previous ECA and all subsequent amendments.

1.10 Where there is a conflict between a provision of any document, including the application, referred to in this ECA, and the conditions of this ECA, the conditions in this ECA shall take precedence.

1.11 Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the Ministry approved the amendment in writing .

1.12 Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

1.13 The conditions of this ECA are severable. If any condition of this ECA, or the application of any condition of this ECA to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this ECA shall not be affected thereby.

Certificate of Requirement

1.14 Pursuant to Section 197 of the EPA, no person having an interest in the Site shall deal with the Site in any way without first giving a copy of this ECA to each person acquiring an interest in the Site as a result of the dealing.

1.15 The Certificate of Requirement shall be registered in the appropriate land registry office on title to the Site and a duplicate registered copy shall be submitted to the Director within ten (10) calendar days of receiving the Certificate of Requirement signed by the Director.

No Transfer or Encumbrance

1.16 No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and is satisfied with the arrangements made to ensure that all conditions of this ECA will be carried out and that sufficient financial assurance is

deposited with the Ministry to ensure that these conditions will be carried out.

Change of Owner

1.17 The Owner shall notify the Director, in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any changes in the following information:

i. the ownership of the Site;
ii. the Operator of the Site;
iii. the address of the Owner or Operator;
iv. the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R. S. O. 1990, c. B.17, shall be included in the notification;
v. the name of the corporation where the Owner or Operator is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the Corporations Information Act, R. S. O. 1990, c. C.39, shall be included in the notification.

1.18 In the event of any change in the ownership of the Site, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this ECA, and a copy of such notice shall be forward to the Director and District Manager.

Inspections

1.19 No person shall hinder or obstruct a Provincial Officer from carrying out any and all inspections authorized by the EPA, or the PA, of any place to which this ECA relates, and without limiting the foregoing:

i. to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this ECA are kept;
ii. to have access to, inspect, and copy any records required to be kept by the conditions of this ECA;
iii. to inspect the Site related equipment and appurtenances;
iv. to inspect the practices, procedures, or operations required by the conditions of this ECA; and
v. to sample and monitor for the purposes of assessing compliance with the terms and conditions of this ECA or the EPA, or the PA.

2.0 FINANCIAL ASSURANCE

Overview

2.1 Financial assurance shall be provided as required by the Director, in an amount that is sufficient to pay for compliance with and performance of any action specified in this ECA, including

closure, monitoring and maintenance of the Site, maintenance of all required contaminant control systems including leachate management systems, contaminant monitoring for the contaminating lifespan of the Site and contingency plans for the Site in accordance with this ECA.

2.2 Financial assurance may be provided in one or more of the following forms: cash, irrevocable letter of credit, surety bond, or some other form, all satisfactory to the Director.

Inflation Rate

2.3 The Owner shall ensure the methodology used to determine the inflation rate for the financial assurance re-evaulation calculation is the current approach deemed acceptable by the Ministry.

Interest (Discount) Rate

2.4 The Owner shall ensure the methodology used to determine the interest rate for the financial assurance re-evaulation calculation is the current approach deemed acceptable by the Ministry.

Proposed Payment Schedule

2.5 Within twenty (20) days of issuance of this ECA, the Owner shall submit an updated financial assurance, as defined in Section 131 of the EPA, for the amount of **$12,129,094.00** to the Director. This Financial Assurance shall be in a form acceptable to the Director and shall provide sufficient funds for the closure, contingency, post-closure operation, monitoring and maintenance of the Site.

2.6 The total amount of financial assurance shall be updated as follows for the following years:

i. March 31, 2022 - **$11,720,510.00;**
ii. March 31, 2023 - **$11,311,887.00;** and
iii. March 31, 2024 - **$10,874,529.00**.

Updated Review Report

2.7 A revised or new financial assurance program shall be submitted to the Director by no later than **March 31, 2024** and then at an interval no greater than a period of every three (3) years thereafter. The report shall include:

a. updates of the discount, interest and inflation rates associated with the requirements for financial assurance in this ECA including justifications and sources of the proposed rates; and
b. a report prepared by a qualified Professional Engineer which updates the cost estimates on which the amounts associated with the requirements for financial assurance in this ECA are based.

2.8 If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least sixty (60) days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.

3.0 GENERAL OPERATIONS

Proper Operation

3.1 The Site shall be properly operated and maintained at all times. All waste shall be managed and disposed of in accordance with the EPA and Regulation 347 and the requirements of this ECA. At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

Operations Manual

3.2 The Owner shall ensure the operations and procedures manual for the Site includes discussions on the following items.:

a. Health and safety;
b. Operation and maintenance of the Site;
c. Nuisance management;
d. Leachate management;
e. Landfill gas management;
f. Surface water/Stormwater management;
g. Inspections and monitoring;
h. Contingency plans and emergency procedures;
i. Complaints; and,
j. Reporting and record keeping.

3.3 The operations and procedures manual shall be:

a. retained at the Site;
b. reviewed every five (5) years and updated by the Owner as required; and
c. be available for inspection by Ministry staff.

Site Closure

3.4 The Owner shall ensure that no waste is received for disposal at the Site after **June 30, 2011** and the site is capped with final cover material by **September 30, 2011**.

Capacity

3.5 The ECA permits disposal of waste at the Site to fill an air space of **2,842,700 cubic metres**

(including waste, daily and interim cover material).

Site Security

3.6 During non-operating hours, the Site entrance and exit gates shall be locked and the Site shall be secured against access by unauthorized persons.

On-Site Roads

3.7 Site roads shall be maintained in a manner approved by Item 19 of Schedule "A".

Vermin, Scavenging, Dust, Litter, Odour, Noise, etc.

3.8 The Site shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

3.9 No scavenging is to occur at the Site.

Dust

3.10 The Owner shall control fugitive dust emissions from Site sources including Site roads. If necessary, major sources of dust shall be treated with water and/or dust suppression materials to minimize the overall dust emissions from the Site.

Noise

3.11 The Owner shall comply with noise criteria in MECP Guideline entitled “Noise Guidelines for Landfill Sites."

4.0 SITE OPERATIONS

Cover Material

4.1 i. Final Cover - Final cover placed after the effective date of this ECA must meet the following specifications. In areas where landfilling has been completed to final contours, a minimum 900 mm thick layer of native silty clay till soil shall be placed having a hydraulic conductivity of 1×10^{-8} m/s or less followed by 150 mm of topsoil. The Owner shall construct the final cover system for the Site in accordance with Items 33 to 36 of Schedule "A" and this ECA .

ii. The Owner shall ensure that no contaminated soils are used in the final cover.

Cleaning Leachate Collection System

4.2 The leachate collection system piping for each stage of the landfill shall be inspected and cleaned in accordance with the schedule outlined in Condition 13.7.

Leachate Storage System

4.3 Approval is hereby granted for construction of the leachate storage system, all in accordance with Items 70 and 71 in Schedule "A".

4.4 The Owner shall ensure there are no leachate spills during construction of the leachate storage system and during truck loading.

4.5 (1) The water level in the leachate storage tank should be maintained close to the low level of 127.50 m. Storage capacity above the low level shall only be used in case the Napanee Water Pollution Control Plant and other regional wastewater treatment plants are unable to accept all of the leachate from the Site.

(2) Leachate pumping to the storage tank shall stop when the maximum water level of 136.17 m is reached. In this case the leachate should be pumped to the holding lagoon as an emergency storage measure.

(3) Leachate in the lagoon shall be sent off-site for treatment as soon as the capacity at the the Napanee Water Pollution Control Plant and other regional wastewater treatment plants become available.

(4) The Owner shall ensure immediate actions are taken when the high water level alarms at the pumping stations and the storage tank are sound to prevent leachate spills.

4.6 (1) Approval is granted for construction of the leachate forcemain between the north pumping chamber PS2 and holding lagoon, all in accordance with the ECA application and supporting documents listed as Items 69 and 71 in Schedule "A".

(2) The leachate forcemain shall not be operated unless it has been demonstrated and accepted by the Ministry that the integrity of the liner is not compromised and leakage from the lagoon is not of concern.

Phytoremediation System

4.7 (1) The phytoremediation system located in the northwest corner of Site shall be constructed and operated in accordance with Item 38 in Schedule A.

(2) The extent of the phytoremediation system shall not extent beyond the limits as shown in Item 38 in Schedule A.

(3) The phytoremediation system located in the northwest corner of the Site shall not be irrigated

with any leachate.

(4) The Owner shall ensure that the vegetation does not exceed a height of 3.66 metres (12 feet). Where vegetation reaches or exceeds a height of 3.66 metres (12 feet), the Owner shall prune the vegetation forthwith.

4.8 (1) The following monitor wells will be used to monitor groundwater levels around the phytoremediation system in the northwest corner of the Site:

a. Shallow Zone - M27, M66-2, M67-2, M86, M100, M101, M102 and M103
b. Intermediate Bedrock Zone - M3A-3, M72, M73, M74, M75 and M95-1

(2) The following monitors will be used to monitor groundwater quality around the phytoremediation system in the northwest corner of the Site:

a. Shallow Zone - M66-2, M67-2, M101 and M103
b. Intermediate Bedrock Zone - M5-3, M6-3, M74 and M75

(3) For the monitoring wells identified in Conditions 5.10 (1) and 5.10 (2), the Owner shall analyze groundwater for determining the groundwater levels and quality around the phytoremediation system in the northwest corner of the Site based on the EMP approved and any future approved changes identified in future amendments.

4.9 Reporting on the phytoremediation system shall be part of the annual monitoring report for the Site and shall include but not be limited to the following:

i. results and an analysis of the results of the monitoring programs for the phytoremediation system;
ii. assessment of the results of the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system;
iii. assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes;
iv. a report on operational problems identified during the operation of the phytoremediation system and a discussion of each problem and details of what was done to rectify each problem;
v. assessment of the need for operational changes for the phytoremediation system and a recommendation of the required changes;
vi. a Site plan which shows the location of the phytoremediation system and any changes made to the phytoremediation system;

Surface Water

4.10 The Owner shall not discharge surface water to receiving water bodies without an approval under Section 53 of the OWRA.

5.0 WASTE AND RECYCLABLE DROP-Off FACILITY

Compliance

5.1 Except as otherwise provided by these conditions, the Waste and Recyclable Drop-Off Facility shall be designed, developed, maintained and operated in accordance with the Applications for a Provisional Certificate of Approval for a Waste Disposal Site dated May 25, 2011, and the supporting documentation, plans and specifications listed in Schedule "A".

Waste Types

5.2 (1) The Waste and Recycling Drop-Off Facility shall accept the following types of waste:

i. Solid Non Hazardous Waste - Domestic Waste, Construction and Demolition Waste;
ii. Blue Box Materials;
iii. Tires; and
iv. White Goods and Metal;

(2) Contaminated soil shall not be accepted at the Waste and Recycling Drop Off Facility.

(3) If the Owner participates in Stewardship Ontario, Ontario Tire Stewardship, or any other recyling program developed by the Province of Ontario, then the waste that has been approved for collection under the aforementioned programs will also be accepted at the public drop off area.

Waste Quantity

5.3 (1) The total amount of waste and recyclable material, which may be received at the Waste and Recyclable Drop off Facility shall not exceed **50 tonnes** per day.

(2) On twenty-five occasions throughout a single calendar year the Owner is permitted to have a "Large Waste Day" where the Owner is permitted to accept up to **100 tonnes** per day. The Owner shall notify the District Manager in writing within 48 hours after the Owner has used one of the "Large Waste Days".

(3) The maximum amount of waste that may be stored at the Waste and Recycling Drop-Off Facility shall not exceed **50 tonnes**.

(4) The maximum number of waste storage containers that may be stored/utilized at the Waste and Recyclable Drop-Off Facility at any one time shall be as follows:

i. nine (9) - 40 yard bins for metals, tires and solid non hazardous waste

consisting of domestic, construction and demolition waste;

ii. two (2) - 8 yard bins for blue box materials;

iii. three (3) - five (5) gallon pails for single use batteries.

Service Area

5.4 Only waste that is generated within the boundaries of the **Town of Greater Napanee, Town of Deseronto and Tyendinaga Township** which includes the **Mohawks of the Bay of Quinte** shall be accepted at the Site**.** No waste shall be received for disposal at this Site from outside the approved service area.

Hours of Operation

5.5 The operating hours of the Waste and Recycling Drop-Off Facility shall be as follows:

i. 8 a.m. to 5 p.m. - Monday to Friday, except for statutory holidays; and

ii. 8 a.m. to 1 p.m. - Saturday

5.6 No waste shall be received at the Waste and Recycling Drop-Off Facility except during operating hours when the Site is under the supervision of trained personnel.

Removal Frequency

5.7 (1) Waste materials shall be removed from the Waste and Recycling Drop-Off Facility on a minimal frequency of twice per week with the exception of white goods and blue box materials.

(2) White goods and blue box materials shall be removed at a frequency no less than once every six months.

(3) Wastes which have been approved for collection under Stewardship Ontario, Ontario Tire Stewardship, or any other recycling programs developed by the Province of Ontario, shall be removed from the Site at the frequency as detailed in the requirements for the aforementioned programs.

Operations

5.8 Recycling activities shall be completed as per Ontario Regulation 101/94.

5.9 Recyclable materials shall be properly separated and each area properly identified. The areas shall be kept in a neat and tidy manner.

5.10 All storage containers/bins used to store waste and/or recyclable materials shall be maintained in good condition to prevent leakage. The Owner shall immediately remove from service any leaking container. Containers/bins used to store clean scrap metal may be equipped with

drainage holes to permit the drainage of rainwater.

5.11 With the exception of white goods, waste may only be stored within the waste storage bins in accordance with Items 52, 53, 54 and 55 in Schedule "A".

5.12 All waste types shall be segregated either into bins, or in designated areas defined by barriers. All bins and designated waste storage areas shall be clearly labelled.

5.13 The Owner shall ensure that all white goods received at the Waste and Recyclable Drop-off Facility have been drained of any refrigerants, and have the appropriate paperwork (current ODP card) demonstrating that the refrigerants have been removed.

6.0 TRAINING

Employees and Training

6.1 A training plan for all employees that operate any aspect of the Site shall be developed and implemented by the Operator. Only trained employees shall operate any aspect of the Site or carry out any activity required under this ECA. For the purpose of this ECA "trained" means knowledgeable either through instruction or practice in:

i. the relevant waste management legislation including EPA, O. Reg. 347 , regulations and guidelines;
ii. major environmental and occupational health and safety concerns pertaining to the waste to be handled;
iii. the proper handling of wastes;
iv. the management procedures including the use and operation of equipment for the processes and wastes to be handled;
v. the emergency response procedures;
vi. the specific written procedures for the control of nuisance conditions;
vii. the terms, conditions and operating requirements of this ECA and,
viii. proper inspection, receiving and recording procedures and the activities to be undertaken during and after a load rejection.

7.0 INSPECTIONS AND RECORD KEEPING

Inspections and Log Book

7.1 (1) An inspection of the entire Site and all equipment on the Site shall be conducted daily when the transfer station is in operation to ensure that the Site is being operated in compliance with this ECA. Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the Site if needed.

(2) If the transfer station is not in operation, daily inspection of the entire Site and all

equipment on Site is not required. However, inspection of the leachate management system and all associated components shall be carried out weekly.

7.2 A record of the inspections shall be kept in a daily log book or a dedicated electronic file that includes:

i. the name and signature of person that conducted the inspection;
ii. the date and time of the inspection;
iii. the list of any deficiencies discovered;
iv. the recommendations for remedial action; and
v. the date, time and description of actions taken.

7.3 A record shall be kept in the log book of all the following:

i. the type, date and time of arrival, hauler, and quantity (tonnes) of all waste received at the Site; and,
ii. a list of the refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

7.4 The Owner shall maintain records of monthly site inspection in the form of a written log or a dedicated electronic file that shall include at least the following:

i. the amount of any leachate removed, or treated and discharged from the Site;
ii. complaints received and actions taken to resolve them; and
iii. emergency situations and actions taken to resolve them.

7.5 The Owner shall inspect the waste mound and surrounding areas for the presence of leachate seeps as required by Condition No. 13.2.

Record Retention

7.6 Except as authorized in writing by the Director, all records required by this ECA shall be retained at the Site for a minimum of two (2) years from their date of creation.

7.7 The Owner shall retain all documentation listed in Schedule "A" for as long as this ECA is valid.

7.8 All quarterly summary reports are to be kept at the Site for as long as this ECA is valid.

7.9 The Owner shall retain employee training records as long as the employee is working at the Site.

7.10 The Owner shall make all of the above documents available for inspection upon request of Ministry staff.

8.0 MONITORING

Groundwater Monitors

8.1 The Owner shall ensure all groundwater monitoring wells are properly capped, locked and protected from damage.

8.2. All groundwater monitoring wells whether included in the monitoring program or not shall be assessed at least every five years, and repaired, replaced or decommissioned as required in accordance with good standard practice to prevent groundwater contamination and in compliance with the requirements of Ontario Regulation 903.

8.3 The Owner shall repair or replace any monitoring well included in the monitoring program which is destroyed or in any way made inoperable for sampling such that no more than one (1) sampling event is missed.

8.4 Any monitoring well included in the monitoring program that is no longer required as part of the groundwater monitoring program may be decommissioned provided its removal from the monitoring program has been approved by the Director. A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned.

Monitoring Programs

8.5 (a) The Owner shall submit to the District Manager by no later than April 15, 2016, with copies to the Parties, a revised Environmental Monitoring Plan ("EMP"). The revised EMP shall implement all of the provisions of the Interim Environmental Monitoring Plan Revision No. 04, prepared by WESA, dated August 2015, ("Interim EMP") subject to the following modifications ordered by the Tribunal:

i. The Interim EMP shall be further modified to implement continuous conductivity monitoring on Marysville Creek for one (1) year, commencing May 1, 2016, with continuous conductivity loggers placed at: an appropriate location on the Creek, far enough upstream of Deseronto Road to ensure no interference from road salt; and a second location upstream of the landfill to detect background influences. The results of the continuous conductivity monitoring shall be reported in conjunction with the January and July 2017 Semi-annual reports.

ii. The Interim EMP shall be further modified to state that the need for additional nested monitoring wells in the area of Marysville Creek and the landfill shall be assessed should 1,4-dioxane or another listed parameter be detected.

iii. The Interim EMP shall be further modified to require that the domestic and agricultural wells at properties located south of Highway 401 on County Road 1 West and Belleville Road, at the addresses noted in the row entitled "Off-site Domestic Wells", Table 2, page 11 of the August 2015 Interim EMP, should be tested for 1,4-dioxane every two (2) years

for at least the next six (6) years, or until the extent of the leachate contaminated groundwater is declined if that takes longer than six (6) years, and then every five (5) years once the delineation is complete.

iv. The Interim EMP shall be further modified to require that confirmation resampling (Step 2 under the groundwater evaluation methods and trigger mechanisms set out in Section 7.1 of the proposed revised EMP) is to occur at the same time as a water quality conformance assessment (Step 1).

v. The Interim EMP shall be further modified to set a Reasonable Use Limit (RUL) for 1,4-dioxane at 1 µg/L. Should Ontario amend O. Reg 169/03 to set an Ontario Drinking Water Quality Standard for 1,4-dioxane, the RUL shall be re-calculated in accordance with procedure document B-7-1, and the Interim EMP shall be amended as necessary to reflect the re-calculated RUL.

(b) The Owner shall carry out monitoring in accordance with the revised EMP submitted by April 15, 2016 as of April 16, 2016.

(c) The Owner shall submit a report to all the Parties and the District Manager by April 15, 2016 detailing any relevant work carried out relating to the delineation of off-site leachate impacted groundwater or surface water not otherwise described in the January 15, 2016 report submitted further to items 8.5(c) i. to iii. set out in the Tribunal's Order dated July 21, 2015 as amended on October 29, 2015 [the provisions of which are set out in Appendix A], detailing any relevant additional work carried out during this time period, and providing an assessment with necessary supporting rationale as to whether the off-site leachate impacted groundwater has been delineated. The assessment shall be conducted in accordance with the following criteria:

The extent of leachate impacted groundwater shall be delineated if it is demonstrated that groundwater quality within a sufficient number of monitoring wells at the outer extent of the impacted area that are hydraulically connected to the defined area of leachate impacted groundwater does not exceed:

i. the reasonable use limit ("RUL") for 1,4-dioxane;

ii. any RUL as defined in Guideline B-7 and its corresponding procedure, B-7-1 unless the exceedance is identified as not originating from the leachate from the landfill; or

iii. any RUL set out in this approval for other parameters unless the exceedance is identified as not originating from the leachate from the landfill.

(d) The following process shall be followed with respect to the report submitted under 8.5(c):

i. CCCTE, the MBQ and NGL shall have until June 1, 2016 to provide written comments on the report to the Owner and the District Manager and specifically whether delineation has been completed in accordance with the criteria.

ii. After receiving the written comments from CCCTE, the MBQ and NGL, the District Manager will convene a meeting among all the Parties to obtain further input and attempt to reach a consensus on whether delineation has been completed.

iii. By no later than July 31, 2016, the District Manager shall issue a written notice to the Owner and copying the Parties indicating whether delineation has been completed in accordance with the criteria.

iv. If it has been determined by the District Manager that delineation has not been completed, the Owner shall submit another proposal for additional groundwater investigation that shall be considered in accordance with steps i. through iii. with timelines modified by the District Manager accordingly.

v. The procedures or deadlines set out in steps i. through iv. can be altered with the consent of all the Parties.

(e) Within 90 days of the District Manager providing written notice to the Owner that delineation has been completed, the Owner shall submit to the Director, Environmental Permissions Branch, Ministry of the Environment, Conservation and Parks an application for approval to amend the ECA to address any non-compliance with Condition 8.8 and Guideline B-7, including if warranted an application to incorporate a contaminant attenuation zone into the approval, and including a proposed updated EMP. The application to amend the ECA shall be treated as a standard application and be posted on the EBR Registry for public comment. The application shall outline the options that were considered for bringing the Site into compliance with Guideline B-7 and the rationale for the preferred option, and include all necessary supporting documentation.

8.6 The Owner shall ensure that a comprehensive investigation of the hydrogeological implications and potential impacts of an existing pipeline which runs across the northern part of the neighbouring properties to the south of the Site is conducted and a report outlining the findings is submitted to the District Manager and the Parties.

8.7 (a) The Owner shall conduct odour monitoring and undertake abatement activities as described in the Odour Monitoring Plan dated June 2016, set out as Item 67 in Schedule "A".

(b) In the event of odours that are three (3) intensity units (based on the scale provided on Table 3.1 of the Odour Monitoring Plan) or greater are detected at an offsite receptor over a period outlined in Section 3.3.1.2 of the Odour Monitoring Plan, and the landfill mound is confirmed to be the source of the odour, repairs shall be made to the landfill mound as soon as possible. Upon completion of repairs, a surface emission survey shall be carried out to demonstrate that total hydrocarbon vapours, expressed as methane, do not exceed 500 parts per million per each grid dimension.

Compliance Criteria

8.8 The Site shall be operated in such a way to ensure compliance with the MECP's Guideline B-7 Reasonable Use Concept at monitoring points along the property line that have the potential to be impacted by leachate from the Site.

8.9 For the purpose of Condition 8.8, a reasonable use limit of 1 µg/L shall be used for the parameter 1,4-dioxane unless an Ontario Drinking Water Quality Standard is established in O. Reg. 169/03 in which case the RUL for 1,4-dioxane shall be recalculated in accordance with the B-7-1 Procedure Document and the interim EMP or EMP, as the case may be, shall be amended as necessary to reflect the recalculated RUL.

8.10 Notwithstanding Condition 8.8, if a contaminant attenuation zone ("CAZ") is established, the Site shall be operated in such a way to ensure compliance with MECP's Guideline B-7 Reasonable Use Concept at

i. monitoring wells that act as groundwater compliance points within the CAZ; or

ii. along the boundary of the CAZ where it replaces the property line,

unless the non-compliance is identified as not originating from the leachate from the landfill.

8.11 Any off site exceedance of parameters for groundwater, surface water, or odour shall be reported to the District Manager within 48 hours of determination of the exceedance. In addition, a statement detailing which results are out of compliance with the Ministry's guidelines and objectives shall be provided at the same time as the results.

8.12 Any monitoring result that detects 1,4-dioxane at or above the detection limit of 1 µg/l at any groundwater well or domestic well at which 1,4-dioxane has not been detected in the past or at any surface water monitoring location shall be reported to the District Manager within 48 hours of determination of the exceedance.

8.13 Unless otherwise agreed to in writing by the residents of the residences listed below, unless the residence is vacant and likely to remain vacant, the Owner shall provide whole house replacement water supplies for the residences located at 1264, 1252, 1250, 1206, 1181, and 1144 Beechwood Road.

9.0 CONTINGENCY PLANS

Groundwater and Surface Water Impact Contingency Plan

9.1 (a) The Owner shall initiate the contingency plans outlines in section 7.4 of the revised EMP referenced in Condition 8.5(a), or as replaced with an updated version, when any of the identified trigger mechanisms occur.

(b) Notwithstanding Condition 9.1(a), the Owner shall not use fracture trench as a Leachate

Collection System contingency measure.

Leachate Collection System Contingency Plan

9.2 i. The Owner shall initiate the Leachate Collection System Contingency Plan at a minimum when the trigger mechanisms identified in Items 41, 47 and 48 of Schedule "A" have been identified as occurring.

ii. The conceptual Leachate Collection System Contingency Plans as identified in Item Nos. 41, 47 and 48 in Schedule "A" are considered acceptable. In the event the Owner needs to implement the Contingency Plan, the Owner shall submit to the Director for approval prior to implementation, with copies to the District Manager, detailed design drawings for works or any remedial system required for the contingency plan.

Leachate Contingency Plan

9.3 The Owner shall on a biannual basis confirm that there is a suitable location available for disposal of leachate and what that location is. Confirmation shall be provided to the District Manager upon receipt. If a location for disposal of leachate is not available, the Owner shall provide an action plan for approval to the District Manager.

9.4 (1) By June 30, 2021, the Owner shall submit a Spill Contingency Plan to the District Manager. The Spill Contingency Plan shall be prepared in accordance with Ontario Regulation 224/07 and should include procedures to prevent and mitigate accidental leachate discharge to the environment.

(2) The Spill Contingency Plan shall be readily accessible to any Operators on Site, and shall be kept up to date by the Owner.

Landfill Gas Contingency Plan

9.5 i. The Owner shall initiate the Landfill Gas System Contingency Plan at a minimum when the trigger mechanisms identified in Item Nos. 42, 47 and 48 in Schedule "A" have been identified as occurring.

ii. The conceptual Landfill Gas System Contingency Plans as identified in Item Nos. 42 and 48 in Schedule "A" are considered acceptable. In the event the Owner needs to implement the Contingency Plan, the Owner shall submit to the Director for approval prior to implementation, with copies to the District Manager, detailed design drawings for works or any remedial system required for the contingency plan.

Public Notification Plan for Contingency Plans

9.6 (a) The Owner shall provide notice to interested persons and follow the procedures set out in

the Public Notification Plan dated November 2020 set out as Item 73 in Schedule "A" upon the occurrence of any event that triggers notice to be given as set out in the Plan.

(b) Should the Owner wish to amend the Public Notification Plan, the Owner shall submit a request for amendment, with supporting documents, to the District Manager, for approval. The request should also include a list of interested persons that were consulted on the proposed amendments and a summary of their comments.

10.0 PUBLIC LIAISON COMMITTEE

10.1 The Owner shall use its best efforts to establish and maintain a Public Liaison Committee (PLC) for the Site. The PLC shall serve as a focal point for dissemination, review and exchange of information and monitoring results relevant to the operation of the undertaking. In addition, the purpose of the PLC will be to provide community review of the development, operation (current and proposed) and ongoing monitoring, closure and post-closure care related to the Site. The PLC will also be provided the opportunity to review and comment on any subsequent applications for approval under the EPA.

10.2 The Owner shall invite representatives from the Town of Greater Napanee, the Ministry, the Township of Tyendinaga, the Quinte Conservation Authority and the Mohawks of the Bay of Quinte to sit on the committee.

10.3 Community members shall be appointed by the PLC. The community member positions are intended to be available to individuals that are not members of groups already represented on the PLC and have an interest in the operation of the Site. The PLC shall encourage individuals who reside in close proximity to the Site to participate. A community member is defined as a taxpayer and/or resident of the Town of Greater Napanee and/or The Township of Tyendinaga.

10.4 The general mandate of the PLC shall include:

a. Review operations and provide regular input to the Owner with respect to all matters pertaining to landfill site operation, including issues pertaining to ongoing operations, monitoring, the need for contingency plans or remedial measures, response to community complaints, the need for changes to the ECA, post-closure monitoring and maintenance, and development of the proposed end use for the Site;
b. Review operational and monitoring reports;
c. Consider and make recommendations to the Owner regarding outside consulting advice in respect of the Site;
d. Facilitate ongoing dialogue between the Owner, and the community, including residents and businesses in the immediate vicinity of the Site;
e. Provide reports regularly to the community on the activities of the PLC, the landfill operations and landfill related issues and seek public input on these activities and issues;
f. Monitor the Owner’s complaint response program and make recommendations to the

Owner with respect to this program; and

g. Provide recommendations to the Owner with respect to unresolved complaints.

10.5 The Owner shall provide for the administrative costs of operating the PLC, including the cost of meeting places and clerical services.

10.6 The PLC meetings shall take place on a semi-annual basis.

10.7 Minutes and agendas of meetings shall be prepared and distributed on a timely basis.

10.8 The Owner shall provide the PLC with reasonable access to the Site , as well as the Owner's consultants as required and consultants reports in accordance with protocols agreed to between the Owner and the PLC.

10.9 Unless disclosure would be contrary to the Freedom of Information and Protection of Privacy Act ,the PLC, the Town of Greater Napanee, the Township of Tyendinaga, and the Mohawks of the Bay of Quinte are to be provided all formal submissions and correspondence related to the Site operations by the Owner at the same time as these items are submitted to the Ministry .

10.10 All recommendations made to the Owner with respect to ongoing Site operations, monitoring and the implementation of contingency measures shall be discussed at joint meetings between representatives of the Owner and the PLC. The purpose of these meetings will be to arrive at an agreement between the Owner and PLC with respect to implementation of the recommendations.

10.11 The Owner will provide and deliver to the PLC, the Town of Greater Napanee, the Township of Tyendinaga and the Mohawks of the Bay of Quinte all monitoring results, reports and any other information required to be collected and/or submitted to the MECP by a Condition of this ECA.

10.12 The Owner, with approval from the District Manager, may dispense with the PLC after January 1, 2022 if there is no interest from the public in continuing with it.

11.0 COMPLAINTS PROCEDURE

11.1 If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information and the time and date of the complaint;

b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c. The Owner shall complete a report written within one (1) week of the complaint date,

listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents. A copy of the report shall be retained at the Site.

11.2 The Owner shall post the Site complaints procedure at Site entrance along with the name and phone number of a suitable, local contact to receive complaints or questions related to the Site. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

12.0 EMERGENCY SITUATIONS

12.1 In the event of a fire or discharge of a contaminant to the environment, Site staff shall contact the MECP Spills Action Centre (1-800-268-6060) and the District Office of the MECP.

12.2 The Owner shall submit to the District Manager a written report within three (3) days of the spill or incident, outlining the nature of the incident, remedial measures taken and measures taken to prevent future occurrences at the Site.

12.3 The Emergency Response Manual shall be updated on a regular basis and be provided to the District Manager within one (1) month of the revision date.

12.4 The Owner shall ensure that adequate fire fighting and contingency spill clean-up equipment is available and that emergency response personnel are familiar with its use and location.

13.0 SITE CLOSURE

13.1 The Owner shall ensure a sign with the following information is present at the front gate of the Site:

a. the name of the Site and Owner;
b. the ECA number;
c. the name of the Operator;
d. a warning against unauthorized access;
e. the telephone number to which complaints or questions may be directed;
f. a twenty-four (24) hour emergency telephone number;
g. the Site is closed;
h. dumping outside of the gate is illegal; and
i. alternative locations for waste disposal.

13.2 (1) After Site closure, on a weekly basis, the Owner shall inspect the Site for leachate seeps and for signs of illegal dumping of waste. Illegal waste shall be removed within 48 hours of detection. Leachate seeps shall be repaired within 7 days of detection. Upon approval from the Director, the frequency for inspecting for leachate seeps may be reduced to quarterly.

(2) Once the leachate management system in accordance with Items 69 and 70 of Schedule "A" is in operation, inspection frequency for leachate seeps and signs of illegal dumping of waste can be reduced to once a month.

13.3 (1) During the post-closure period, the Owner shall inspect the Site monthly for the following (but not limited to) items:

a. General settlement areas or depressions on the waste mound;
b. Shear and tension cracks on the waste mound;
c. Condition of the surface water drainage works;
d. Erosion and sedimentation in surface water drainage system;
e. Presence of any ponded water on the waste mound;
f. Adequacy of cover material;
g. Evidence of vegetative stress, distressed poplars, or sideslope plantings on or adjacent to the waste mound;
h. Condition of groundwater monitoring wells and gas wells;
i. Presence of insects, vermin, rodents, and scavenging animals on or adjacent to the waste mound;
j. Condition of fence surrounding the Site; and
k. General Site appearance.

(2) During the post-closure period, the following features shall be inspected, recorded, and maintained on a quarterly (every three (3) months) basis:

a. evidence of settlement;
b. landfill gas collection system, landfill gas flare and related equipment;
c. cover soil integrity;
d. vegetative cover;
e. gates and fencing around the Site;
f. surface water drainage works; and
g. erosion and sediment in surface water drainage system.

13.4 Any deficiencies noted in the above items shall be repaired within one (1) month time of notice.

13.5 Upon Site closure, grass on the berms and the top of the landfill shall be cut a minimum of once per per year.

13.6 The ditches and culverts surrounding the Site shall be inspected on an annual basis and cleaned as required until the end of the contaminating lifespan.

13.7 (1) The leachate collection system shall be camera inspected every five (5) years after 10 years of Site closure, with cleaning as required; and

(2) Changes to the maintenance schedule for the leachate collection system shall be approved

by the District Manager.

13.8 The following shall remain in place and be operational at the Site until the end of the contaminating lifespan:

a. Leachate extraction equipment;
b. Landfill gas extraction equipment; and
c. Sedimentation ponds.

14.0 SEMI ANNUAL AND ANNUAL REPORTING

Semi Annual Monitoring Reporting

14.1 By **January 15** and **July 15** of each year, the Owner shall submit semi-annual monitoring reports to the District Office and post the reports on a publicly accessible website. These semi annual reports shall include:

a. The results in tabular form and an interpretive analysis of the results from the leachate, groundwater, surface water, and landfill gas monitoring programs approved by this ECA, including:

i. an assessment of the need to amend the monitoring programs;
ii. an evaluation of any observations of saline upwelling in the groundwater;
iii. an estimation of the leachate generated at the Site;
iv. an evaluation of leachate quality, levels, and mounding within the landfill;
v. figure(s) showing the landfill site and contaminant attenuation zone;
vi. maps or figures showing groundwater concentrations of alkalinity, tritium, 1-4 dioxane, and ammonia in the shallow and intermediate aquifers;
vii. figure(s) showing the off-site properties suspected or confirmed of being impacted by leachate from the landfill;
viii. a complete inventory of the groundwater monitoring well locations;
ix. detailed analysis on groundwater quality trends on downgradient groundwater wells which have been impacted or are suspected of being impacted by leachate from the landfill.

b. An assessment with regards to the compliance of the groundwater quality at the property boundary and compliance points with regards to Guideline B-7 Reasonable Use Concept;

c. A report on the status of any monitoring wells required to be tested pursuant to the EMP and a statement as whether those wells are in compliance with Ontario Regulation 903;

d. The second semi-annual report will include an Annual Summary section which

describes the results from the current calendar year and any data quality changes identified from previous years, or through the current year.

e. All surface and groundwater analytical results reported in future Semi-Annual and Annual Monitoring Reports shall be reported by groups of substances (i.e. VOCs, PAHs, inorganics, etc.) and by numeric location, and shall be posted by WMC on a publicly accessible website, with the data being posted on such website being updated annually.

Annual Reporting

14.2 A written report on the development, operation, and closure of the Site shall be completed annually (the "Annual Report"). The Annual Report shall be submitted to the District Manager, the PLC, the Town of Greater Napanee, the Township of Tyendinaga, the Mohawks of the Bay of Quinte, and a representative of the Concerned Citizens Committee of Tyendinaga and Environs by **March 31st** of each year and shall cover the year ending the preceding December 31st.

14.3 The Annual Report shall include the following:

i. an assessment of the operation and performance of all engineered facilities, the need to amend the design or operation of the Site, and the adequacy of and need to implement the contingency plans;
ii. an assessment of the efficiency of the leachate collection system;
iii. a summary of the inspection of the final cover and vegetative cover including identification of any seepages and remedial actions taken;
iv. previously existing Site facilities;
v. a summary of the quantity of any leachate or pre-treated leachate removed from the north and south pumping stations at the Site during each operating month;
vi. a discussion of the results of the toxicity testing of the landfill stormwater management ponds which includes potential impacts to the groundwater by the SWMP;
vii. a summary of any complaints received, the responses made and corrective/remedial taken if required;
viii. a summary of any seeps, upset conditions or emergency situations and or corrective/remedial actions taken
ix. a discussion of any operational problems encountered at the Site and corrective action taken;
x. a summary of the amount of wastes refused for disposal at the Site, the reasons for refusal and the carrier who brought the waste to the Site;
xi. a summary of the leachate collection system cleaning and inspection activities;
xii. an update summary of the amount of financial assurance which has been provided to the Director;
xiii. a statement of compliance with all conditions of this ECA and other relevant Ministry groundwater and surface water requirements;
xiv. a confirmation that the Site inspection program as required by this ECA has been

complied with by the Owner;

xv. any changes in operations, equipment or procedures employed at the Site; and recommendations regarding any proposed changes in operations of the Site.

14.4 (a) In the event the District Manager requires additional information to be submitted to complete the District Office's assessment on whether or not the Site is in compliance, the District Manager shall provide written notification to the Owner at least sixty (60) days before the submission of the next Semi-Annual or Annual Report submission date on the type of additional information to be included in the report.

(b) In the event the District Manager determines that the inclusion of information in either the annual or semi-annual report annual for which notification under 14.4(a) was provided is no longer warranted or needed for the Ministry's assessment of whether or not the Site is in compliance, the District Manager shall notify the Owner in writing of the information that is no longer required. The District Manager can later request the information be re-included in the report as per Condition 14.4 (a).

Schedule "A"

1. Application for a Certificate of Approval for a Waste Disposal Site (Landfill), dated January 11, 1988.

2. Report entitled "Sutcliffe Sanitation Services Ltd., Landfill Site Expansion Development and Operations Report", prepared by Henderson Paddon and Associates Limited, dated September 1985.

3. Report entitled "Addendum No. 1 Sutcliffe Sanitation Services Limited Landfill Site Expansion Development and Operations Report" prepared by Henderson Paddon and Associates Limited dated December 1986.

4. Report entitled "Hydrogeologic Study Proposed Landfill Expansion, Township of Richmond" prepared by Morrison Beatty Limited and dated September 30, 1985.

5. Report entitled "Proposed Groundwater and Surface Water Monitoring Program, Sutcliffe Sanitation Services Limited Landfill, Township of Richmond" prepared by Morrison Beatty Limited and dated August 1987.

6. Letter dated September 12, 1990 from Mr. J.R. Bray, P.Eng. to Tricil Limited (c/o Laidlaw Waste Systems Ltd.).

7. Application for Approval of a Waste Disposal Site, dated May 24, 1995 and signed by Michael Pullen, Director, Environmental Management, Laidlaw Waste Systems (Richmond) Ltd.

8. Letter from Jeff Armstrong, Henderson, Paddon & Associates Limited to I. Parrott, MOEE dated May 30, 1995 re: Development of Landfill Base of Phases IV and V (including attached drawings 8570D-400 to 406, inclusive and 8570D-94-Site).

9. Letter from Jeff Armstrong, Henderson Paddon and Associates Limited to i. Parrott, MOEE dated June 23, 1995 re: Additional information to Support Application for Provisional Certificate of Approval for a Waste Disposal Site A371203.

10. Letter from Jeff Armstrong, Henderson Paddon and Associates Limited to I. Parrott, MOEE dated July 21, 1995 re: Public Consultation on the Re-Design of the Landfill Base for Phase IV and V.

11. Application for Approval for a Waste Disposal Site dated July 25, 1996 signed by Mr. Michael Pullen, Director, Environmental Management.

12. Report entitled "Undertaking to Establish an Organic Composting Facility at the Laidlaw Waste Systems (Richmond) Ltd. Landfill Site" dated July 1996, prepared by Laidlaw Waste Systems (Richmond) Ltd.

13. Plan entitled "Richmond Township Landfill Proposed Compost Pad Expansion", revised April

12, 1996, prepared by Henderson Paddon and Associates Ltd.

14. The June 9, 1999, report entitled "Conceptual Design for a Landfill Gas Collection and Flaring System Richmond Landfill Site Napanee, Ontario" which was prepared by Comcor Environmental Limited.

15. Drawing 8570G-L1 dated May 2000- Phase I Proposed Leachate Collector, Napanee Landfill, Napanee, Ontario

16. A letter dated July 31, 2000, regarding concerns raised during review of application, to Tes Gebrezghi, MOE, from Jeff Armstrong, Henderson Paddon & Associates Limited

17. A report titled "Assessment of Napanee Water Pollution Control Plant To Treat Leachate from the Laidlaw Landfill, Richmond, Ontario, dated May 1996 and prepared by Henderson, Paddon & Associates Limited

18. A report titled "CWS Response to the Town of Greater Napanee Audit of the Richmond Landfill Operation, dated May 12, 2000, and prepared by Canadian Waste Services Inc.

19. Report entitled "Richmond Sanitary Landfill Site Final Closure Plan" and appendices dated June 2007 prepared by Henderson, Paddon and Associates Limited.

20. Memorandum dated November 30, 2007 from K. Stephenson, Hydrogeologist, Eastern Region, MOE to C. Dobiech, Kingston District, MOE.

21. Memorandum dated December 5, 2007 from Victor Castro, Surface Water Scientist, Eastern Region, MOE to Craig Dobiech, Kingston District, MOE.

22. Letter dated July 11, 2008 from Greg Washuta, Senior Waste Engineer, EAAB, MOE to Mike Walters, WMCC.

23. Letter, attachments, and Appendix B dated September 26, 2008 from Randy Harris, Site Manager, WMCC to Greg Washuta, Senior Waste Engineer, EAAB, MOE.

24. Letter dated February 23, 2009 from Greg Washuta, Senior Waste Engineer, EAAB, MOE to Randy Harris, Site Manager, WMCC.

25. Drawing number 8570-2006 entitled "June 2006 Existing Conditions Richmond Landfill Napanee, Ontario" dated March 19, 2007 prepared by Henderson Paddon and Associates Limited.

26. Drawing number 8570F-104 entitled "Richmond Landfill Site Proposed Final Contours Landfill and Borrow Areas" dated March 1995 prepared by Henderson Paddon and Associates Limited.

27. Letter dated March 2009 from Randy Harris, Site Manager, Waste Management of Canada Corporation to Greg Washuta, Senior Waste Engineer, Waste Unit, EAAB, MOE.

28. Drawing number 8570F-114 entitled "Richmond Township Landfill Sections 'A-A' and 'B-B'" created by Henderson Paddon and Associates Limited, dated March 1996.

29. Drawing number 8570F-115 entitled "Richmond Township Landfill Sections 'C-C', 'D-D', and 'E-E'" created by Henderson Paddon and Associates Limited, dated March 1996.

30. Memorandum dated February 25, 2009 from K. Stephenson, Hydrogeologist, Eastern Region, MOE to C. Dobiech, Kingston District, MOE.

31. Letter dated June 1, 2009 from Mr. Randy Harris, Site Manager, Waste Management of Canada Corporation to Application Processor, Client Services Section, Environmental Assessment and Approvals Branch, Ministry of the Environment.

32. Report entitled "Site Conceptual Model Report, WM Richmond Landfill" and attached appendices A to H inclusive by Dr. B.H. Kueper and WESA Inc., dated October 2009.

33. Report entitled "Richmond Sanitary Landfill Site OS-08-570-13-OS Construction Quality Assurance/Construction Quality Control Plan for the Final Cover System", dated June 2010, prepared by GENIVAR Consultants LP.

34. E-mail dated August 20, 2010 from Greg Washuta, Senior Waste Engineer, Waste Unit, Environmental Assessment and Approvals Branch, Ministry of the Environment to Dave White and Randy Harris, Waste Management of Canada Corporation.

35. Letter dated August 24, 2010 from Jeff E. Armstrong, Senior Environmental Engineer, GENIVAR Consultants LP to Greg Washuta, Senior Waste Engineer, Waste Unit, Environmental Assessment and Approvals Branch, Ministry of the Environment.

36. Document entitled "Richmond Sanitary Landfill Site Construction Quality Assurance/Construction Quality Control Plan for the Final Cover System ERRATA" prepared by Jeff E. Armstrong, Senior Environmental Engineer, GENIVAR Consultants LP, dated August 24, 2010.

37. Application for a Provisional Certificate of Approval for a Waste Disposal Site for Waste Management of Canada Corporation's Richmond Landfill Site, signed by Randy Harris, Site Manager on September 30, 2010.

38. Report entitled "Phytoremediation Plan - WM Richmond Landfill Town of Greater Napanee, Ontario" dated December 2010 and prepared by WESA Inc.

39. Report entitled "Richmond Sanitary Landfill Site - Operations and Procedures Manual June 25, 2010" prepared by GENIVAR Consultants LP Inc dated June 25, 2010.

40. Report entitled "Landfill Gas Collection and Flaring System Design Report - Richmond Landfill" prepared by GENIVAR Consultants LP dated June 29, 2009.

41. Report entitled "Richmond Sanitary Landfill Site - Leachate Collection System Contingency Plan" prepared by GENIVAR Consultants LP dated June 25, 2010.

42. Report entitled "Richmond Sanitary Landfill Site - Landfill Gas Collection System Contingency Plan" prepared by GENIVAR Consultants LP dated June 25, 2010.

43. Report entitled "Financial Assurance Plan" completed by GENIVAR Consultants LP and dated June 25, 2010;

44. Report entitled "Contaminating Lifespan" (Appendix D of Financial Assurance Plan) completed by GENIVAR Consultants LP and dated June 16, 2010.

45. Report entitled "Final Report - Environmental Monitoring Plan - WM Richmond Landfill" prepared for Waste Management of Canada Corporation by WESA Inc. and dated June 29, 2010.

46. Appendix "A" (Report Entitled "Odour Monitoring Plan" prepared for Waste Management of Canada Corporation by GENIVAR Consultants LP dated June 25, 2010) of the report entitled "Environmental Monitoring Plan - WM Richmond Landfill" prepared for Waste Management of Canada Corporation by WESA Inc. and dated June 29, 2010.

47. Letter dated January 14, 2011 addressed to Mr. Randy Harris, Waste Management of Canada Corporation from Mr. Greg Washuta, Ministry of the Environment providing comments on Items 39 through 46 in Schedule "A".

48. Letter dated February 28, 2011 addressed to Mr. Greg Washuta, Ministry of the Environment from Mr. Randy Harris, Waste Management of Canada Corporation providing additional information regarding financial assurance, the status of the environmental monitoring plan and various contingency plans.

49. Letter dated April 5, 2011 addressed to Mr. Randy Harris, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on financial assurance, the status of the environmental monitoring plan and various contingency plans.

50. Letter dated April 20, 2011 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. providing additional information on the environmental monitoring plan, financial assurance and the contaminating lifespan of the Site.

51. Letter dated August 12, 2011 and supporting documentation addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Reid Cleland, Waste Management of Canada Corporation requesting amendment to Condition No. 35. The supporting documentation included the following:

    i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated August 15, 2011.

52. Letter report dated May 25, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. requesting an amendment to permit the approval of continued recyclables disposal at the Richmond Landfill Site. The supporting documentation included the following:

    i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated May 25, 2011;
    ii. Drawing No 8570713-MT1 entitled "Site Location Map" prepared by GENIVAR INC. and dated May 17, 2011; and
    iii. Drawing No. 8670713-MT2 entitled "Site Plan Mini-transfer Station" prepared by GENIVAR Inc. and dated May 17, 2011.

53. Letter report dated May 25, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. requesting an amendment to Condition No. 35 which would allow the continue use of the mini-transfer station at the Richmond Landfill Site. The supporting documentation included the following:

    i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated May 25, 2011;
    ii. Development and Operations Report for a Waste Transfer Station prepared by GENIVAR Inc. (Project No. 081-12493-00) and dated May 2011
    iii. Drawing No 8570713-MT1 entitled "Site Location Map" prepared by GENIVAR INC. and dated May 17, 2011; and
    iv. Drawing No. 8670713-MT2 entitled "Site Plan Mini-transfer Station" prepared by GENIVAR Inc. and dated May 17, 2011.

54. Letter dated June 20, 2011 addressed to Mr. Reid Cleland, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on the continued operation of the Waste and Recycling Drop-Off Facility.

55. Letter dated June 30, 2011 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. providing additional information on the operations of the Waste and Recycling Drop-Off Facility. The information included the following:

    i. Development and Operations Report for a Waste Transfer Station prepared by GENIVAR Inc. (Project No. 081-12493-00) and dated June 2011.

56. Environmental Review Tribunal Order for Case No. 12-033 issued on April 26, 2013.

57. Report entitled "Richmond Sanitary Landfill Site- Odour Monitoring Plan - Revision No. 2" prepared by Waste Management of Canada Corporation.

58. Report entitled "Richmond Sanitary Landfill Site - Public Notification Plan - February 2013" prepared for WMCC by GENIVAR Inc. and dated February 2013.

59. Environmental Review Tribunal Order for Case No. 12-033 issued on July 21, 2015.

60. Environmental Review Tribunal Order for Case No. 12-033 issued on August 13, 2015.

61. Environmental Review Tribunal Order for Case No. 12-033 issued on October 29, 2015.

62. Environmental Compliance Approval Application dated June 10, 2014 signed by Reid Cleland, Waste Management of Canada Corporation.

63. Environmental Compliance Approval Application dated January 13, 2015 signed by Reid Cleland, Waste Management of Canada Corporation, and the supporting documentation including the Design Brief - Leachate Storage System Richmond Landfill Site dated January 2015 prepared by WSP Canada Inc.

64. Environmental Review Tribunal Order for Case No. 12-033 issued on December 24, 2015.

65. Email dated May 13, 2016 from Peter Brodzikowski, WSP Canada to Rick Li, Ministry of the Environmental and Climate Change providing a response to the Ministry' review comments on the leachate storage system and the maintenance schedule.

66. Environmental Review Tribunal Order for Case No. 12-033 issued on April 14, 2016.

67. Report entitled "Odour Monitoring Plan - Revision No. 3 Richmond Sanitary Landfill Site" prepared for WMCC by WSP Canada and dated June 2016.

68. Environmental Compliance Approval Application dated January 14, 2020 signed by William McDonough, Waste Management of Canada Corporation, and the supporting documentation, for amending the ECA to remove irrelevant conditions and update conditions as necessary.

69. Environmental Compliance Approval Application dated April 15, 2020 signed by William McDonough, Waste Management of Canada Corporation, and the supporting documentation, for installation of a forcemain between pumping chamber PS2 and the leachate holding lagoon.

70. Environmental Compliance Approval Application dated April 30, 2020 signed by William McDonough, Waste Management of Canada Corporation, and the supporting documentation regarding modifications to the leachate storage system.

71. Letter dated October 8, 2020 addressed to Rick Li, Ministry of the Environment, Conservation and Parks from WSP providing a response to MECP's review comments on the above three applications (Items 68, 69 and 70).

72. Email dated November 11, 2020 to Rick Li, MECP from Bev Leno, WSP RE: *WM Richmond Landfill Site ECA No. A371203 - Response to MECP Comments re Three Applications with Reference Nos. 4645-BKVS9Y, 9759-BNQQC6, and 9778-BP7HQN.*

73. Report entitled "Richmond Sanitary Landfill Site Public Notification Plan – November 2020", prepared by Waste Management of Canada Corporation and dated November 2020.

The reasons for the imposition of these terms and conditions are as follows:

1. *The reason for Conditions 1.1 and 1.2 is to ensure that the Site is designed, operated, monitored and maintained in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.*

2. *The reason for Conditions 1.3, 1. 4. 1. 5, 1.9, 1.10, 1.11, 1.12, 1.13, and 8.8 is to clarify the legal rights and responsibilities of the Owner under this ECA.*

3. *Conditions 1.6, 1.7 and 1.8 are included to ensure that the appropriate Ministry staff have ready access to information and the operations of the Site, which are approved under this Certificate.*

4. *Conditions 1.14 and 1.15 are included, pursuant to subsection 197(1) of the EPA, to provide that any persons having an interest in the Site are aware that the land has been approved and used for the purposes of waste disposal.*

5. *The reasons for Condition 1.16 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this ECA.*

6. *The reasons for Conditions 1.17 and 1.18 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.*

7. *The reason for Condition 1.19 is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this ECA. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.*

8. *The reasons for Conditions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 , 2.7, and 2.8 are to ensure that sufficient funds are available to the Ministry to close the landfill, and to carry out all expected post-closure care activities and any contingencies. Failure to include requirements for financial assurance would not be in the public interest and may result in a hazard or nuisance to the natural environment or any person.*

9. *The reasons for Conditions 3.1, 3.2 and 3.3 are to ensure the Owner operates the Site in an environmentally safe manner. This to is ensure the environment and public health are protected.*

10. *The reason for Condition 3.4 is to establish a closure date for the Site.*

11. *The reasons for Condition 3.5 is to specify the total Site capacity approved under this ECA, based on the Owner's application and supporting documentation.*

12. *The reasons for Condition 3.6 are to specify Site access to/from the Site and to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no Site attendant is on duty.*

13. *The reason for Condition 3.7 is to ensure the on-site roads are well maintained to provide access to the site operation and maintenance works*.

14. *The reason for Conditions 3.8 and 3.10 is to ensure that nuisance such as odour, litter, and dust are minimized during landfilling.*

15. *The reasons for Condition 3.9 are the protection of public health and safety and minimization of the potential for damage to environmental control, monitoring and other works at the landfill Site. Scavenging is the uncontrolled removal of material from waste at a landfill Site.*

16. *The reason for Condition 3.11 is to ensure that noise from or related to the operation of the landfill is kept to within Ministry limits and does not result in a hazard or nuisance to any person.*

17. *The reason for Condition 4.1 is to ensure proper closure of the landfill Site by the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the Site.*

18. *The reasons for Condition 4.2 are to ensure proper operation of the leachate collection system. This is to ensure the protection of the environment and public health.*

19. *The reason for Conditions 4.3 and 4.4 is to* approve the proposed leachate storage system for improvement to the leachate handling and trucking.

20. *The reasons for Condition 4.5 is to ensure leachate collected from the Site is transported off-site for treatment in time, and the water level of the leachate storage system is controlled to prevent overflow and spills.*

21. *The reason for Condition 4.6 is to approve the construction of forcemain between the north pumping chamber and holding lagoon to provide emergency storage capacity for leachate in case the leachate storage system is full.*

22. *The reason for Conditions 4.7 to 4.9 is to approve the phytoremediation system and ensure it is properly operated, maintained and monitored.*

23. *The reason for Condition 4.10 is to ensure surface water at the site is not impacted by landfill operations. This is to ensure the environment and public health are protected.*

24. *The reason for Condition 5.1 is to approve the continued operation of the Waste and Recycling Drop-Off Facility as per the submitted information.*

25. *The reason for Conditions 5.2, 5.3, 5.4 and 5.7 is to ensure the type of waste, the quantity of waste service and removal frequency are clearly identified.*

26. *The reasons for Condition 5.5 and 5.6 is to specify the normal hours of operation for the landfill Site and a mechanism for amendment of the hours of operation and ensure trained staff are present to accept waste*

27. *The reasons for Conditions 5.8 through 5.13 is to ensure the operation is done in a manner that will not cause a nuisance or an adverse effect. This is to ensure the long-term protection of the environment and human health.*

28. *The reason for Condition 6.1 is to ensure that the Site is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person.*

29. *The reasons for Conditions 7.1, 7.2 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, and 14.1 are to provide for the proper assessment of effectiveness and efficiency of Site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this ECA, the EPA and its regulations.*

30. *The reasons for Conditions 8.1, 8.2, 8.3, and 8.4 are to ensure protection of the natural environment and the integrity of the groundwater monitoring network.*

31. *The reason for Condition 8.5 is to demonstrate that the landfill Site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.*

32. *The reason for Condition 8.6 is to ensure that the existing pipeline at south of the Site does not pose an impact on neighbouring properties.*

33. *The reason for Condition 8.7 is to ensure the odour from the Site does not result in adverse effect to the surrounding environment.*

34. *The reason for Condition 8.8 is to ensure the groundwater quality at the Site boundary complies with applicable MECP standards and does not pose an impact to the*

environment.

35. *The reason for Conditions 8.9, 8.10, 8.13 and 9.1 is to incorporate the Environmental Review Tribunal Order dated April 14, 2016.*

36. *The reason for Conditions 8.11 and 8.12 is to incorporate the interim orders issued by the Environmental Review Tribunal on July 21, 2015 and August 13, 2015.*

37. *The reason for Conditions 9.2, 9.3, 9.4, 9.5, 11.1 and 11.2 is to ensure that the Owner follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the Site. A remedial action / contingency plan is necessary to ensure protection of the natural environment.*

38. *The reasons for Condition 9.6 are to ensure there is a public notification plan in the event that any contingency plan is activated or engaged, and to reflect the interim order issued by the ERT on April 26, 2013.*

39. *The reason for Conditions 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 10.10, 10.11, and 10.12 is to establish a forum for the exchange of information and public dialogue on activities carried out at the landfill Site. Open communication with the public and local authorities is important in helping to maintain high standards for site operation and environmental protection.*

40. *The reasons for Conditions 12.1 and 12.2 are to ensure that the Ministry is informed of any spills or fires at the Site and to provide public health and safety and environmental protection.*

41. *The reason for Condition 12.3 is to ensure the Emergency Response Manual is updated regularly.*

42. *The reasons for Condition 12.4 are to guarantee that appropriate measures are taken by the Owner to prevent future occurrences of spills or fires at the site and to protect public health and safety and the environment.*

43. *The reasons for Conditions 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, and 13.8 are to ensure that final closure of the Site is completed in accordance with Ministry requirements, an aesthetically pleasing manner and to ensure the long-term protection of the natural environment.*

44. *Conditions 14.1 and 14.4 is included in the ECA to reflect the interim order issued by the ERT on April 26, 2013.*

45. *The reasons for Conditions 14.2 and 14.3 are to reflect the interim order issued by the ERT on April 26, 2013, and to ensure that regular review of Site development, operations and monitoring data is documented and any possible improvements to Site*

design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing Site activities and for determining the effectiveness of Site design.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A371203 issued on March 20, 1988

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5	AND	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/ , you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 19th day of March, 2021

Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

RL/
c: District Manager, MECP Kingston - District
Peter Brodzikowski, P.Eng. , WSP Canada Inc.

APPENDIX

A-2 *ENVIRONMENTAL COMPLIANCE APPROVAL (SEWAGE WORKS) NO. 1688-8HZNJG, DATED JANUARY 10, 2012*

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 1688-8HZNJG
Issue Date: January 10, 2012

Waste Management Canada Corporation
1271 Beechwood Rd
Rural Route, No. 6
Napanee, Ontario
K7R 3L1

Site Location: Richmond Landfill Site
1271 Beechwood Road, Parts of Lots 1,2, &3, Concession 4, Richmond
Greater Napanee Town, County of Lennox and Addington

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

leachate collection and disposal facility and stormwater management facility to service the Richmond Landfill Site located on Parts of Lots 1, 2 and 3, Concession 4, in the Town of Greater Napanee as follows:

SEWAGE WORKS APPROVED ON AUGUST 19, 2008:

Stormwater Management Pond - SWM Pond No. 3

a new stormwater management facility located south of the approved landfill footprint and north of Beechwood Road to service 20 ha drainage area of the Richmond Landfill Site, designed to provide quantity and quality control of stormwater runoff from storm events up to 1:100 return frequency consisting of the following:

- two (2) extended wet detention ponds interconnected by two (2) 750 mm diameter culverts providing a permanent pool storage capacity (including sediment storage) of 19,642 m^3 between the elevations of 122.4 m ASL and 124.4 m ASL and active storage capacity of 7,620 m^3 between the elevations of 124.4 m ASL and 124.73 m ASL (overall total storage capacity of 27,262 m^3);

- each detention pond equipped with a rip rap lined inlet structure, a forebay, and cattails planted in the shallow areas surrounding the permanent pool;

- an outlet structure consisting of one (1) 600 mm x 600 mm precast concrete catch basin equipped with a 100 mm diameter inlet orifice, one (1) 300 mm diameter PVC discharge pipe equipped with one (1) 300 mm diameter gate valve, discharging through a drainage ditch to the Beechwood Road side ditch eventually flowing to Marysville Creek;

- one (1) 3.0 m wide rip rap lined emergency spillway with an invert elevation of 124.73 m ASL, discharging through a drainage ditch to the Beechwood Road side ditch; and

- including all controls and associated appurtenances.

all in accordance with the Application for Approval of Industrial Sewage Works submitted by Waste Management of Canada Corporation dated April 11, 2008, drawings and design specification prepared by Henderson Paddon & Associates Limited, Owen Sound, Ontario and the document listed in Schedule 'B'.

EXISTING LEACHATE MANAGEMENT FACILITY:

- one (1) approximately 504 m long 200 mm diameter perforated PVC or HDPE perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending through seven (7)1200 mm diameter pre-cast concrete service manholes (MH12, MH11, MH10, MH9, MH8, MH7 and MH1) along the west side and north side of landfill footprint discharging to a 22.3 m^3 capacity North Concrete Pumping Chamber which is not equipped with pumps;

- one (1) approximately 429 m long 150 mm diameter perforated PVC perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending through six (6) 1200 mm diameter pre-cast concrete service manholes (MH6, MH5, MH4, MH3, MH2 and MH1) along the east side and north side of landfill footprint discharging to a 22.3 m^3 capacity North Concrete Pumping Chamber which is not equipped with pumps;

- one (1) approximately 393 m long 200 mm diameter perforated PVC perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending along the west side and south side of landfill footprint discharging to a leachate pumping station described below;

- one (1) approximately 296 m long 200 mm diameter perforated PVC perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending along the east side and south side of landfill footprint discharging to a leachate pumping station described below;

- one (1) side slope riser leachate pumping station equipped with two (2) 80 USGPM capacity submersible pumps and a sump with bottom dimension of 2 m x 2 m filled with 50 mm gravel, discharging to a leachate lagoon described below;

- one (1) 16,245 m^3 storage capacity leachate lagoon, lined with clay and HDPE synthetic liner, located north of the landfill footprint used for temporary storage of leachate or leachate contaminated stormwater until dispose off site to a pre-approved sewage treatment plant;

- one (1) leachate storage lagoon located west of the landfill footprint used for collecting leachate and stormwater runoff from a composting facility until it is used for composting operations or disposed off-site to a pre-approved sewage treatment plant;

- including all controls and associated appurtenances.

SEWAGE WORKS APPROVED ON OCTOBER 21, 1991:

Stormwater Management Pond - SWM Pond No. 1

A stormwater management pond constructed on a site approximately 750 m north of Beechwood Road and north of the fill area for a 25 year design storm having a minimum storage volume of 228 m^3 to retain surface runoff from an area of 3.38 ha (consisting of fill area) and to discharge at a rate of 70 L/s via a 375 mm diameter outlet pipe (fitted to a drop inlet pipe structure) to a Headwater Tributary of Marysville Creek (Intermittent), together with a drawdown structure, a 1200 mm diameter drop inlet pipe, a 3.5 m wide emergency spill-way channel, rock baffle, erosion and silt control protection;

Stormwater Management Pond - SWM Pond No. 2

A stormwater management pond constructed on a site approximately 750 m north of Beechwood Road and northwest of the fill area for a 25 year design storm having a minimum storage volume of 332 m^3 to retain surface runoff from an area of 4.94 ha (consisting of fill area) and to discharge at a rate of 103 L/s via a 375 mm diameter outlet pipe (fitted to a drop inlet pipe structure) to a Headwater Tributary of Marysville Creek (Intermittent), together with a drawdown structure, a 1200 mm diameter drop inlet pipe, a 3.5 m wide emergency spill-way channel, rock baffle, erosion and silt control protection;

all in accordance with the information submitted by Henderson Paddon and Associates Limited Consulting Engineers and the following documents listed in Schedule 'A'.

For the purpose of this environmental compliance approval, the following definitions apply:

"*Approval* " means this Environmental Compliance Approval and any schedules attached to it, and the application .

"*By-pass"* means any discharge from the *Works* that does not undergo any treatment before it is discharged to the environment;

"*Director"* means a person appointed by the Minister pursuant to section 5 of the *EPA* for the purposes of Part II.1 of the *EPA*.

"*District Manager* " means the District Manager of the Kingston District Office;

"*EPA"* means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended.

"*Ministry"* means the ministry of the government of Ontario responsible for the *EPA* and *OWRA* and includes all officials, employees or other persons acting on its behalf.

"*Owner"* means Waste Management of Canada Corporation and its successors and assignees;

"*OWRA* " means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended.

"Substantial Completion" has the same meaning as *"substantial performance"* in the Construction Lien Act; and

"*Works"* means the sewage works described in the *Owner* 's application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval.*

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

I - GENERAL

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval* , the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Approval* .

(3) Where there is a conflict between a provision of any submitted document referred to in this *Approval* and the Conditions of this *Approval* , the Conditions in this *Approval* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Approval* are severable. If any requirement of this *Approval*, or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this *Approval* shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Approval* will cease to apply to those parts of the *Works* which have not been constructed by August 19, 2013.

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Within one year of the *Substantial Completion* of the *Works*, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date

through revisions undertaken from time to time and a copy shall be retained at the *Works* or at operational office of the *Owner* for the operational life of the *Works* .

5. BY-PASSES

(1) Any *By-pass* of sewage from any portion of the *Works* is prohibited, except where:

(a) it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(b) the *District Manager* agrees that it is necessary for the purpose of carrying out essential maintenance and the *District Manager* has given prior written acknowledgment of the *By-pass* ; or

(2) The *Owner* shall maintain a logbook of all *By-pass* events which shall include, at a minimum, the time, location, duration, quantity of *By-pass* , the authority for *By-pass* pursuant to subsection (1), and the reasons for the occurrence.

II - LEACHATE COLLECTION AND DISPOSAL SYSTEM

6. LEACHATE MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works* , carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the leachate stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

(a) Monthly means once every month;

(b) Quarterly means once every three months;

(c) Semi-annually means once every six months; and

(d) Annually means once every twelve months;

(3) **Leachate grab samples** shall be collected from a designated sampling location at the indicated

monitoring frequency and analyzed for each parameter listed in Table 1 and all results recorded:

Table 1 Leachate Monitoring Sampling Location: North Pumping Chamber		
Sampling Frequency: Quarterly		**Sampling Frequency: Annually**
Parameter	**Parameter**	**Parameter**
Alkalinity	Arsenic	Silver
Dissolved Organic Carbon (DOC)	Cadmium	Aluminum
Hardness	Chromium	Boron
pH	Cobalt	Barium
Total Ammonia Nitrogen	Copper	Beryllium
Nitrate Nitrogen	Mercury	Calcium
Nitrite Nitrogen	Molybdenum	Sodium
Total Kjeldahl Nitrogen	Nickel	Magnesium
Phenols	Lead	Manganese
PAHs	Selenium	Iron
BTEX	Zinc	Total Phosphorus
USEPA 624		Conductivity
		Hydrogen Sulphide
		Sulphate
		BOD5
		Total Trihalomethanes (THM)

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions; and

(d) the Environment Canada publications "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" (July 1990) and "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia

magna" (July 1990), as amended from time to time by more recently published editions.

(5) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval* .

7. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Approval* are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator training, including training in all procedures and other requirements of this *Approval* and the *Act* and regulations, process controls and alarms.

(2) By February 19, 2009, the *Owner* shall prepare an operations manual, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works* ;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works* ;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager* ; and

(f) procedures for receiving, responding and recording public complaints, including recording any follow up actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the *Works* or *Owner* 's Head Office for the operational life of the *Works* . Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(4) The *Owner* shall maintain a logbook to record and report the volume of leachate disposed off-site, the date, and the name of the receiving sewage treatment plant;

III - STORMWATER MANAGEMENT FACILITY

8. MONITORING AND RECORDING

The *Owner* shall carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) The *Owner* shall collect stormwater grab samples from the following designated sampling locations at a **monthly** sampling frequency during spring and fall (**March, April, May, September, October,** and **November** and analyse for the parameters listed in Table 2;

Table 2
Stormwater and Surface Water Monitoring
Sampling Location: SWM Ponds No. 1, No. 2, and No. 3

Parameter	Parameter	Field Parameter
pH	Aluminum	pH
Alkalinity	Arsenic	Temperature
Hardness	Barium	Conductivity
Biological Oxygen Demand (CBOD5)	Boron	
Un-ionized Ammonia	Cobalt	
Total Ammonia Nitrogen	Beryllium	
Total Kjeldahl Nitrogen	Cadmium	
Nitrate Nitrogen	Chromium	
Total Phosphorus	Copper	
Total Suspended Solids	Iron	
Total Dissolved Solids	Mercury	
Total Organic Carbon	Nickel	
Chloride	Potassium	
Chemical Oxygen Demand (COD)	Sodium	
Phenols	Selenium	
BTEX	Silver	
Naphthalene	Zinc	

(3) The *Owner* shall collect stormwater grab samples from **SWM Ponds No. 1, No. 2, and No. 3** sampling locations at a **Quarterly** frequency and conduct acute lethality tests for Daphnia magna and Rainbow Trout;

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of

precedence, to the methods and protocols specified in Condition 6 (4);

(5) The measurement frequencies specified in subsection (2) in respect to any parameter are minimum requirements which may, after two (2) years of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.

(6) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval* at the *Works* or *Owner* 's Head Office.

9. OPERATION AND MAINTENANCE

(1) Within six (6) months of the issuance date of this *Approval* , the *Owner* shall prepare a "Stormwater Contingency and Remedial Action Plan" for the *Works* and submit to the *District Manager* for approval.

(2) The *Owner* shall operate the *Works* (**SWM Pond No. 1**, **SWM Pond No. 2**, and **SWM Pond No. 3**) in a **normally open position**.

(3) Using the monitoring results obtained under Condition 8 (3), the *Owner* shall ensure that the stormwater runoff discharged from the *Works* (**SWM Pond No. 1**, **SWM Pond No. 2** , and **SWM Pond No. 3**) is not acutely lethal to Daphnia *magna* and Rainbow Trout.

(4) In the event that monitoring results obtained under Condition 8 (3) show that the stormwater is acutely lethal either to Daphnia *magna* or Rainbow Trout, then, the *Owner* shall resample within two (2) weeks period after receiving the lab results to confirm the toxicity results.

(5) In the event that the toxicity results **are not confirmed** during the second round of sampling conducted under Condition 9 (4), then, normal stormwater monitoring shall be resumed.

(6) In the event that the toxicity results **are confirmed** after the second round of sampling conducted under Condition 9 (4), the *Owner* shall operate the *Works* in a **normally closed position**, notify the *District Manager* forthwith, and conduct acute lethality tests for Daphnia *magna* and Rainbow Trout at **a monthly frequency**.

(7) While operating the *Works* in a **normally closed position**, the *Owner* shall implement the "Stormwater Contingency and Remedial Action Plan" prepared under Condition 9 (1) and continue conducting the toxicity monitoring program required under Condition 9 (6).

(8) The *Owner* shall resume operating the *Works* in a **normally open position** if toxicity monitoring results from **two (2) consecutive sampling events** conducted under Condition 9(6) show that the stormwater is not acutely lethal to Daphnia *magna* and Rainbow Trout.

(9) Discharge of contaminated stormwater from the *Works* to storm sewer/surface water is prohibited, except where it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(10) The *Owner* shall prepare an operations manual prior to the commencement of operation of the *Works* , that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works* ;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works* ;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager* ; and

(10) The *Owner* shall maintain the operations manual current and retain a copy at the *Works* or *Owner* 's Head Office for the operational life of the *Works* . Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(11) The *Owner* shall maintain a record of the date and the estimated volume of leachate contaminated stormwater disposed off site under the approved "Stormwater Contingency and Remedial Action Plan" for the *Works* .

(12) The *Owner* shall notify the *District Manager* orally, as soon as possible, and in writing within seven days of any discharge of leachate contaminated stormwater to receiving surface water including an assessment of the relative extent of leachate contamination, estimated volume of stormwater discharged, and proposed or completed remedial actions.

(13) The *Owner* shall inspect the *Works* (**SWM Ponds**) at least once a year and, if necessary, clean and maintain the *Works* to prevent the excessive build-up of sediments and/or vegetation.

(14) The *Owner* shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the site and/or *Owner's* operational headquarter for inspection by the *Ministry* . The logbook shall include the following:

(a) the name of the *Works* ;

(b) the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed; and

(c) the volume of contaminated stormwater disposed off-site, the date, and the name of the receiving sewage treatment plant;

IV - GENERAL

10. REPORTING

(1) Ten (10) days prior to the date of a planned *By-pass* being conducted pursuant to Condition 5 and as soon as possible for an unplanned *By-pass* , the *Owner* shall notify the *District Manager* (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the *By-pass* .

(2) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within 10 working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by product, intermediate product, oils, solvents, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(3) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(4) The *Owner* shall prepare on an annual basis, and submit upon request, a performance report within ninety (90) days following the end of the calendar year being reported upon. The first such report shall cover the period following the commencement of operation of the *Works* and subsequent reports shall be prepared to cover successive calendar years following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all stormwater monitoring data and a comparison to the Provincial Water Quality Objectives (PWQO), including an overview of the success and adequacy of the *Works* ;

(b) a summary of the monthly quantity of leachate disposed off site and corresponding average leachate quality;

(c) a description of any operating problems encountered and corrective actions taken;

(d) a summary of all maintenance carried out on any major structure, equipment,

apparatus, mechanism or thing forming part of the *Works* ;

(e) a summary of the calibration and maintenance carried out on all leachate monitoring equipment; and

(f) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(g) a summary of all *By-pass* , spill or abnormal discharge events; and

(h) any other information the *District Manager* requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Approval* and the practice that the *Approval* is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the *Owners* their responsibility to notify any person they authorized to carry out work pursuant to this *Approval* the existence of this *Approval* .

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Approval* and continue to operate the *Works* in compliance with it.

4. Condition 4 is included to ensure that the *Works* are constructed in accordance with the *Approval* and that record drawings of the *Works* "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to *By-pass* could result in greater injury to the public interest than the *By-pass* itself where a *By-pass* will not violate the approved leachate requirements, or where the *By-pass* can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the *Ministry* to take action in an informed manner and will ensure the *Owner* is aware of the extent and frequency of *By-pass* events.

6. Conditions 6 and 8 are included to enable the *Owner* to evaluate and demonstrate the performance of the *Works* , on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives specified in the *Approval* and that the *Works* does not cause any impairment to the receiving watercourse.

7. Conditions 7 and 9 are included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, damage to any property or injury to any person is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the *Owner* and made available to the *Ministry* .

8. Condition 10 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Approval,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

SCHEDULE 'A'

1. Application for the sewage works dated March 20, 1990, signed by 171496 Canada Inc., F.C. Ford, P. Eng., Henderson, Paddon and Associates and Township of Richmond.

2. Report entitled "Tricil Limited Landfill site parts of Lots 1, 2 and 3, Concession IV, Township of Richmond, County of Lennox and Addington" dated September 1988, prepared by Henderson Paddon and Associates Limited.

3. Letter dated July 19, 1990, signed by Dick Van Wyck, Legal Counsel, Laidlav Waste System, addressed to Ranee Mahalingam, Review Engineer, Ministry of the Environment.

4. Letter dated September 6, 1990, signed by J. M. Tomlinson. P.Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingam, Approvals Branch, Ministry of the Environment, together with revised section entitled "Stormwater management facilities" of the report entitled "Tricil Limited Landfill Site Parts of Lots 1, 2 and 3, Concession IV, Township of Richmond, County of Lennox and Addington" dated September 1988, prepared by Henderson Paddon and Associates Limited.

5. Letter dated September 6, 1990, signed by Jay Clark, P.Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingam, P. Eng., Review Engineer, Approvals Branch, Ministry of the Environment.

6. Letter dated April 29, 1991, signed by Ranee Mahalingam. P.Eng., Review Engineer, Approvals Branch, Ministry of the Environment, addressed to J. K. Tomlinson. P.Eng., Henderson Paddon and Associates Limited.

7. Letter dated May 23, 1991, signed by Jay Clark, P.Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingam, P.Eng., Review Engineer, Approvals Branch, Ministry of the Environment.

8. Minutes of the meeting held at Ministry of the Environment, 250 Davisville Avenue, Toronto, on June 25, 1991.

9. Letter dated July 24, 1991, signed by J. M. Tomlinson, P.Eng.. Henderson Paddon and Associates Limited, addressed to Bruce W. Metcalfe, Surface Water Technologist, Southeastern Region, Ministry of the Environment.

10. Letter dated July 25, 1991, signed by Bruce W. Metcalfe, Surface Water Technologist, Southeastern Region, Ministry of the Environment, addressed to J. M. Tomlinson, P.Eng., Henderson Paddon and Associates Limited.

11. Letter dated July 29, 1991, signed by J. M. Tomlinson, P. Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingan, Approvals Branch, Ministry of the Environment, enclosing a copy of the revised application and revised drawings No. 8570A (1, 2, 3, 4) and 8570 -7.

12. Application for Approval of Sewage Works dated May 19, 2011, submitted by Waste Management of Canada and prepared by Genivar Inc., Owen Sound, Ontario.

SCHEDULE 'B'

1. "Final Report - 2007 Annual Monitoring Report, Waste Management of Canada Richmond Landfill, Town of Napanee, Ontario" dated March 2008, prepared by Water and Earth Science Associates Ltd. (WESA), Kingston, Ontario.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 5268-7E8LJW issued on August 19, 2008

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 10th day of January, 2012

Ian Parrott, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

SH/
c: District Manager, MOE Kingston - District
Jeff Armstrong, GENIVAR Inc.

APPENDIX

A-3 *CERTIFICATE OF APPROVAL (INDUSTRIAL SEWAGE) NO. 4 – 0129-64-956 (OIL/SEDIMENT INTERCEPTOR), DATED JANUARY 24, 1995*

Ontario

Ministry of Environment and Energy

Ministère de l'Environnement et de l'Énergie

CERTIFICATE OF APPROVAL
INDUSTRIAL SEWAGE
NUMBER 4-0129-94-956

Laidlaw Waste Systems (Canada) Ltd.
3410 South Service Road
Burlington, Ontario
L7R 3Y8

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

Establishment of sewage works for the collection, transmission, treatment and disposal of stormwater from Laidlaw Landfill, Richmond Township, Ontario, consisting of the following:

- collection and transmission of stormwater and other drainage from a petroleum hydrocarbon contaminated soils storage area of 3,200 square metres, with collected drainage discharging at a maximum rate of 15,000 Litres per hour, via a catch basin and 150 millimetre diameter piping to a three chambered oil/sediment interceptor,

- one oil interceptor with three interconnected chambers, with each chamber having dimensions of 1.15 metres length, 1.34 metre width, and a liquid depth of 0.925 metres, discharging via 150 millimetre diameter piping to the sediment control ditch leading to the downstream sedimentation pond,

- all other controls, electrical equipment, instruments, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works,

all in accordance with the Application for Approval of Industrial Sewage Works dated November 11, 1994 signed by J. Pullen, P.Eng. (Regional Manager, Engineering and Compliance), Laidlaw Waste Systems (Canada) Ltd. ("the Owner"), and all supporting documentation and information.

You are hereby notified that this approval is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. OPERATION

(1) The Owner shall prepare a draft operations manual prior to the commencement of operation of the works and shall revise and implement the operations manual within six (6) months of the commencement of operation of the works.

(2) The Owner shall ensure that both the draft and revised manuals include as a minimum:

(a) operating procedures for routine operation of the works, including but not limited to, routine inspection of the oil interceptor chambers, and removal of accumulating solid and liquid wastes;

(b) operating procedures for operation of the works during spills, fires, equipment malfunction, power outages, and other emergency or abnormal operating conditions, including notification procedures for the Ministry;

(c) best management practices to minimize contaminant discharges to the oil interceptor; and,

(d) any other procedures the Owner deems necessary for the proper operation of the works.

(3) The Owner shall maintain the operations manual, as revised from time to time, at the location of the works for so long as it is in operation, and shall make the manual available to Ministry personnel for inspection and copying, upon request.

(4) The Owner shall keep the operations manual up to date through revisions undertaken from time to time, so as to reflect any changes in described operation and maintenance procedures for the works or any newly introduced operation and maintenance procedures made necessary by good engineering practice, this certificate or the requirements of the Ministry.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition No. 1 is included to ensure certain operation procedures are followed to prevent deleterious effects on the environment.

You may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the sewage works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario.
M4V 1N3

AND

The Director,
Section 53, Ontario Water Resources Act,
Ministry of Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario.
M4S 1H2

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 24th *day of* January 1995

R. P. Cornelius, P. Eng.
Director
Section 53
Ontario Water Resources Act

AA/pm

cc District Manager, MOEE Kingston District Office

APPENDIX

A-4 *CERTIFICATE OF APPROVAL NO. A710003 (SOIL RECYCLING), DATED DECEMBER 20, 1993*

Ministry of the Environment | Ministère de l'Environnement

tario

PROVISIONAL CERTIFICATE OF APPROVAL FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE DE DÉCHARGE

Provisional Certificate Number A710003
Certificat provisoire no.

Under the Environmental Protection Act and Regulations, and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:
Aux termes de la Loi sur la protection de l'environnement et des règlements et sous réserve des restrictions qui y sont stipulées, le présent certificat provisoire d'autorisation est délivré à:

Laidlaw Waste Systems (Canada) Ltd.
3410 South Service Road
BURLINGTON, Ontario
L7R 3Y8

the use and operation of a waste processing facility

.11 in accordance with the plans and specifications:

1. Application for a Certificate of Approval for a Waste Disposal Site (Processing) dated August 30, 1993.

2. Letter from Laidlaw Waste Systems Ltd. to the Ministry of Environment and Energy, dated July 12, 1993, briefly describing the proposal for recycling petroleum contaminated soils and listing supporting documentation.

3. Letter from Laidlaw Waste Systems Ltd. to the Ministry of Environment and Energy, dated July 12, 1993, explaining the soil recycling process. Supporting information includes District Office Notification Form - Mobile Soil Reclamation, Certificate of Insurance, letter of credit, site plan and layout drawings, and detail drawings of sediment/oil interceptor system for quality control of leachate run-off.

4. Letter and supporting documentation from Laidlaw Waste Systems Ltd. to the Ministry of Environment and Energy dated November 5, 1993 providing additional information on emergencies and contingencies, public information (including public notice and newspaper advertisement), hours of operation, and a monitoring plan for the soil storage pad at the Laidlaw landfill site in Richmond Township.

5. Memo to the Ministry of Environment and Energy from Laidlaw Waste Systems Ltd. dated November 9, 1993, providing list of property owners which received a hand delivered public notice explaining the proposal.

6. Letter from the Richmond-Tyendinaga Environmental Association to the Ministry of Environment and Energy dated September 23, 1993 providing support for the soil recycling proposal.

7. Letter from the Township of Richmond to the Ministry of Environment and Energy dated October 8, 1993 and Resolution No. 316/93, dated October 4, 1993, providing Council's support for the proposal.

Ontario Ministry of Environment and Energy Provisional Certificate of Approval for a Waste Disposal Site A210222 dated September 18, 1992, or as amended.

). Ontario Ministry of Environment and Energy Provisional Certificate of Approval for a Waste Management System A840681 dated March 18, 1992, or as amended.

.0. Ontario Ministry of Environment and Energy Certificate of Approval (Air) Number 8-3212-88-919 dated April 23, 1992, or as amended.

ocated in: Township of Richmond
Part of Lot 2, Concession IV
(Beechwood Road)

nd is subject to the following definitions and conditions:

efinitions:

ertificate" means the entire certificate of approval including its nedules, if any, issued in accordance with Section 27, Part V of the onmental Protection Act;

"Director" means Director of the Southeastern Region of the Ministry or his appointee;

"District Manager" means the District Manager of Kingston District Office, Southeastern Region of the Ministry;

"Ministry" means the Ontario Ministry of Environment and Energy;

"Owner" means Laidlaw Waste Systems (Richmond) Ltd.;

"Operator" means Laidlaw Waste Systems (Canada) Ltd.; its officers, employees, agents or contractors;

"Site" means the area(s) on landfill site, Certificate of Approval No. A371203, to be used by the processing facility described in this Certificate.

General Conditions

1. The requirements of this Certificate are imposed pursuant to Part V of the Environmental Protection Act. The issuance of this Certificate in no way abrogates the operator's legal obligations to take all reasonable steps to avoid violating other applicable provisions of this legislation and other legislation and regulations.

2. (1) The requirements of this Certificate are severable. If any requirement of this Certificate, or the application of any requirement of this Certificate to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this Certificate shall not be affected thereby.

   (2) In all matters requiring the interpretation and implementation of this Certificate, the conditions of the certificate shall take precedence, followed in descending order by the application and the documentation, referred to in this Certificate, which is submitted in support of the application.

3. The operator must ensure compliance with all the terms and conditions of this Certificate. Non-compliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement.

4. (1) The operator shall, forthwith upon the request of the Director or District Manager, furnish any information requested concerning compliance with this Certificate including any records required to be kept by this Certificate.

(2) In the event the operator provides to the Ministry information, records, documentation of notification in accordance with this Certificate,

(a) the receipt of said information by the Ministry;

(b) the acceptance by the Ministry of the information's completeness or accuracy; or,

(c) the failure of the Ministry to prosecute the operator, or to require the operator to take any action, under this Certificate of any statute or regulation in relation to said information;

shall not be construed as the approving, excusing or justifying by the Ministry of any act or omission of the operator relating to said information, amounting to non-compliance with this Certificate or any statute or regulation.

(3) All records referred to in this Certificate shall be retained on file in a secure manner for a period not less than two years.

5. The owner/operator shall allow Ministry personnel, or a Ministry authorized representative(s) to:

(1) carry out any and all inspections authorized by Section 156, 157 or 158 of the Environmental Protection Act, as amended from time to time, of any place to which this Certificate relates; and, without restricting the generality of the foregoing, to:

(a) enter at reasonable times upon the premises, or the location where the records required by the conditions of this Certificate are kept:

(b) have access to and copy, at reasonable times, any records required by the conditions of this Certificate;

(c) inspect at reasonable times any facilities, equipment, practices, or operations required by the conditions of this Certificate; and

(d) sample and monitor at reasonable times for the purpose of assuring compliance with the conditions of this Certificate.

6. (1) The owner/operator shall notify the District Manager in writing of any change in ownership, name of corporation, the operator, or termination of the facility within 30 days of the change occurring.

(2) In the event the facility is permanently closed a Provincial Officer shall inspect the site and the site shall not be used for any other purpose prior to the inspection and written clearance by the District Manager.

(3) The operator shall ensure that all communications made pursuant to this condition will refer to this Certificate's number.

7. (1) In accordance with Section 19(4) of the Environmental Protection Act this Certificate, the application filed to obtain and documentation referred to in the certificate which may be reasonably necessary for a proper reading and understanding of it, with the exclusion of those documents marked "confidential" by the operator shall be made available for public inspection at the request of any person.

(2) Additional information to that set out in subcondition (1) relating to this Certificate and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act.

8. Except as specified in this Certificate the site shall be operated in accordance with the application for this Provincial Certificate of Approval dated August 30, 1993 and its supporting information described in items 1 to 10 on pages 1 and 2 of this Certificate.

9. (1) The operation of this site is limited to the storage and processing of non hazardous waste soils contaminated with petroleum hydrocarbons, liquid waste classes 211, 212, 213, 221, 222, 251, 252, 253 and 254 as defined in the Ministry of the Environment "New Ontario Waste Classes" document, dated January, 1986 from the Province of Ontario.

(2) No wastes other than those listed in subcondition (1) shall be collected and stored at this site without amendment to this Certificate.

(3) No wastes contaminated with halogenated organics, including PCBs, with concentrations greater than two (2) micrograms per grams shall be accepted at this site.

(4) No waste mixing or diluting with uncontaminated soil shall occur at the site. No waste mixed or diluted with uncontaminated soil shall be accepted at the site.

(5) No users outside the areas listed in subcondition (1) shall use this site without amendment to this Certificate.

10. (1) The operator shall ensure that site personnel, trained in contingency measures are on duty at all times during normal operating hours or during any additional hours the facility may be open. Public access to the site shall be restricted.

(2) All site personnel shall have practical knowledge of the waste material to be handled under this Certificate and shall be fully trained and knowledgeable about all aspects of the site operation including the requirements of this Certificate which relate to the work they are doing and their safety on the site.

(3) Prior to operating the site the operator shall prepare an operation manual for use by site personnel which shall contain, but not necessarily be limited to the following:

(a) an outline of the responsibilities of site personnel;

(b) operation and receiving procedures;

(c) storage, handling, sorting and shipping procedures;

(d) contingency procedures to be followed by personnel in the event of fire and other emergencies.

(4) A copy of the manual shall be placed in a central location on the site and this manual shall be accessible to all site personnel during operating hours.

(5) Within 30 days of the issuance date of this Certificate a copy of the operation manual shall be submitted to the District Manager.

11. (1) The operator shall establish a record system for all waste received at the site which shall include, but not necessarily be limited to, the documentation of quantities received and processed at the site each month; source of generation; receiving and shipping dates and volumes of wastes or processed soils shipped to approved markets, transfer/processing facilities and waste landfill sites; and documentation of environmental and other problems experienced in operating this site.

(2) The information collected under subcondition (1) shall be submitted in a report to the District Manager on or before the first day of December during each year of operation or until the Director or the District Manager has given notice in writing that these submissions are no longer required.

12. (1) The operator shall ensure that the site is operated in a safe and secure manner; that the operation of this site does not impede or is impeded by the landfilling operation on which this site is located; and that the wastes are properly handled, contained, stored, tested and processed at the site; so as not to pose a threat to the general public, site personnel and the environment.

(2) The operator shall ensure that wastes received at the facility are processed and moved from the site to approved markets, processing facilities and landfill sites on a regular basis; and that waste processing does not exceed 5,000 tonnes per day and waste storage on site does not exceed 40,000 tonnes.

(3) Notwithstanding Condition 1 the operator shall ensure that the processing operation is in compliance with noise, hours of operation, fire regulations and any other applicable by-laws of the local municipality/regional governments; and the requirements of Ontario Provisional Certificate of Approval for a Waste Disposal Site-A210222; and Ontario Provisional Certificate of Approval for a Waste Management System A840681 described in items 8 and 9 on page 2 of this Certificate.

(4) The operator shall take all necessary measures possible to contain and minimize all emissions, including air emissions caused by the operation of the processing equipment, waste storage and the processed soil storage; and shall comply with Ontario Certificate of Approval (Air) 8-3212-88-919 described in item 10 on page 2 of this Certificate; and all other applicable legislation governing emissions.

(5) Any waste water collected in the catchment basin for the soil storage pad described in item 3 on page 1 of this Certificate shall be disposed of in a proper manner under Section 53 of the Ontario Water Resources.

(6) Only waste processing equipment as approved under Certificates of Approval A210222 and 8-3212-88-919 described in items 8 and 10 on page 2 of this Certificate shall be used at this site.

13. The local fire department shall be informed of the processing facility and this Certificate.

14. (1) Processed waste which contains Total Volatile Hydrocarbons above (100) micrograms per gram which are not reprocessed or soil waste which is not processed shall be taken from the site for disposal to approved landfill sites or to approved transfer or processing sites for further processing shall be transported under a approved waste management system.

(2) Testing of waste soils and processed soils on this site shall be carried out as specified in Certificates of Approval A210222 and 8-3212-88-919 described in items 8 and 10 on page 2 of this Certificate.

15. This Certificate expires with the termination of the site; when all the wastes have been removed from the site; and the restoration of the site has been approved, in writing, by the District Manager.

16. (1) Within 90 days of the date of this Certificate the operator shall provide financial security for the closure of the site in an amount acceptable to the Director. The security can be in the form of a fund, bond, an irrevocable letter of credit or any other form as may be acceptable to the Director. The amount of financial assurance shall be established based on current costs for cleaning up the site and the assessed value of the fund, bond, or letter of credit shall be approved by the Director, in writing, before being submitted to the Ministry. The assessed value submitted to the Director for approval shall be an independent estimate which shall include, but not necessarily be limited to:

i) trucking, disposal and labour costs for removal of all waste from the site;

ii) costs of equipment dismantling and cleaning on the site.

iii) any legal and contractual costs associated with the closure of the site.

(2) In the event the financial assurance is scheduled to expire or notice is received that it will not be renewed and a replacement in a form satisfactory to the Director is not received at least 60 days before the expiry or renewal date, the operator shall forthwith replace it with a cash deposit.

(3) The operator shall review the closure costs as specified in subcondition (1) on a yearly basis and shall increase, or may decrease the financial assurance when instructed, in writing, by the Director. A copy of the review assessment shall be provided in the report specified in Condition 11(2).

(4) The operator shall at all times while the site is operating maintain the ten million dollars ($10,000,000) third party liability insurance described in item 3 on page 1 of this Certificate and a copy of the policy shall be submitted to the Director within 30 days of the date of this Certificate.

17. The obligations imposed by the terms and conditions of this Certificate of Approval are obligations of due diligence.

The reasons for the imposition of these condition are as follows:

1. Conditions 1, 2, 3, 4 and 7 are to clarify the legal rights and obligations of this Provisional Certificate of Approval.

2. Condition 5 is to ensure that the appropriate Ministry staff have ready access to the waste disposal site to inspect the operations that are approved under this Provisional Certificate of Approval. The condition is supplementary to the powers of entry afforded a Provincial Manager pursuant the Environmental Protection Act, as amended.

3. Conditions 6, 8 and 15 are to ensure that the waste disposal site is operated in accordance with the application for this Certificate and supporting information and not under any name or in any way which the Director has not been asked to consider; and to ensure the property is cleaned up and restored to the satisfaction of the Ministry prior to closure.

4. Condition 9 is to ensure that this site is used only to collect, handle and transport waste within the limitations approved under this Provisional Certificate of Approval.

5. Conditions 10 and 12 are to ensure that the waste recycling site is properly managed in an organized manner by adequately trained persons, in order to prevent environmental detriment; and to ensure the safety of the general public and site personnel.

6. Condition 11 is to provide both the operator and the Ministry of Environment and Energy with an assessment of the waste recycling site.

7. Condition 13 is to ensure fire personnel are informed of the this waste processing site and the type of waste which is stored on this site.

8. Condition 14 is to ensure that the collection, handling, and transportation of all waste materials are conducted in an environmentally acceptable manner in accordance with provincial regulations.

9. Condition 16 is to ensure funds are available from the operator for site closure in the event the site needs to be closed and the operator is not able to do the work; ant to clean up any environmental impairment should the operator be unable or refuse to do so. The use and operation of the site without this condition would not be in the public interest.

10. Condition 17 is required to clarify that the terms and conditions of this Certificate of Approval impose a standard of due diligence and not absolute liability.

You may, by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Certificate , require a hearing by the Board. Section 142 of the Environmental Protection Act, R.S.O. 1990 c. E-19, as amended, provides that the notice requiring the hearing shall state:

1. The portion of the approval or each term or condition in the approval in respect of which the hearing is required, and;

2. The grounds on which you intend to rely at the hearing in relation to <u>each</u> portion appealed.

In addition to these legal requirements, the notice should include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

and the notice should be signed and dated by the appellant.

PROVISIONAL CERTIFICATE OF APPROVAL
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE
DE DÉCHARGE

Provisional Certificate Number A710003
Certificat provisoire no.

This notice should be served upon:

The Secretary
Environmental Appeal Board
112 St. Clair Avenue West
5th Floor
TORONTO, Ontario
M4V 1N3

AND

The Director
Section 39, E.P.A.
Ministry of Environment and Energy
133 Dalton Avenue, Box 820
KINGSTON, Ontario
K7L 4X6

ated at Kingston this 20th day of December, 1993.

Director
Section 39, E.P.A.
Ministry of Environment and Energy

(Pour obtenir une copie du present document certificat en francais, communiquer le Ministère de l'Environnement et de l'Énergie 613 549-4000.)

APPENDIX

A-4-1 AMENDMENT TO CERTIFICATE OF APPROVAL NO. A710003 DATED AUGUST 25, 1999, REGARDING NOTIFICATION OF CHANGE OF NAME

Canadian Waste Services Inc.
1275 North Service Road, Suite 700
Oakville, Ontario
L6M 3G4

You are hereby notified that the Provisional Certificate of Approval No. A 710003, dated December 20, 1993, which was issued to Laidlaw Waste Systems (Canada) Ltd., as amended, is further amended as follow:

The Name and Address of the Company have changed:

FROM: Laidlaw Waste Systems (Canada) Ltd.
3410 South Service Road
Burlington, Ontario
L7R 3Y8

TO: Canadian Waste Services Inc.
1275 North Service Road, Suite 700
Oakville, Ontario
L6M 3G4

The following definitions in "Definitions" are revoked and replaced with:

"Operator" means Canadian Waste Services Inc.; its officers, employees, agents or contractors; and

"Owner" means Canadian Waste Services Inc.

The list of Plans and Specifications is hereby amended, by adding the following:

1. Letter and its attachment dated June 22, 1999, from Michael J. Pullen, Director, Canadian Waste Services Inc., to Geoff Carpentier, Ministry of the Environment (MOE), notifying the Ministry of a change in Corporate name, address and providing list of their officers.

The reason for the imposition of these conditions is as follows:

1. The reason for the above changes is to acknowledge the letter regarding the notification of name and address change, dated June 22, 1999.

All other conditions on the original Certificate and as amended, not affected by this amendment, remain in effect.

Ontario

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary,*
Environmental Appeal Board,
2300 Yonge St., 12th Floor,
P.O. Box 2382
Toronto, Ontario.
M4P 1E4

AND

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario.
M4S 1H2

*Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board by: Tel: (416) 314-4600, Fax: (416) 314-4506 or e-mail: www.ert.gov.on.ca.

DATED AT TORONTO this 25th *day of* August, 1999.

A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act

MK/lf
c: District Manager, Kingston

APPENDIX

A-4-2 AMENDMENT TO CERTIFICATE OF APPROVAL NO. A710003 DATED MARCH 26, 2004, REGARDING NOTIFICATION OF CHANGE OF NAME

Ministry of the Environment
Environmental Assessment and Approvals Branch
Floor 12A
2 St Clair Ave W
Toronto ON M4V 1L5
Fax: (416)314-8452
Telephone: (416) 314-7902

Ministère de l'Environnement
Direction des évaluations et des autorisations environnementales
Étage 12A
2 av St Clair O
Toronto ON M4V 1L5
Télécopieur: (416)314-8452
Téléphone : (416) 314-7902

Ontario

March 26, 2004

Jessica Campbell, Director, Regulatory Affairs & Environmental Compliance
Waste Management of Canada Corporation
5045 South Service Road, Suite 300
Burlington, Ontario
L7L 5Y7

Dear Sir/Madam:

Re: Notification of Change of Name
MOE Reference Number 9673-5XFSHB

The Ministry of the Environment (the "Ministry") acknowledges receipt of your letter dated February 2, 2004 requesting a change in company name:

FROM: Canadian Waste Services Inc.

TO: Waste Management of Canada Corporation

By this letter, the Ministry advises you that your notification of change in company name has been registered in our records for the following Certificate(s) of Approval:

Certificate(s) of Approval for Waste Disposal Sites, Section 27, EPA:

A230901 East Gwillimbury
A230701 Hwy 48
A230201 Aurora
A032006 Blackwell LF
A380103 Kingston - St. Remy Place
A100144 Brant St. Hamilton
A620042 Sarnia MacGregor Rd.
A210237 Mavis, Mississauga
A031810 LaSalle LF
A021601 Ridge LF
8602-4HQQZW Trenton, Chester Rd.
A253001 Tecumseth LF
A100130 Lottridge - Hamilton

A440109 California Ave. - Brockville
A120138 Cushman Rd. - St. Catherines
A030309 Petrolia MRF
A140327 Conrad Place, Waterloo
A580730 Timmins - Deloro
A580731 Timmins - Ogden
A580732 Timmins - German
A170404 Mount Forest - Sligo Rd.
A100139 Lansdowne Ave - Hamilton
A450707 Carleton Place
A010128 Maidstone
A230615 Bowes Rd.
A680243 Esandar
A210622 Brydon
A461002 Ottawa LF
A032203 Warwick LF
A030303 Petrolia LF
A021603 Blenheim LF
A040213 Exeter Rd. - London
A280229 Unwin
A210328 New Toronto
4458-5QTLS3 Timmins MRF
A250111 Saunders Rd - Barrie
1308-5HNRY6 Wentworth - Brampton
A371203 Richmond LF
A710003 Richmond LF

The Ministry will not be providing you with an amended certificate(s) to reflect the change in company name. Therefore, this letter must be appended to its corresponding Certificate(s) of Approval. The name change will be included in any future amended Certificate(s) of Approval.

If you have any questions regarding the above, please contact me at the above phone number.

Yours truly,

Sanja Jankovic

Sanja Jankovic
Application Processor

cc: District Manager, MOE York-Durham
District Manager, MOE, Sarnia
District Manager, MOE Kingston
District Manager, MOE Hamilton
District Manager, MOE Halton-Peel
District Manager, MOE Peterborough

District Manager, MOE Barrie
District Manager, MOE Niagara
District Manager, MOE Guelph
District Manager, MOE Timmins
District Manager, MOE Ottawa
District Manager, MOE Toronto
District Manager, MOE London
Area Manager, MOE Windsor
Area Manager, MOE Belleville

File Storage Number: 230901, 230701, 230201, 032006, 380103, 100144, 620042, 210237, 031810, 021601, 0209, 253001, 100130, 440109, 120138, 030309, 140327, 580730, 580731, 580732, 170404, 100139, 450707, 010128, 230615, 680243, 210622, 461002, 032203, 030303, 021603, 040213, 280229, 210328, 0822, 250111, 0611, 371203

APPENDIX

A-5 ENVIRONMENTAL COMPLIANCE APPROVAL (AIR) NO. 5970-9HKP3V (LANDFILL GAS COLLECTION AND FLARING SYSTEM, INCLUDING CANDLESTICK FLARE) DATED APRIL 29, 2014

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 5970-9HKP3V
Issue Date: April 29, 2014

Waste Management of Canada Corporation
117 Wentworth Crt
Brampton, Ontario
L6T 5L4

Site Location: Richmond Landfill
1271 Beechwood Road, RR #6 Lots 1,2 and 3, Conc.4, Reference Plan 29R-6605, Geo. Twp. of Richmond
Greater Napanee Town, County of Lennox and Addington
K7R 3L1

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

- one (1) enclosed flare used to incinerate the landfill gases from an expanded landfill gas collection system to include landfill gas collection from a maximum of 54 landfill gas wells, 12 leachate manhole and 9 cleanouts, having a landfill gas burning capacity of 0.61 standard cubic metre per second with the combustible levels ranging from 30 to 55 percent by volume. The flare has a maximum heat input of 41 gigajoules per hour, exhausting into the atmosphere through a stack, having an exit diameter of 2.1 metres, extending 12.2 metres above grade;

- one (1) backup candlestick flare used to incinerate the landfill gases from an expanded landfill gas collection system, having a landfill gas burning capacity of 0.354 cubic metres per second with the combustible levels ranging from 30 to 50 percent by volume, exhausting into the atmosphere through a stack, having an exhaust tip diameter of 0.15 metres, extending 6.7 metres above grade;

all in accordance with the Application for Approval (Air & Noise) submitted by Waste Management of Canada Corporation, dated August 5, 2011 and signed by Reid Cleland, Director of Disposal Operations; and the supporting information, including the Emission Summary and Dispersion Modelling Report, submitted by Comcor Environmental Limited, dated September 16, 2011 and signed by Jonathan Petsch, and additional information provided by Comcor Environmental Limited, dated March 21, 2014, and signed by Jonathan Petsch.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above.

2. "CEM System" means the continuous monitoring and recording system used to optimize the operation of the Equipment to minimize the emissions from the Equipment, as described in the Company's application, this Approval, including Schedule "A", and in the supporting documentation referred to herein, to the extent approved by this Approval;

3. "Company" means Waste Management of Canada Corporation that is responsible for the construction or operation of the Facility and includes any successors and assigns.

4. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located.

5. "EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended.

6. "Equipment" means the equipment and processes described in the Company's application, this Approval and in the

supporting documentation referred to herein, to the extent approved by this Approval.

7. "Facility" means the entire operation on the property where the Equipment is located.

8. "Manual" means a document or a set of documents that provides written instructions to staff of the Company.

9. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf.

10. "Publication NPC-232" means the Ministry Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995, as amended.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

PERFORMANCE REQUIREMENTS

1. The Company shall ensure that the noise emissions from the Facility comply with the limits determined in accordance with Publications NPC-232.

2. The Company shall operate the Equipment in such a manner that the minimum temperature shall be 900 degrees Celsius at a point representing a minimum retention time of 0.75 second, at all times the landfill gases are flowing to the enclosed flare system.

3. The Company shall operate the Equipment in such a manner that a flame is present at all times when landfill gases are flowing to the candlestick flare system.

OPERATION AND MAINTENANCE

4. The Company shall ensure that the Facility and the Equipment, including the CEM System, is properly operated and maintained at all times. The Company shall:

(1) prepare, not later than three (3) months after the date of this Approval, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Facility and the Equipment, including:

(a) routine operating and maintenance procedures in accordance with good engineering practices, and as recommended by the Equipment and CEM System supplier;

(b) emergency procedures;

(c) procedures for any record keeping activities relating to the operation and maintenance of the Facility and the Equipment, including the CEM System;

(d) all appropriate measures to minimize noise and odourous emissions from all potential sources;

(e) periodic inspection of the Equipment which is to be conducted by individuals experienced with the Equipment; and timetables for work to be carried out;

(f) procedures for recording and responding to environmental complaints relating to the operation of the Facility; and

(g) operator training which is to be provided by an individual experienced with the Equipment; and,

(2) implement the recommendations of the Manual;

RECORD RETENTION

5. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:

(1) all records on maintenance, repair and inspection of the Facility, the Equipment, and the CEM System;

(2) all records produced by the CEM System;

(3) all records on operator training;

(4) all records on the environmental complaints, including:

(a) a description, time and date of the incident;

(b) wind direction and other weather conditions at the time of the incident; and,

(c) a description of the measures taken to address the cause of the incident and to prevent a similar occurrence in the future, and the outcome of the measures taken; and,

(5) all records of any upset conditions associated with the operation of the Equipment;

NOTIFICATION OF COMPLAINTS

6. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

(1) a description of the nature of the complaint;

(2) the time, date and location of the incident; and,

(3) the wind direction and other weather conditions at the time of the incident;

The reasons for the imposition of these terms and conditions are as follows:

1. Condition Nos. 1 to 3 inclusively are included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.

2. Condition No. 4 is included to emphasize that the Facility must be maintained and operated according to a procedure that will result in compliance with the EPA, the regulations and this Approval.

3. Condition No. 5 is included to require the Company to keep records and to provide information to the Ministry so that compliance with the EPA, the regulations and this Approval can be verified.

4. Condition No. 6 is included to require the Company to notify/report to the Ministry so that compliance with the EPA, the regulations and this Approval can be verified.

SCHEDULE "A"

This Schedule "A" forms part of this Approval.

PARAMETER:	Temperature (enclosed flare system)
LOCATION:	The sample point for the continuous temperature monitoring and recording system shall be located at a location in the combustion chamber where the minimum retention time of the combustion gases at a minimum temperature of 900 degrees Celsius for at least 0.75 second is achieved.
PERFORMANCE:	The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type:	shielded "K" type thermocouple, or equivalent
Accuracy:	±1.5 percent of the minimum gas temperature

DATA RECORDER:	The data recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 1 minute or better.
RELIABILITY:	The monitoring system shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

PARAMETER:	Temperature (candlestick flare system)
LOCATION:	The sample point for the continuous temperature monitoring and recording system shall be located as close to the combustion zone of the candlestick flare as possible.
PERFORMANCE:	The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type:	shielded "K" type thermocouple, or equivalent
Accuracy:	±1.5 percent of the minimum gas temperature

DATA RECORDER:	The data recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 2 minutes or better.
RELIABILITY:	The monitoring system shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 1355-5LRN9N issued on May 8, 2003

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 29th day of April, 2014

Ian Greason, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AB/
c: District Manager, MOE Kingston - District
Jonathan Petsch, Comcor Environmental Limited

APPENDIX

B LETTERS OF APPROVAL FOR ALTERNATE LEACHATE TREATMENT SITES

Wayt, Noah

From: Darryl Ashe <dashe@cobourg.ca>
Sent: Tuesday, May 3, 2022 12:17 PM
To: Wayt, Noah
Cc: Bill Peeples; Jennifer Leno
Subject: [EXTERNAL] Richmond Landfill

Hi Noah,

It was nice to talk with you earlier. We can accept Richmond Landfill leachate at our 95 Normar Rd location. Our current rate is $14.08/m3. Please contact me at 905-376-0925, to schedule deliveries. Depending on the volumes of leachate from other sites, we most likely can accept leachate when Napanee is unable.

Thank you,
Darryl

Darryl Ashe
Assistant Manager, Environmental Services

The Corporation of the Town of Cobourg
Public Works Division, Environmental Services
95 Normar Road, Cobourg, ON, K9A 4J8
P: 905-372-5539 | cobourg.ca

APPENDIX

C

MEMORANDUM: 2023 STORMWATER MANAGEMENT PONDS AND LEACHATE MONITORING RESULTS, PREPARED BY BLUMETRIC ENVIRONMENTAL INC.

MEMORANDUM

Date: 19 March 2024
To: Noah Wayt (WM)
Cc: Chris Prucha and Chad Moose (WM) and Beverly Minshall, WSP Canada Inc.
From: François Richard and Megan Williamson, BluMetric Environmental Inc.
Project No: 240160-04
Re: 2023 Stormwater Management Ponds and Leachate Monitoring Results
WM Richmond Landfill, Town of Greater Napanee, ON

The purpose of this memorandum is to provide a summary and interpretation of the stormwater and leachate monitoring data collected from the Waste Management of Canada Corporation (WM) Richmond Landfill in 2023, in accordance with Conditions 6 and 8 of Environmental Compliance Approval (ECA) No. 1688-8HZNJG issued January 10, 2012. This memorandum is prepared in accordance with Conditions 10(4)(a) and (b) of the ECA.

STORMWATER MANAGEMENT PONDS

A summary of the stormwater monitoring results is attached in **Table 1**. Samples were collected during three of six events in 2023, conducted in March, April, May, September, October, and November, from the discharge points of each of the three stormwater management ponds: Northeast (NE) Pond, Northwest (NW) Pond and Southwest (SW) Pond. No samples were collected in September, October, or November 2023, as all three ponds were dry throughout the fall.

The results of the chemical analyses are compared to the Provincial Water Quality Objectives (PWQO) in **Table 1** and were consistent with historical results. Consistent to previous years, the concentrations of the following parameters exceeded the PWQO on occasion: aluminum, cobalt, iron, and total phosphorus.

The results from the surface water monitoring program of the receiving waters for these ponds (Marysville Creek and Beechwood Ditch), as reported in the Spring and Fall 2023 Semi-Annual Monitoring Reports submitted to MECP in July 2023 and January 2024, respectively, indicate that

there are no measurable impacts to water quality from landfill-related activities, including operation of the stormwater management ponds.

Samples were also collected from the stormwater management ponds and analyzed for acute lethality of Rainbow Trout (RBT) and Daphnia magna (DM) on a quarterly frequency, in accordance with Condition 8(3) of the ECA. Condition 14.3(vi) of ECA No. A371203[1] for the waste disposal site requires that the Annual Report includes a discussion of the results of the toxicity testing which includes potential impacts to the groundwater by the stormwater management ponds. The results are summarized below. All ponds showed no mortality during all sampling events, with the exception of a 20% mortality rate of RBT at the SW Pond during the June sampling event. This mortality rate is below the requirement of <50%.

Percent Mortality of Rainbow Trout (RBT) and Daphnia Magna (DM) in Stormwater Management Pond Samples, 2023

	March 29, 2023		June 7, 2023		Sept. 12, 2023		Nov. 14, 2023	
	RBT	DM	RBT	DM	RBT	DM	RBT	DM
SW Pond	0	0	20%	0	dry		dry	
NE Pond	0	0	dry		dry		dry	
NW Pond	0	0	0	0	dry		dry	

The acute lethality results from the 2023 samples indicate that the stormwater management ponds were operating as designed and discharging non-lethal effluent to the receiving waters. It is not interpreted that shallow groundwater is impacting the stormwater management ponds. Toxicity should continue to be monitored for all sites.

Based on the 2023 stormwater management data, as well as the results from the semi-annual surface water monitoring program, it is our opinion that the stormwater management ponds at the WM Richmond Landfill are adequate and performing as designed.

LEACHATE MONITORING

The requirements for leachate monitoring under ECA No. 1688-8HZNJG are presented in Condition 6 and Table 1 of the ECA. The leachate monitoring results for 2022 are presented in the attached **Table 2**. The results are indicative of the leachate quality that is disposed off-site.

[1] Note that prior to the March 19, 2021 ECA No. A371203 amendment, this condition was referred to as Condition 14.3(xii)

We trust you will find this evaluation of the 2023 stormwater and leachate monitoring data for the WMCC Richmond Landfill site to be satisfactory. If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully submitted,
BluMetric Environmental Inc.

François A. Richard, P.Geo., Ph.D
Senior Hydrogeologist

Megan Williamson, B.Sc.
Environmental Scientist

Encl.
Tables

Ref: 2023 Ponds-Leachate Memo_20240319.docx

TABLES

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 1: 2023 Pond Sampling Results

Parameter	Units	*PWQO*	NE Pond 2023-03-29	NW Pond 2023-03-29	SW Pond 2023-03-29	NE Pond 2023-04-19	NW Pond 2023-04-19	SW Pond 2023-04-19	NE Pond 2023-05-16	NW Pond 2023-05-16	SW Pond 2023-05-16
Alkalinity	mg/L		250	300	170	390	340	200	470	370	220
Aluminum	mg/L	*0.075*	0.021	0.029	0.037	0.021	**0.51**	< 0.02	0.072	**0.77**	**0.68**
Ammonia	mg/L		< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	0.25	0.18	0.3
Unionized Ammonia	mg/L	*0.02*	< 0.00061	< 0.00061	< 0.00061	< 0.00061	< 0.00061	< 0.00061	< 0.00061	0.0011	0.00083
Arsenic	mg/L	*0.1*	< 0.001	< 0.001	< 0.001	0.001	0.001	< 0.001	0.001	0.001	< 0.001
Barium	mg/L		0.054	0.074	0.032	0.062	0.092	0.046	0.074	0.076	0.068
Benzene	mg/L	*0.1*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Beryllium	mg/L	*1.1*	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006
Biochemical Oxygen Demand	mg/L		< 2	< 2	< 2	2	3	< 2	2	3	< 2
Boron	mg/L	*0.2*	0.074	0.061	0.027	0.048	0.065	0.027	0.073	0.13	0.054
Cadmium	mg/L	*0.0002*	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chemical Oxygen Demand	mg/L		17	20	12	51	56	19	35	46	27
Chloride	mg/L		13	34	13	19	59	20	15	27	15
Chromium (III)	mg/L	*0.0089*	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (Total)	mg/L		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (VI)	mg/L	*0.001*	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt	mg/L	*0.0009*	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0007	< 0.0005	**0.001**	0.0006	0.0006
Copper	mg/L	*0.005*	< 0.002	0.003	< 0.002	< 0.002	0.003	0.002	< 0.002	< 0.002	< 0.002
Dissolved Oxygen	mg/L	.	2.86	5.61	3.98						
Ethylbenzene	mg/L	*0.008*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Field Conductivity	µS/cm		500	562	354	754	866	475	1081	773	485
Field Temperature	°C		3.2	4.7	4.8	4.9	4.9	6.9	10	13.9	13.5
Hardness	mg/L		260	310	180	400	370	210	430	310	210
Iron	mg/L	*0.3*	< 0.1	< 0.1	< 0.1	**1.2**	**1.1**	0.12	**3.8**	**0.99**	**1.3**
m+p-Xylene	mg/L	*0.002*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Mercury	mg/L	*0.0002*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Naphthalene	mg/L	*0.007*	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Nickel	mg/L	*0.025*	0.003	0.003	< 0.001	0.002	0.004	0.001	0.002	0.003	0.002
Nitrate	mg/L		< 0.1	< 0.1	0.13	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-Xylene	mg/L	*0.04*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
pH (Field)	-	*6.5-8.5*	7.22	7.3	7.19	7.01	7.21	6.95	6.5	7.3	6.98
pH (Lab)	-	*6.5-8.5*	7.92	8.02	7.68	8.09	8.24	8.04	7.54	7.78	7.63
Phenols	mg/L	*0.001*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Phosphorus (total)	mg/L	*0.03*	< 0.03	< 0.03	< 0.03	**0.073**	**0.057**	< 0.03	**0.087**	**0.055**	**0.06**
Potassium	mg/L		3.3	4	2.1	4	5.1	2.9	2.5	5.2	2.8
Selenium	mg/L	*0.1*	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Silver	mg/L	*0.0001*	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Sodium	mg/L		22	40	13	31	54	18	34	47	16
Toluene	mg/L	*0.0008*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Total Dissolved Solids	mg/L		275	370	230	465	490	240	525	380	200
Total Kjeldahl Nitrogen	mg/L		< 0.7	< 0.7	< 0.7	1.2	1.1	< 0.7	0.9	1	< 0.7
Total Organic Carbon	mg/L		5.7	6.4	4.4	15	15	5.8	13	16	8.4
Total Suspended Solids	mg/L		< 10	< 10	< 10	< 10	25	< 10	22	21	24
Total Xylenes	mg/L		< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Zinc	mg/L	*0.03*	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

PWQO: Provincial Water Quality Objectives
Highlighted values indicate PWQO exceeded
Note 1: results for Cr-III and Cr-VI not available

BluMetric Environmental

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 1: 2023 Pond Sampling Results

Parameter	Units	*PWQO*	NE Pond 2023-09-12	NW Pond 2023-09-12	SW Pond 2023-09-12	NE Pond 2023-10-24	NW Pond 2023-10-24	SW Pond 2023-10-24	NE Pond 2023-11-14	NW Pond 2023-11-14	SW Pond 2023-11-14
Alkalinity	mg/L										
Aluminum	mg/L	*0.075*									
Ammonia	mg/L										
Unionized Ammonia	mg/L	*0.02*									
Arsenic	mg/L	*0.1*									
Barium	mg/L										
Benzene	mg/L	*0.1*									
Beryllium	mg/L	*1.1*									
Biochemical Oxygen Demand	mg/L										
Boron	mg/L	*0.2*									
Cadmium	mg/L	*0.0002*									
Chemical Oxygen Demand	mg/L										
Chloride	mg/L										
Chromium (III)	mg/L	*0.0089*									
Chromium (Total)	mg/L										
Chromium (VI)	mg/L	*0.001*									
Cobalt	mg/L	*0.0009*									
Copper	mg/L	*0.005*									
Dissolved Oxygen	mg/L	.									
Ethylbenzene	mg/L	*0.008*									
Field Conductivity	µS/cm										
Field Temperature	°C										
Hardness	mg/L		***DRY***	***DRY***	***DRY***	***DRY***	***DRY***	***DRY***	***DRY***	***DRY***	***DRY***
Iron	mg/L	*0.3*									
m+p-Xylene	mg/L	*0.002*									
Mercury	mg/L	*0.0002*									
Naphthalene	mg/L	*0.007*									
Nickel	mg/L	*0.025*									
Nitrate	mg/L										
o-Xylene	mg/L	*0.04*									
pH (Field)	-	*6.5-8.5*									
pH (Lab)	-	*6.5-8.5*									
Phenols	mg/L	*0.001*									
Phosphorus (total)	mg/L	*0.03*									
Potassium	mg/L										
Selenium	mg/L	*0.1*									
Silver	mg/L	*0.0001*									
Sodium	mg/L										
Toluene	mg/L	*0.0008*									
Total Dissolved Solids	mg/L										
Total Kjeldahl Nitrogen	mg/L										
Total Organic Carbon	mg/L										
Total Suspended Solids	mg/L										
Total Xylenes	mg/L										
Zinc	mg/L	*0.03*									

PWQO: Provincial Water Quality Objectives
Highlighted values indicate PWQO exceeded
Note 1: results for Cr-III and Cr-VI not available

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 2: 2023 Leachate Sampling Results

Quarterly List					
Reading Name	Units	North Chamber 2023-03-29	North Chamber 2023-06-07	North Chamber 2023-09-12	North Chamber 2023-12-01
1,1,1,2-Tetrachloroethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,1,1-Trichloroethane	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
1,1,2,2-Tetrachloroethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,1,2-Trichloroethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,1-Dichloroethane	mg/L	0.00091	< 0.0025	< 0.005	< 0.005
1,1-Dichloroethylene	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
1,2-Dibromoethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,2-Dichlorobenzene (o)	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,2-Dichloroethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,2-Dichloropropane	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
1,3,5-Trimethylbenzene	mg/L	0.0033	< 0.005	< 0.01	< 0.01
1,3-Dichlorobenzene (m)	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
1,4-Dichlorobenzene (p)	mg/L	0.0084	< 0.005	< 0.01	< 0.01
1-Methylnaphthalene	mg/L	0.0004	0.00029	0.00053	0.00031
2-Methylnaphthalene	mg/L	0.00054	0.00037	0.00061	0.00031
Acenaphthene	mg/L	0.00037	0.0003	0.0005	0.00024
Acenaphthylene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Alkalinity	mg/L	1100	780	1500	2700
Ammonia	mg/L	82.4	78.3	202	305
Anthracene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Arsenic	mg/L	0.001	0.002	0.002	0.003
Benzene	mg/L	0.0067	0.0026	0.0066	< 0.005
Benzo(a)anthracene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(a)pyrene	mg/L	< 0.000009	< 0.000009	< 0.000009	< 0.000009
Benzo(b)fluoranthene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(e)pyrene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(g,h,i)perylene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(k)fluoranthene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Biphenyl	mg/L	0.0001	0.000095	0.00015	< 0.0001
Bromodichloromethane	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Bromoform	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Bromomethane	mg/L	< 0.0025	< 0.013	< 0.025	< 0.025
Cadmium	mg/L	< 0.0001	< 0.0001	0.0002	< 0.0001
Carbon Tetrachloride	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Chlorobenzene	mg/L	0.0057	0.0028	0.0061	< 0.005
Chloroethane	mg/L	0.0015	< 0.005	< 0.01	< 0.01
Chloroform	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Chloromethane	mg/L	< 0.0025	< 0.013	< 0.025	< 0.025
Chromium	mg/L	< 0.005	< 0.005	0.011	0.018
Chrysene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Cis-1,2-Dichloroethylene	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Cis-1,3-Dichloropropylene	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Cobalt	mg/L	0.0028	0.0029	0.0073	0.012
Copper	mg/L	0.01	0.014	0.016	0.063
Dibenzo(a,h)anthracene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dibromochloromethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Dichloromethane	mg/L	< 0.0025	< 0.013	< 0.025	< 0.025
Dissolved Organic Carbon	mg/L	35	37	85	140
Ethylbenzene	mg/L	0.017	0.0026	< 0.005	< 0.005
Fluoranthene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluorene	mg/L	0.00019	0.00016	0.00022	0.0001
Hardness	mg/L	730	380	670	770
Indeno(1,2,3-cd)pyrene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Lead	mg/L	0.0008	0.0033	0.0046	0.002
m+p-Xylene	mg/L	0.042	0.011	0.022	0.017
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Molybdenum	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naphthalene	mg/L	0.0069	0.0044	0.0084	0.0054
Nickel	mg/L	0.013	0.012	0.03	0.056
Nitrate	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 2: 2023 Leachate Sampling Results

Quarterly List					
Reading Name	Units	North Chamber 2023-03-29	North Chamber 2023-06-07	North Chamber 2023-09-12	North Chamber 2023-12-01
Nitrite	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	mg/L	0.0094	< 0.0025	< 0.005	< 0.005
Perylene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
pH (Lab)	unitless	7.06	7.23	7.28	7.31
Phenanthrene	mg/L	0.00016	0.00015	0.00023	0.000075
Phenols	mg/L	0.0041	0.0037	0.0082	0.01
Pyrene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Selenium	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Styrene	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Tetrachloroethylene	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Toluene	mg/L	0.015	< 0.005	< 0.01	< 0.01
Total Kjeldahl Nitrogen	mg/L	82	73	190	310
Total Xylenes	mg/L	0.051	0.011	0.022	0.017
Trans-1,2-dichloroethylene	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Trans-1,3-dichloropropylene	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Trichloroethylene	mg/L	< 0.0005	< 0.0025	< 0.005	< 0.005
Trichlorofluoromethane	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Vinyl Chloride	mg/L	< 0.001	< 0.005	< 0.01	< 0.01
Zinc	mg/L	0.053	0.04	0.095	0.2

Annual List		
Reading Name	Units	North Chamber 2023-05-09
Aluminum	mg/L	0.042
Barium	mg/L	0.11
Beryllium	mg/L	< 0.0006
Biochemical Oxygen Demand	mg/L	< 2
Boron	mg/L	0.35
Calcium	mg/L	170
Conductivity	µS/cm	1700
Iron	mg/L	3.3
Magnesium	mg/L	31
Manganese	mg/L	0.63
Phosphorus (total)	mg/L	0.075
Silver	mg/L	< 0.0004
Sodium	mg/L	110
Sulphate	mg/L	77
Sulphide	mg/L	0.04
Total Trihalomethanes	mg/L	< 0.0002

APPENDIX

D

MEMORANDUMS TITLED "NOTIFICATION OF ON-SITE LEACHATE RELEASE, WM RICHMOND LANDFILL, TOWN OF GREATER NAPANEE", PREPARED BY BLUMETRIC ENVIRONMENTAL INC., DATED MARCH 30, 2023 AND JUNE 14, 2023

MEMORANDUM

DATE:	March 30, 2023
TO:	Trevor Dagilis, District Manager, Ministry of the Environment, Conservation and Parks (MECP)
CC:	Craig Dobiech (MECP) Chris Prucha, Noah Wayt and Chad Moose (WMCC)
FROM:	François Richard (BluMetric)
PROJECT NO:	230130-03
SUBJECT:	Notification of On-Site Leachate Release, WM Richmond Landfill, Town of Greater Napanee **Ref: MECP Spill Action Centre Reference Number: 1-33QFLL**

This memorandum is provided on behalf of Waste Management of Canada Corporation (WMCC) in relation to a recent leachate release to surface that has occurred on site. This notice is issued as required by Condition 9.6(a) from the site Environmental Compliance Approval (ECA No. A371203 dated March 19, 2021), in accordance with the procedures set out in the Public Notification Plan (PNP) dated November 2020.

BACKGROUND

The Richmond Landfill is located at 1271 Beechwood Road, Napanee, and has been closed since June 30, 2011. Landfill leachate is collected from two collection points (South Chamber (PS1) and North Chamber (PS2)) located along the perimeter of the waste mound (see **Figure 1**). Leachate is directed to an on-site 3,000 m^3 holding tank and hauled off-site for treatment at the Napanee Wastewater Treatment Plant (WWTP). On occasions when the WWTP is at capacity and cannot accept leachate from the site in sufficient volumes, leachate is hauled to the Cobourg WWTP, which has imposed limits in terms of daily leachate volumes available to WM. Until recently, leachate was also hauled to the Kingston Utilities Ravensview WWTP for treatment; however, the facility informed WM that they are no longer able to accept leachate from the Richmond landfill because of operational concerns.

Despite several unsuccessful attempts over the past several weeks by WMCC to secure additional disposal options, two temporary 80 m^3 emergency holding tanks ("frac tanks") were rented and mobilized to site on Friday, March 24, 2023. One of the tanks was put into use at approximately

5:00 PM on March 24, 2023. The frac tanks were positioned close to the PS3 building load out chamber (near the South Chamber leachate sump (PS1)) and used to temporarily store leachate pumped from pumping station PS3 in order to provide additional storage capacity in the on-site above ground storage tank (AST).

LEACHATE RELEASE

Upon arrival on-site at 8:30 AM on Monday March 27, 2023, BluMetric field personnel observed moisture originating under the in use temporary frac tank. Closer examination revealed a small drip leak on the under belly of the tank. The location of the release is shown on **Figure 1**. Upon discovery and as discussed further below, BluMetric personnel immediately implemented initial corrective actions to stop the release by coordinating with the leachate hauler to transfer leachate from the damaged frac tank to another frac tank already on-site.

Once the release was stopped, BluMetric personnel investigated the area and was able to confirm that the release was limited to the asphalt surface and gravel area immediately adjacent to the temporary frac tanks. The release did not leave the site or enter any stormwater feature. The impacted area was determined based on visual inspection of the rust-colored stains to be relatively limited in lateral extent (approximately 20 m^2). Photo documentation of area of the release is provided as **Attachment A**. Based upon the remaining volume in the tank at the time of discovery, it is estimated that approximately 8.9 m^3 of leachate leaked onto the ground.

INITIAL ACTION PLAN

As discussed above and to mitigate the active release, corrective action measures were undertaken immediately upon discovery by BluMetric personnel. A vacuum truck was mobilized to the site and utilized to transfer leachate from the defective tank into a second emergency frac tank. This was completed by approximately 11:00 AM. Meanwhile, the release was reported through the MECP Spills Action Centre, and the Kingston District Office was notified. As follow-up, MECP Environmental Officer, Craig Dobiech, mobilized to the site at approximately 1:15 PM, to investigate the release.

The area affected is limited and contained. Initial cleanup was completed manually on March 27, 2023, by scooping visually impacted gravel. A local contractor was contacted and visited the site on March 28, 2023, to assess the affected area to determine the proper cleanup activities, scheduled to take place on Thursday March 30, 2023. Since the release is limited to one area, the top layer of visually impacted gravel and soils will be stripped, consolidated into a pile onto a polyethylene sheet and covered with tarps, tested and then disposed of at an approved facility. Once the affected

gravel and soils have been removed, the area will be graded, and new gravel will be laid down to bring this area back to the original grade and condition.

To reduce the potential of any future issues with the use of frac tanks for additional leachate storage, the following measures will be followed:

- All rental frac tanks will be thoroughly inspected upon delivery for any damage, punctures, or degradation before the unit is offload or filled;
- Once the unit filling process begins, site staff will continuously monitoring all visible surfaces of the tank and the surrounding area adjacent to the tank for any visible issues or maladies; and
- Upon completion of filling of the tank, the tank surface and surrounding ground surface will be continuously monitored for one-hour following complete filling of the tank to verify no unforeseen issues occur.

While there is no evidence that the released leachate entered into the storm water drainage system, a sample was collected on March 29, 2023, from Stormwater Pond 3, located south of the location of the release. Additionally, groundwater samples will be collected from nearby monitoring wells included in the environmental monitoring plan (EMP) during the planned upcoming spring sampling event, scheduled to take place in late April or early May, and will be compared against historical results to evaluate potential impacts to groundwater from the release. The cleanup and sampling results will be summarized and provided to the MECP within approximately two weeks after the laboratory results have been received.

CLOSING

We trust the above information is satisfactory. If you have any questions or need further information regarding the completed work, please do not hesitate to contact the undersigned.

Respectfully submitted,
BluMetric Environmental Inc.

Francois Richard, Ph.D., P.Geo.
Senior Hydrogeologist

Encl.

FIGURE

LEGEND

- Leachate Pumping Station
- Release Point
- Property Boundary
- Waterbody
- Building
- Hydro Tower
- Road
- Watercourse
- Overhead Power Line
- Waterbody

Topographic Contours (1 masl)

- Major Contour
- Minor Contour

REV.	DESCRIPTION	YY/MM/DD	BY	CHK
1				

REFERENCES

THIS DRAWING MAY HAVE BEEN REDUCED. ALL SCALE NOTATIONS INDICATED ARE BASED ON 8.5"x11" FORMAT DRAWINGS.

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CLIENT

WASTE MANAGEMENT

PROJECT

WASTE MANAGEMENT RICHMOND LANDFILL LEACHATE RELEASE INVESTIGATION

TITLE

SITE PLAN AND MARCH 2023 RELEASE LOCATION

BluMetric Environmental
The Tower - The Woolen Mill,
4 Cataraqui St.,
Kingston, Ontario, K7K 1Z7
Tel: 613-531-2725
Fax: 613-531-1852
Email: info@blumetric.ca
Web: http://www.blumetric.ca

PROJECT #	DATE
230130-06	March 30, 2023

DRAWN	CHECKED	FIG NO.	REV
GM	FR	01	0

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PHOTOGRAPHS
March 27, 2023

Photograph 1 (March 27, 2023). Frac tank showing evidence of leakage (rust coloured staining on ground).

Photograph 2 (March 27, 2023). Frac tank showing evidence of leakage (rust coloured staining on ground).

Photograph 3 (March 27, 2023). Evidence of leakage following tank removal.

Photograph 4 (March 27, 2023). Evidence of leakage following tank removal.

Photograph 5 (March 27, 2023). Evidence of leakage following tank removal.

MEMORANDUM

DATE:	14 June 2023
TO:	Cathy Chisholm, District Manager, Ministry of the Environment, Conservation and Parks (MECP)
CC:	Craig Dobiech (MECP) Chris Prucha, Noah Wayt and Chad Moose (WMCC)
FROM:	François Richard and Matthew DeGeer (BluMetric)
PROJECT NO:	230130-00
SUBJECT:	Sampling Results Following On-Site Leachate Release, WM Richmond Landfill, Town of Greater Napanee **Ref: MECP Spill Action Centre Reference Number: 1-33QFLL**

This memorandum is provided on behalf of Waste Management of Canada Corporation (WMCC) in relation to a recent leachate release to surface that occurred on site.

BACKGROUND

Leachate at the WM Richmond Landfill is directed to an on-site 3,000 m^3 holding tank and subsequently transported off-site for treatment at the Napanee Wastewater Treatment Plant (WWTP). On occasions when the WWTP is at capacity and cannot accept leachate from the site in sufficient volumes, leachate is hauled to the Cobourg WWTP, which has imposed limits in terms of daily leachate volumes available to WM. Until recently, leachate was also hauled to the Kingston Utilities Ravensview WWTP for treatment; however, the facility informed WMCC that they are no longer able to accept leachate from the Richmond landfill because of operational concerns.

Despite several unsuccessful attempts by WMCC to secure additional disposal options, two 80 m^3 emergency holding tanks ("frac tanks") were rented and mobilized to site on Friday March 24, 2023, to temporarily provide additional storage capacity.

On Monday March 27, 2023, BluMetric field personnel observed moisture originating from under the in-use temporary frac tank. Closer examination revealed a small drip leak on the under belly of the tank. The location of the release is shown on **Figure 1** while photographs of the soil staining observed are attached (see **Photos 1 and 2**). Upon discovery, WMCC reported the spill to the MECP Spill Action Centre and BluMetric personnel immediately implemented initial corrective actions to stop the release by coordinating with the leachate hauler to transfer leachate from the damaged frac tank to the second frac tank already on-site.

Once the leachate transfer was complete and the leakage stopped, BluMetric personnel investigated and were able to confirm that the release was limited to the asphalt surface and gravel/soil area immediately adjacent to the temporary frac tanks. The release did not leave the site or enter any stormwater feature. The impacted area was determined based on visual inspection of the rust-colored stains to be relatively limited in lateral extent (approximately 20 m^2). Based upon the volume in the tank at the time of discovery, it is estimated that approximately 8.9 m^3 of leachate leaked onto the ground. An MECP Environmental Officer visited the site on March 27, 2023 to verify that the release was localized and did not enter surface water or leave the site.

Although there is no evidence that the released leachate entered into the storm water drainage system, a sample was collected on March 29, 2023, from Stormwater Pond 3 ("SW Pond"), located south of the location of the release. Additionally, groundwater samples were collected on March 31, 2023, from monitoring wells M109-2 and M9-3 (**Figure 1**). Surface water and groundwater analytical results are presented in **Tables 1 and 2**, respectively. The results are consistent with historical data at each of these locations. The analytical results indicate that there is no impact resulting from the leachate release from the temporary frac tank.

On March 30, 2023, the soil and gravel identified as impacted (total volume approximately 80 m^3) was excavated and stockpiled onto, and covered with, tarps (see attached **Photo 3**). The area of the excavation was covered with fresh gravel and graded to original condition (see attached **Photo 4**). On March 30, 2023, a soil sample was collected from the stockpiled material for pre-disposal analysis. The soil was removed from site on May 8, 2023, and disposed of at an authorized accepting facility.

CLOSING

We trust the above information is satisfactory. If you have any questions or need further information regarding the completed work, please do not hesitate to contact the undersigned.

Respectfully submitted,
BluMetric Environmental Inc.

François Richard, Ph.D., P.Geo.
Senior Hydrogeologist

Matthew DeGeer, M.Sc., G.I.T.
Geoscientist in Training

Encl.

Table 1: Surface Water Results

Parameter	Units	SW Pond 2022-09-21	SW Pond 2022-10-13	SW Pond 2022-11-22	SW Pond 2023-03-29
General/Inorganic					**Post Release**
Alkalinity	mg/L	210	170	210	170
Ammonia	mg/L	< 0.00061	< 0.00061	0.0023	< 0.00061
Ammonia (unionized)	mg/L	< 2	6	2	< 2
Carbonaceous BOD	mg/L	34	41	33	12
Chemical Oxygen Demand	mg/L	3.12	1.14	2.97	3.98
Chloride	mg/L	29	23	30	13
Dissolved Oxygen	mg/L	3.12	1.14	2.97	3.98
Hardness	mg/L	220	210	220	180
Nitrate	mg/L	0.24	< 0.1	< 0.1	0.13
pH (Field)	unitless	6.51	6.31	6.89	7.19
pH (Lab)	unitless	7.6	7.87	7.46	7.68
Field Conductivity	µS/cm	363	573	552.5	354
Field Temperature	Celsius	14.07	11.1	1	4.8
Phenols	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phosphorus (total)	mg/L	0.035	0.044	< 0.03	< 0.03
Total Dissolved Solids	mg/L	1820	255	260	230
Total Kjeldahl Nitrogen	mg/L	4.4	1.4	4.7	< 0.7
Total Organic Carbon	mg/L	11	11	10	4.4
Total Suspended Solids	mg/L	17	13	< 10	< 10
Metals					
Aluminum	mg/L	0.055	< 0.02	< 0.02	0.037
Arsenic	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Barium	mg/L	0.044	0.035	0.045	0.032
Beryllium	mg/L	< 0.0006	< 0.0006	< 0.0006	< 0.0006
Boron	mg/L	0.04	0.027	0.035	0.027
Cadmium	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chromium (III)	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (Total)	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (VI)	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Iron	mg/L	0.72	< 0.1	< 0.1	< 0.1
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Nickel	mg/L	0.002	0.001	< 0.001	< 0.001
Potassium	mg/L	1	2.5	4.5	2.1
Selenium	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Silver	mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Sodium	mg/L	24	15	22	13
Zinc	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Volatile Organic Compounds (VOCs)					
Naphthalene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
1,4-Dioxane	mg/L				< 0.001
Benzene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Ethylbenzene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
m+p-Xylene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
o-Xylene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toluene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Total Xylenes	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002

Table 2: Groundwater Results

Parameter	Units	M109-2 2020-01-27	M109-2 2023-03-31	M9-3 2022-04-26	M9-3 2022-11-03	M9-3 2023-03-31
General/Inorganic			**Post Release**			**Post Release**
Alkalinity	mg/L	260	250	380	330	330
Conductivity	µS/cm	880	860	810	910	900
Total Dissolved Solids	mg/L	460	440	445	395	470
Ammonia	mg/L	1.57	1.5	0.63	0.93	1.08
Chloride	mg/L	110	120	47	99	96
Dissolved Organic Carbon	mg/L	1.5	1.2	4.1	2.6	2.4
Nitrate	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrite	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate	mg/L	9	8.4	11	2.6	3.3
Metals						
Boron	mg/L	0.99	0.93	0.14	0.55	0.43
Calcium	mg/L	35	35	97	63	68
Iron	mg/L	< 0.1	< 0.1	5.8	1.5	0.87
Magnesium	mg/L	25	25	25	31	34
Manganese	mg/L	0.002	< 0.002	0.33	0.075	0.056
Potassium	mg/L	14	14	5.6	14	15
Sodium	mg/L	95	96	53	81	67
Volatile Organic Compounds (VOCs)						
1,1,1,2-Tetrachloroethane	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,1,1-Trichloroethane	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
1,1,2,2-Tetrachloroethane	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,1,2-Trichloroethane	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,1-Dichloroethane	mg/L	< 0.0001	< 0.0005	0.00038	< 0.0001	0.0001
1,1-Dichloroethylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
1,2-Dichlorobenzene (o)	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,2-Dichloroethane	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,3,5-Trimethylbenzene	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,3-Dichlorobenzene (m)	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,4-Dichlorobenzene (p)	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
1,4-Dioxane	mg/L	< 0.001	< 0.001	0.0081	0.0041	0.004
Benzene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Chlorobenzene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Chloroethane	mg/L	< 0.0002	< 0.001	0.011	0.0031	0.0062
Chloromethane	mg/L	< 0.0005	< 0.0025	< 0.0005	< 0.0005	< 0.0005
Cis-1,2-Dichloroethylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Dichloromethane	mg/L	< 0.0005	< 0.0025	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
m+p-Xylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
o-Xylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Styrene	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
Tetrachloroethylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Toluene	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002
Total Xylenes	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Trans-1,2-dichloroethylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Trichloroethylene	mg/L	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001
Vinyl Chloride	mg/L	< 0.0002	< 0.001	< 0.0002	< 0.0002	< 0.0002

FIGURE

LEGEND

- Leachate Pumping Station
- Release Point
- Groundwater Monitoring Well
- Property Boundary
- Waterbody
- Building
- Hydro Tower
- Road
- Watercourse
- Overhead Power Line
- Waterbody
- Topographic Contours (1 masl)
- Major Contour
- Minor Contour

REV.	DESCRIPTION	YY/MM/DD	BY	CHK
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REFERENCES

THIS DRAWING MAY HAVE BEEN REDUCED. ALL SCALE NOTATIONS INDICATED ARE BASED ON 8.5"x11" FORMAT DRAWINGS.

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CLIENT

WASTE MANAGEMENT

PROJECT

WASTE MANAGEMENT RICHMOND LANDFILL LEACHATE RELEASE INVESTIGATION

TITLE

SITE PLAN AND MARCH 2023 RELEASE LOCATION

BluMetric Environmental
The Tower - The Woolen Mill,
4 Cataraqui St.,
Kingston, Ontario, K7K 1Z7
Tel: 613-531-2725
Fax: 613-531-1852
Email: info@blumetric.ca
Web: http://www.blumetric.ca

PROJECT #	DATE
230130-06	April 21, 2023

DRAWN	CHECKED	FIG NO.	REV
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PHOTOGRAPHIC RECORD OF LEACHATE RELEASE AND CLEANUP

Photo 1: Soil staining resulting from leachate released from leaking frac tank (March 27, 2023)

Photo 2: Soil staining resulting from leachate released from leaking frac tank (March 27, 2023)

Photo 3: Stockpiled impacted soil (March 30, 2023)

Photo 4: Site conditions following removal of impacted soil and final grading with clean gravel (May 8, 2023)

APPENDIX

E

STATEMENT OF COMPLIANCE - 2023 ENVIRONMENTAL MONITORING AND REPORTING, PREPARED BY BLUMETRIC ENVIRONMENTAL INC.

MEMORANDUM

Date:	19 March 2024
To:	Noah Wayt (WM)
Cc:	Chris Prucha and Chad Moose (WM) and Beverly Minshall, WSP Canada Inc.
From:	François Richard and Megan Williamson, BluMetric Environmental Inc.
Project No:	240160-04
Re:	Statement of Compliance, 2023 Environmental Monitoring and Reporting WM Richmond Landfill, Town of Greater Napanee, ON

Condition 14.3 paragraph xiii of Environmental Compliance Approval (ECA) No. A371203 amended March 19, 2021[1] for the Waste Management of Canada Corporation (WM) Richmond Landfill requires that the Annual Report includes a statement of compliance with all conditions of the ECA and other relevant Ontario Ministry of Environment, Conservation and Parks (MECP) groundwater and surface water requirements. BluMetric Environmental Inc. is contracted by WM to complete the environmental monitoring program at the landfill, and to prepare the Semi-Annual Monitoring Reports as required by Condition 14.1 of the ECA. The purpose of this memorandum is to provide a statement of compliance with the environmental monitoring and reporting requirements of the ECA.

During the 2023 calendar year, the environmental monitoring program was conducted in accordance with the Environmental Monitoring Plan (EMP) for the site (Interim EMP revision 05, dated April 15, 2016). Any specific exceptions to the sampling program (i.e., dry, or damaged monitoring wells, dry surface water locations, etc.) are described in the Spring and Fall 2023 Semi-Annual Monitoring Reports submitted to MECP in July 2023 and January 2024, respectively.

Both 2023 Semi-Annual Monitoring Reports were submitted to MECP and other stakeholders in compliance with Condition 14.1 of the ECA. The reports were also posted by WM on a publicly accessible website.

The Semi-Annual Monitoring Reports include an assessment with regard to the compliance of groundwater quality in comparison to MECP Guideline B-7. The reports also include a statement of compliance of the monitoring well conditions to Ontario Regulation 903.

[1] Note that prior to the March 19, 2021 ECA amendment, this condition was referred to as Condition 14.3, paragraph xxi

We trust you will find this statement of compliance with the environmental monitoring and reporting requirements of ECA No. A371203 to be satisfactory.

If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully submitted,
BluMetric Environmental Inc.

François A. Richard, Ph.D., P.Geo.
Senior Hydrogeologist

Megan Williamson, B.Sc.
Environmental Scientist

Ref: 2023 Statement of Compliance Memo_20240319.docx

APPENDIX

F

2023 PHYTOREMEDIATION SYSTEM MONITORING RESULTS, PREPARED BY BLUMETRIC ENVIRONMENTAL INC.

MEMORANDUM

Date: 19 March 2024
To: Noah Wayt (WM)
Cc: Chris Prucha and Chad Moose (WM) and Beverly Minshall, WSP Canada Inc.
From: François Richard and Megan Williamson, BluMetric Environmental Inc.
Project No: 240160-04
Re: 2023 Monitoring Results, Phytoremediation System
WM Richmond Landfill, Town of Greater Napanee, ON

Condition 4.9 of Environmental Compliance Approval (ECA) No. A371203, amended March 19, 2021[1], for the Waste Management of Canada Corporation (WM) Richmond Landfill requires that the Annual Report includes an assessment of the results from the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system, as well as an assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes.

BluMetric Environmental Inc. is contracted by WM to complete the environmental monitoring program at the landfill, and to prepare the Semi-Annual Monitoring Reports as required by Condition 14.1 of the ECA. The purpose of this memorandum is to provide the monitoring results for the phytoremediation system and related assessments required by Condition 4.9 of the ECA.

During the 2023 calendar year, the results from the environmental monitoring program, conducted in accordance with the latest Environmental Monitoring Plan (Interim EMP (rev. 05) dated April 2016), were also used to monitor groundwater levels and quality around the phytoremediation system in the northwest corner of the Site.

To address ECA Condition 4.9 (i), groundwater levels were recorded from monitoring wells specified in Condition 4.8 (1) which includes monitors installed in the Shallow Groundwater Flow Zone (M27, M66-2, M67-2, M86, M100, M101, M102 and M103) as well as the Intermediate Bedrock Groundwater Flow Zone (M3A-3, M72, M73, M74, M75 and M95-1). Similarly, Condition 4.8 (2) lists wells for quality monitoring and includes locations from the Shallow Flow Zone (M66-2, M67-2, M101 and M103) and Intermediate Bedrock Flow Zone (M5-3, M6-3, M74 and M75). Groundwater elevation and quality results are presented in **Tables 1** and **2**, respectively.

[1] Note that prior to the March 19, 2021 ECA amendment, this condition was referred to as Condition 5.11

Additional details related to the 2023 monitoring results are available in the Spring and Fall 2023 Semi-Annual Monitoring Reports.

The phytoremediation system was initially planted in May 2011, and following some start-up issues was completely removed in 2012. The ground was reworked, and 6,700 dogwoods and willows were planted in May 2013. The trees were pruned by Ontario Hydro personnel in March 2021. Since the plantation has yet to become fully established, no trends are apparent from the monitoring results in relation to the operation of the phytoremediation system. No information is available to address Conditions 4.9 (ii and iii), as the system continues to establish itself. These conditions will be addressed in future monitoring reports.

We trust you will find this statement of compliance with the environmental monitoring and reporting requirements of ECA No. A371203 to be satisfactory. If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully submitted,
BluMetric Environmental Inc.

François A. Richard, Ph.D., P.Geo.
Senior Hydrogeologist

Megan Williamson, B.Sc.
Environmental Scientist

Encl.
Tables

Ref: 2023 Phytoremediation_Memo_20240319.docx

TABLES

WM-Richmond Landfill
ECA A371203
Table 1: 2023 Phytoremediation System Monitoring Results (Water Levels)

Monitoring Well	Water Level masl	Monitoring Well	Water Level masl	Monitoring Well	Water Level masl
8-May-23		20-Jul-23		23-Oct-23	
Shallow Groundwater Flow Zone					
M27	126.31	M27	125.71	M27	124.24
M66-2	123.28	M66-2	122.08	M66-2	122.02
M67-2	122.81	M67-2	122.15	M67-2	121.87
M100	125.36	M100	123.92	M100	123.40
M101	124.06	M101	122.90	M101	122.12
M102	124.13	M102	123.02	M102	122.64
M103	123.81	M103	122.60	M103	122.11
Intermediate Bedrock Groundwater Flow Zone					
M3A-3	125.02	M3A-3	124.48	M3A-3	124.15
M5-3	122.97	M5-3	123.11	M5-3	123.30
M6-3	122.71	M6-3	122.99	M6-3	122.92
M74	123.92	M74	123.27	M74	122.72
M75	123.18	M75	123.31	M75	123.35

WM-Richmond Landfill
ECA A371203
Table 2a: 2023 Phytoremediation System Monitoring Results (Spring Groundwater Quality)

Name	Date	Alkalinity	Ammonia	Boron	Calcium	Chloride	Conductivity	Dissolved Organic Carbon	Iron	Magnesium	Manganese	Nitrate	Nitrite	Potassium	Sodium	Sulphate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																	
M66-2	5/10/2023	280	< 0.15	0.28	130	120	1300	2.6	< 0.1	38	< 0.002	0.49	< 0.01	3.9	85	190	850
M67-2	5/11/2023	360	0.46	0.65	51	3.9	660	1.9	0.5	29	0.041	< 0.1	< 0.01	8.4	47	11	345
M101	5/11/2023	440	< 0.15	0.06	140	44	1000	3	< 0.1	44	0.025	< 0.1	< 0.01	3.7	18	67	560
M103	5/9/2023	700	< 0.15	0.22	140	180	1800	3.9	< 0.1	85	< 0.002	0.21	< 0.01	5.5	120	43	930
Intermediate BedrockGroundwater Flow Zone																	
M5-3	5/10/2023	430	1.33	1.1	37	48	980	1.2	< 0.1	27	< 0.002	< 0.1	0.011	13	130	4.9	600
M6-3	5/10/2023	560	1.16	1	200	1400	5600	69	< 0.1	100	< 0.002	< 0.1	< 0.01	26	790	110	3210
M74	5/11/2023	400	1.37	0.3	61	60	920	5.1	0.45	46	0.035	< 0.1	< 0.01	13	56	6.3	490
M75	5/10/2023	400	1.47	1.3	38	65	1100	1.8	< 0.1	25	0.019	< 0.1	< 0.01	14	160	51	610

Name	Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethylene	1,2-Dichlorobenzene (o)	1,2-Dichloroethane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene (m)	1,4-Dichlorobenzene (p)	1,4-Dioxane	Benzene	Chlorobenzene	Chloroethane	Chloromethane	Cis-1,2-Dichloroethylene	Dichloromethane	Ethylbenzene	m+p-Xylene	o-Xylene	Styrene	Tetrachloroethylene	Toluene	Total Xylenes	Trans-1,2-dichloroethylene	Trichloroethylene	Vinyl Chloride
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																													
M66-2	5/10/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	0.00076	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M67-2	5/11/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M101	5/11/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0012	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	0.0052	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M103	5/9/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0091	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
Intermediate BedrockGroundwater Flow Zone																													
M5-3	5/10/2023	< 0.002	< 0.001	< 0.002	< 0.002	< 0.001	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002
M6-3	5/10/2023	< 0.005	< 0.0025	< 0.005	< 0.005	< 0.0025	< 0.0025	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.31	< 0.0025	< 0.0025	< 0.005	< 0.013	< 0.0025	< 0.013	< 0.0025	< 0.0025	< 0.0025	< 0.005	< 0.0025	< 0.005	< 0.0025	< 0.0025	< 0.0025	< 0.005
M74	5/11/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M75	5/10/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002

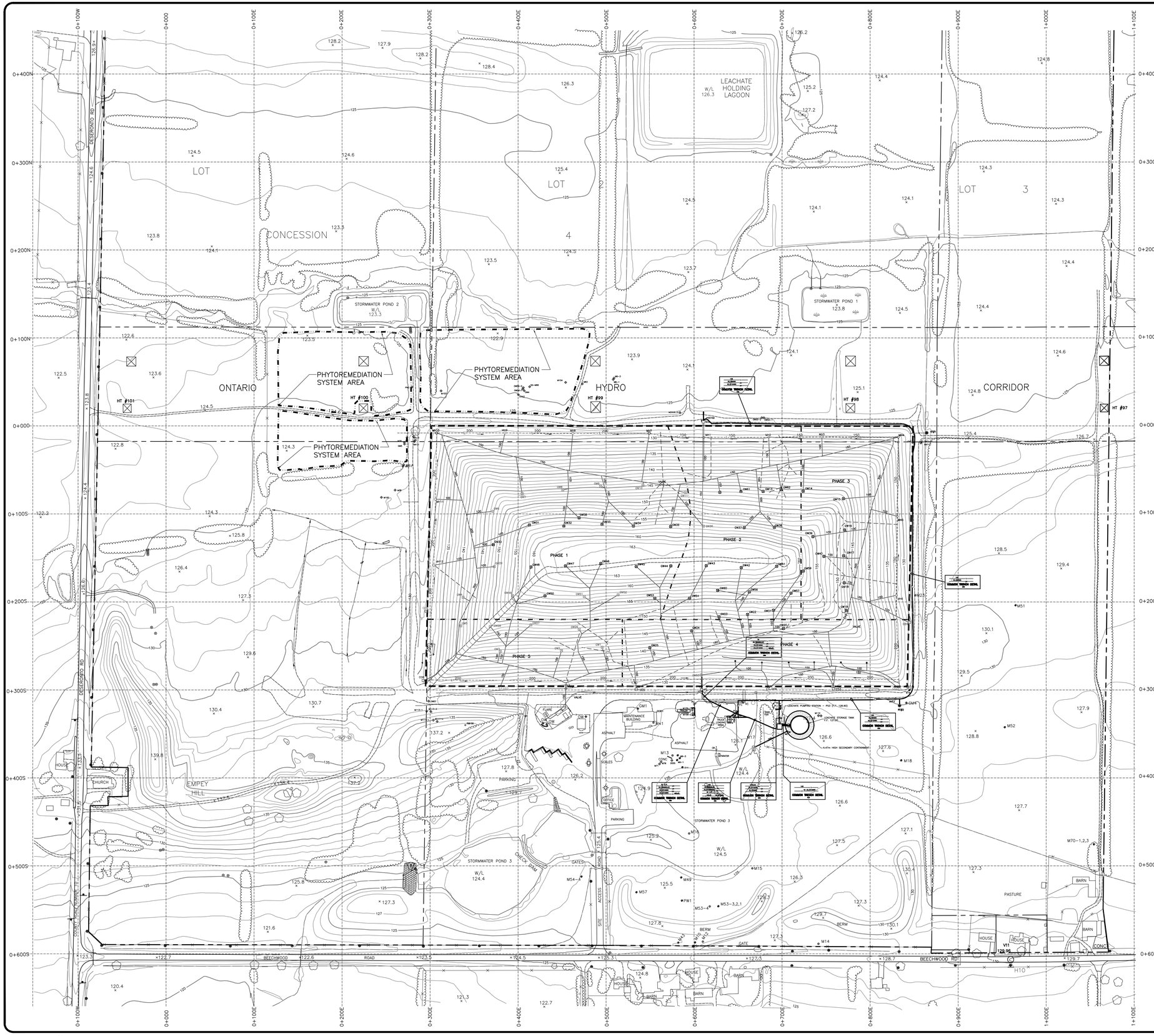
WM-Richmond Landfill
ECA A371203
Table 2b: 2023 Phytoremediation System Monitoring Results (Fall Groundwater Quality)

Location	Date	Alkalinity mg/L	Ammonia mg/L	Boron mg/L	Calcium mg/L	Chloride mg/L	Conductivity µS/cm	Dissolved Organic Carbon mg/L	Iron mg/L	Magnesium mg/L	Manganese mg/L	Nitrate mg/L	Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulphate mg/L	Total Dissolved Solids mg/L
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																	
M67-2	10/24/2023	330	0.69	0.76	45	2	630	2.2	0.43	25	0.018	< 0.1	0.021	8.7	43	4.6	285
M66-2	10/25/2023	380	0.24	0.78	94	84	1400	2	< 0.1	31	0.011	< 0.1	< 0.01	6.4	140	96	750
M101	10/26/2023	450	< 0.15	0.064	150	37	1000	2.6	< 0.1	42	0.014	< 0.1	< 0.01	4	19	64	575
M103	10/26/2023	680	< 0.15	0.29	140	160	1800	3.4	< 0.1	85	0.005	< 0.1	< 0.01	7	120	39	940
Intermediate BedrockGroundwater Flow Zone [1]																	
M5-3	10/24/2023	450	1.43	1.1	34	38	1000	1.6	< 0.1	26	< 0.002	< 0.1	< 0.01	13	150	13	565
M6-3	10/25/2023	370	2.09	1.2	38	1300	5300	69	< 0.1	160	< 0.002	< 0.1	< 0.01	21	860	89	2900
M74	10/24/2023	350	1.58	0.47	50	46	830	4.9	0.19	37	0.029	< 0.1	0.021	13	56	10	480
M75	10/24/2023	430	1.8	1.3	36	73	1200	1.5	< 0.1	26	0.005	< 0.1	< 0.01	15	170	62	585

Location	Date	1,1,1,2-Tetrachloroethane mg/L	1,1,1-Trichloroethane mg/L	1,1,2,2-Tetrachloroethane mg/L	1,1,2-Trichloroethane mg/L	1,1-Dichloroethane mg/L	1,1-Dichloroethylene mg/L	1,2-Dichlorobenzene (o) mg/L	1,2-Dichloroethane mg/L	1,3,5-Trimethylbenzene mg/L	1,3-Dichlorobenzene (m) mg/L	1,4-Dichlorobenzene (p) mg/L	1,4-Dioxane mg/L	Benzene mg/L	Chlorobenzene mg/L	Chloroethane mg/L	Chloromethane mg/L	Cis-1,2-Dichloroethylene mg/L	Dichloromethane mg/L	Ethylbenzene mg/L	m+p-Xylene mg/L	o-Xylene mg/L	Styrene mg/L	Tetrachloroethylene mg/L	Toluene mg/L	Total Xylenes mg/L	Trans-1,2-dichloroethylene mg/L	Trichloroethylene mg/L	Vinyl Chloride mg/L
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																													
M67-2	10/24/2023	< 0.002	< 0.001	< 0.002	< 0.002	< 0.001	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002
M66-2	10/25/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M101	10/26/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0021	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M103	10/26/2023	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0098	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
Intermediate BedrockGroundwater Flow Zone [1]																													
M5-3	10/24/2023	< 0.01	< 0.005	< 0.01	< 0.01	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.001	< 0.005	< 0.005	< 0.01	< 0.025	< 0.005	< 0.025	< 0.005	< 0.005	< 0.005	< 0.01	< 0.005	< 0.01	< 0.005	< 0.005	< 0.005	< 0.01
M6-3	10/25/2023	< 0.001	< 0.0005	< 0.001	< 0.001	< 0.0005	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.3	< 0.0005	< 0.0005	< 0.001	< 0.0025	< 0.0005	< 0.0025	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.0005	< 0.001	< 0.0005	< 0.0005	< 0.0005	< 0.001
M74	10/24/2023	< 0.002	< 0.001	< 0.002	< 0.002	< 0.001	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002
M75	10/24/2023	< 0.01	< 0.005	< 0.01	< 0.01	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.001	< 0.005	< 0.005	< 0.01	< 0.025	< 0.005	< 0.025	< 0.005	< 0.005	< 0.005	< 0.01	< 0.005	< 0.01	< 0.005	< 0.005	< 0.005	< 0.01

APPENDIX

G SITE LOCATION PLAN – PHYTOREMEDIATION SYSTEM



LEGEND:

- 125 — EXISTING GROUND
- INTERVAL CONTOURS
- REFERENCE GRID LINE
- LEGAL BOUNDARIES
- APPROVED LIMIT OF LANDFILL
- PHASING LIMITS
- EXISTING DRAINAGE DITCH
- EXISTING WEEPER
- 150 — EXISTING GAS LATERAL
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING TREE
- HT #98 — EXISTING HYDRO TOWER (ID #)
- EXISTING HYDRO POLE
- EXISTING RADIO TOWER
- UH — EXISTING UNDERGROUND HYDRO
- EXISTING ROAD EDGE
- MH3 — EXISTING LEACHATE MANHOLE
- 150 — EXISTING GAS HEADER & DIAMETER (mm)
- 100 — EXISTING GAS LATERAL & DIAMETER (mm)
- CT — EXISTING COMMON TRENCH
- GM1 — GAS MONITOR
- M9 — GROUNDWATER MONITOR
- OBSERVATION WELL
- GW62 — ACTIVE VERTICAL EXTRACTION GAS WELL
- GW52 — NON–ACTIVE VERTICAL EXTRACTION GAS WELL
- MH4 — ACTIVE GAS EXTRACTION MANHOLE
- MH3 — NON–ACTIVE GAS EXTRACTION MANHOLE
- CO4 — ACTIVE GAS EXTRACTION CLEANOUT
- CO2 — NON–ACTIVE GAS EXTRACTION CLEANOUT

NOTES:

1) EXISTING GROUND CONTOURS AND TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN ARE BASED ON INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY FLOWN ON JUNE 27, 2009 BY BASE MAPPING AND FIELD SURVEY DATA BY SMC TO APRIL 19, 2023.
2) CONTOUR INTERVAL SHOWN IS 1.0m
3) THE LOCAL SITE GRID IS BASED ON 0+000N BEING THE NORTH LANDFILL LIMIT. THE NORTH WEST CORNER OF THE LANDFILL LIMIT IS 0+300E AND IS PERPENDICULAR TO THE EAST/WEST GRID LINE. THE WEST LIMIT OF THE LANDFILL IS LOCATED ALONG THE LOT LINE BETWEEN LOTS 1 AND 2, CONCESSION 4.
4) THE PHYTOREMEDIATION SYSTEM IN THE NORTHWEST CORNER OF THE LANDFILL WAS PLANTED IN THE SPRING OF 2011. DUE TO WET CONDITIONS AND POOR GROWTH, ALL AREAS WERE PLOWED UNDER IN SEPTEMBER 2012, AND GROUND CONDITIONS WERE REWORKED. ALL AREAS WERE REPLANTED IN SPRING 2013. IN 2014, WM REPORTED THAT VEGETATION HAD RE–ESTABLISHED WELL. VARIOUS CHEMICALS WERE USED TO PROMOTE GROWTH AND REMOVE GRASS AND WEEDS. THE HEIGHT OF PLANTS VARIES FROM 50 CM TO 100 CM.
5) IN 2015 AND 2016, WM REPORTED THE PLANTATION EXPERIENCED GOOD GROWTH. THE WILLOWS ARE APPROXIMATELY 1.5m TO 2.4m IN HEIGHT, AND THE DOGWOODS ARE APPROXIMATELY 0.9m TO 1.2m IN HEIGHT. APPROXIMATELY FIVE (5) TO TEN (10) PERCENT MORE SHRUBS THAT WERE NOT ABLE TO BE SEEN PREVIOUSLY IN THE WEEDS, HAVE SHOWN SIGNS OF GROWTH.
6) FOR 2017 THROUGH 2020, WM REPORTED NO OPERATIONAL PROBLEMS OR CHANGES. GROWTH CONTINUES TO DEVELOP, AND ALL PLANT LIFE WAS MONITORED FOR ANY SIGN OF IMPAIRMENT.
7) IN 2021, WM REPORTED NO OPERATIONAL PROBLEMS OR CHANGES. HYDRO ONE COMPLETED PRUNING ACTIVITIES IN LATE APRIL 2021, WHICH REDUCED THE HEIGHT OF VEGETATION IN COMPLIANCE WITH A CONDITION OF ECA NO. A371203. GROWTH IN THE PLANTATION RE–ESTABLISHED THROUGHOUT THE 2021 GROWING SEASON. ALL PLANT LIFE WILL CONTINUE TO BE MONITORED FOR ANY SIGN OF IMPAIRMENT.
8) IN 2022 AND 2023, WM REPORTED NO OPERATIONAL PROBLEMS OR CHANGES. ALL PLANT LIFE WILL CONTINUE TO BE MONITORED FOR ANY SIGN OF IMPAIRMENT.

B.M. #1 ELEV. = 124.667

TOP OF BRACKET, NORTH WEST LEG OF HYDRO TOWER No. 99. LOCATED ±25m NORTH AND ±180m EAST OF NORTH WEST CORNER OF APPROVED LANDFILL LIMIT.

B.M. #2 ELEV. = 125.146

TOP OF BRACKET, NORTH WEST LEG OF HYDRO TOWER No. 100. LOCATED ±25m NORTH AND ±80m WEST OF NORTH WEST CORNER OF APPROVED LANDFILL LIMIT.

SCALE : 1:2000

0 100 200m

DATE	DESCRIPTION	APP BY

WSP
55 KING STREET, SUITE 700
ST.CATHARINES (ONTARIO) CANADA L2R 3H5
TEL.: 905–687–1771 | WWW.WSP.COM

WM

SITE PLAN
2023 PHYTOREMEDIATION SYSTEM
RICHMOND LANDFILL
NAPANEE, ONTARIO

DWN BY: T C G
CHK BY: B D M
DATE: MARCH 2024
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 8570 - 2023 PS

SHEET
2023PS

C:\1-TOMS WORK\CA.0022409.0678 RICHMOND LANDFILL\DRAWINGS\8570-2023PS.dwg Mar 08, 2024 - 11:15am

APPENDIX

H

2023 ANNUAL SITE AND STORMWATER INFRASTRUCTURE INSPECTION REPORT PREPARED BY WSP CANADA INC. AND DATED JULY 24, 2023

July 24, 2023

Waste Management – Environmental Legacy Management Group
1271 Beechwood Road
Town of Greater Napanee, ON
K7R 3L1

Attention: Mr. Noah Wayt, District Manager

Subject: Annual Site and Stormwater Infrastructure Inspection - Richmond Landfill

Dear Mr. Wayt:

This letter is intended to summarize the findings of the annual site inspection and stormwater infrastructure inspection performed by WSP Canada Inc. (WSP) at Waste Management of Canada Corporation's (WM) Richmond Landfill site, located at 1271 Beechwood Road, Town of Greater Napanee, ON. The purpose of the inspections is to verify that the site and stormwater infrastructure are operated in compliance with the post-closure requirements listed in the site's Environmental Compliance Approvals (ECA) No. A371203.

The site inspection was performed on Tuesday, July 11, 2023. Weather conditions at the time consisted of partly cloudy skies, clearing to mostly sunny skies by mid-morning, with some clouds in the late afternoon. Winds were estimated at 5 to 10 kilometres per hour (3 to 6 miles per hour), increasing to 30 kilometres per hour (19 miles per hour) in the afternoon. Temperatures ranged from 21 degrees Celsius (C) (70 degrees Fahrenheit (F)) to 28 degrees C (86 degrees F). Humidity made the air temperature feel like 37 degrees C (99 degrees F). Ground conditions were dry.

The inspection consisted of a walking tour of the facility. No operations personnel (WM or BluMetric Environmental Inc.) were present to discuss site operations. Observations were recorded in a field notebook and photographs were also taken.

A summary of findings for various components inspected is presented on the following pages:

Suite 101
1450, 1st Avenue West
Owen Sound, ON, Canada N4K 6W2

T: +1 519 376-7612
F: +1 519 376-8008
wsp.com

MAIN ENTRANCE

PAVEMENT

The pavement was observed to be in fair condition, with no litter observed. Evidence of wear was observed along the asphalt/granular transition off Beechwood Road. Refer to **Photo 1** in the photo log for reference.

STANDING WATER

No standing water was observed.

FENCING

The following comments pertain to the chain link fence and the paige wire fence along the southern extent of the landfill property:

At the main entrance, a new gate has been installed since the previous inspection, but the signage that was present on the former gate was not re-installed. Refer to **Photo 2** of the photo log for visual reference, and to the Signage heading below for further information. The chain link fence was noted to be in fair to poor condition. As noted during previous inspections, several dislodged caps were observed at the top of the steel posts which secures the top rail in position along the east and west sides of the entrance. Please refer to **Photo 3** in the photo log for visual reference. The chain link is still intact in these areas.

The paige wire fence at the front of the site along Beechwood Road was observed to be in fair to poor condition. Areas of concern as noted in previous inspections are identified below, along with changes in conditions:

- Just east of the entrance, at the former location of two (2) trees, the fence was observed to be leaning and the paige wire is damaged;
- A section of fence in the valley surrounding the second hydro pole east of the entrance is leaning and is in poor condition. The paige wire has also partially detached from the steel t-t-posts. Refer to **Photo 4** in the photo log for visual reference;
- The paige wire has popped from the post located near the second hydro pole west of the southeast corner;
- There is a gap in the fence at the farm gate west of the third hydro pole (#3193) east of the entrance, and in the fence west of the farm gate;
- Fence posts are leaning in several locations, and a few “No Trespassing” signs are evident;
- West of the landfill entrance, the fence continues to exhibit a low point at the transition from the chain link fence to post/paige wire fence; and
- Fence posts are virtually obscured by thick vegetation, beginning at the first hydro pole west of the landfill entrance, extending west to the southwest corner near the Beechwood Road and County Road 10 intersection. The “No Trespassing” signs on the fence in this area are obscured due to the vegetation. Refer to **Photo 5** of the photo log for visual reference.

SIGNAGE

Previously, several signs were present at the main entrance and the gates which contained information required by various conditions of the site's ECA (site closure, closure of the public drop off area, contact number for those who have questions/comments/complaints, for example). Information is no longer present since the installation of the new gate at the front entrance, as seen in Photo 2 of the photo log. The sign to the east of the main entrance listing contact information is very faded, cannot be discerned, and is partially obscured with vegetation, as observed in **Photo 6** of the photo log. This signage does not identify a contact name to receive questions/comments/complaints from the public.

Additional signage along the main entrance road includes posted speed limits, and WM promotional safety material. New signage which identifies the emergency assembly areas has been installed on the chain link fence on the east side of the main entrance and on the west side of the chain link fence adjacent to the gate. Refer to **Photos 7** and **8** of the photo log for visual reference. A red canister which was observed to be labeled as "Emergency Plan" during the 2022 inspection, is located on the chain link fence to the west of the entrance gate. The canister is no longer labeled and is empty. Refer to **Photo 9** of the photo log for visual reference.

The Stop sign at the west side of the entrance was found to be leaning away from the traffic sight line and is obscured by vegetation. Refer to **Photo 10** of the photo log for visual reference.

NORTH AND WEST PERIMETER FENCES

NORTH PERIMETER FENCE

The perimeter fence along County Road 11 was observed to be in fair to poor condition. Several fence sections are down or contain holes, while in other areas, fence posts are at risk of falling into the ditch due to erosion. "No Trespassing" signs in various locations have either fallen off the fence or are flipped over. As per previous inspections, a gate was noted open at 3682 County Road 11, which permits access to the northwest section of the landfill.

The perimeter fence comprised of t-posts and paige wire east of the entrance to 3792 County Road 11 (near the former WM Wildlife House) extending east approximately 250 metres, is down. Additional t-posts in the area are leaning and the "No Trespassing" signs are faded. Refer to **Photo 11** of the photo log for visual reference.

The former WM Wildlife House has been demolished since the previous inspection and restoration of the building footprint has been completed. Refer to **Photo 12** of the photo log for visual reference.

WEST PERIMETER FENCE

The perimeter fence along County Road 10 was observed to be in good to fair condition. As noted in previous inspections, the fence has been cut in an area along the northwest corner of the landfill property on County Road 10 to access monitoring wells 82-1 and 82-2, north of hydro tower X527B. Refer to **Photo 13** of the photo log for visual reference. Vegetation continues to fill in the opening. "No Trespassing signs" are visible, but most signs are becoming faded from sun exposure. Nearly all fence posts are upright, with vegetation becoming entangled in the paige wire. Minor debris (litter) is present in several locations of the ditch along County Road 10.

STORMWATER POND 3

The pond was inspected in two (2) parts; the area east of the main entrance road and the area west of the main entrance road.

Pond 3 east of the main entrance road was noted to be in good condition. The grass on the berms surrounding the pond has not been mowed. Refer to **Photo 14** of the photo log for visual reference. No erosion was observed on the banks of the pond, however, thick vegetation (cattails) obscured any visual observations. Refer to **Photo 15** of the photo log for visual reference. The east end of the culvert extending under the main entrance road was obscured by thick vegetation and was not visible. Monitoring wells in this area were noted to be locked with exception of M14 and M12, as noted in previous inspections. At both locations, zip ties were noted which prevents the top of the "casing" from being freely opened. Refer to **Photo 16** of the photo for visual reference. Riprap at the inlet on the northeast side of the pond does not require replacement and no evidence of sediment was noted on the riprap, but the outlet pipe from the secondary containment area surrounding the leachate storage tank was not visible. Refer to **Photo 17** of the photo log for visual reference. No stains, sheens, floating foam, or scum were observed. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access.

Pond 3 west of the main entrance road was also noted to be in good condition. The grass on the berms surrounding the pond has not been mowed. Refer to **Photo 18** of the photo log for visual reference. No erosion was observed on the banks of the pond, however, thick vegetation (cattails) obscured any visual observations. Refer to **Photo 19** of the photo log for visual reference. The west end of the culvert extending under the main entrance road is mostly obscured by vegetation and was not visible. No stains, sheens, floating foam, or scum were observed. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access. Monitoring wells were noted to be locked.

The outlet channel from the emergency spillway to the outlet area at Beechwood Road is obscured with vegetation, as is the emergency spillway. Refer to **Photos 20 and 21** of the photo log for visual reference. The riprap that is visible in the emergency spillway and spillway channel is in good to fair condition. Low water levels were present in the pond and no water was entering the inlet structure at the time of the inspection. The inlet structure is mostly clear of vegetation and water can enter the inlet side. A small volume of water was present within the structure. Refer to **Photos 22** and **23** of the photo log for visual reference. The outlet pipe was inspected and is becoming obscured with vegetation. No water was present at the outlet at the time of inspection. Refer to **Photos 24** and **25** of the photo log for reference. The gate valve on the outlet pipe was not operated as the key was not readily located. The solar panel at the west side of the discharge outlet pipe was observed to be lying on the ground as documented in previous inspections.

No personal floatation devices (PFDs) were observed at the pond.

FORMER PUBLIC DROP-OFF AREA AND WEIGH SCALES

A minor amount of loose litter was observed at the former public drop off area, with bags of collected litter present on the northwest side of the facility. Refer to **Photo 26** of the photo log for visual reference. A slight odour, emanating from the lone garbage truck parked in the area, was detected at the time of the inspection. Several containers for litter were noted. Evidence of pest control in the form of

bait boxes was observed. No evidence of vermin was noted. Gravel has been placed in several potholes that were previously observed in the gravel surface immediately west of the weigh scales, to the south of the retaining wall. Refer to **Photos 27** and **28** of the photo log for reference. The former re-use centre was observed to be in good condition.

The former parking area west of the public drop-off facility, north of Pond 3 was also inspected. Electrical boxes remain secured to some of the four (4) concrete blocks in this area, but vegetation is obscuring the presence of the boxes and lines. It was not immediately clear if the outlets were connected to live electricity. Roll-off bins have been parked at the path leading to the north side of Stormwater Pond 3, and vehicles cannot access the path to the emergency spillway. Refer to **Photo 29** of the photo log for visual reference.

The weigh scales were noted to be in fair condition, with some asphalt wear on the west side of the approach ramp. Sections of the protective steel on the east side of the scale were observed to be missing or bent at the access points to the electrical junction boxes under the scale, as noted during previous inspections. The pole containing the scale entrance/exit traffic lights, formerly observed lying on the ground as per previous inspections, has been removed. Refer to **Photo 30** of the photo log for visual reference.

FLARE COMPOUND

The chain link fence surrounding the flare compound was found to be in good condition, with appropriate signage present. The gate to the compound was closed and locked. The flare was not operating at the time of the inspection. Granular material has been placed over the trench containing the electrical cable from the leachate storage tank and pumping station east of the flare so the settlement previously observed in the area has somewhat improved. Refer to **Photo 31** of the photo log for reference. The placement of granular material has also improved the area where settlement of a trench leading to the west side of the former public drop-off area was observed in the previous inspection. Refer to **Photo 32** of the photo log for visual reference. Several potholes are present on the gravel road northwest of the flare compound. Refer to **Photo 33** of the photo log for visual reference.

FORMER BORROW AREA

The former borrow area located on the southwest section of the site was noted to be in good to fair condition. Minor erosion was observed in select areas along with sediment accumulation. Minimal vegetation has established. There was no evidence of excavation. Refer to **Photo 34** of the photo log for visual reference.

FORMER COMPOST PAD AND POND

The location of the former compost pad and pond area immediately west of the landfill footprint was examined and found to be in good condition. This area has evolved into a storage area for roll-off bins, small dumpsters, concrete blocks, and miscellaneous debris. A single seacan with “WESA” signage is also present. The road leading into the area is in good to fair condition. The road immediately to the south contains numerous potholes and ponded water, as documented during previous inspections.

It was also noted that GM12, a monitoring location just southeast of this area, does not have a lock, as noted in previous reports. Refer to **Photo 35** of the photo log for visual reference.

PHYTOREMEDIATION AREA

The trees within the phytoremediation area, located in the Hydro One transmission line right of way, were pruned by Hydro One in spring 2021. Vegetation has re-established well in the area, although some locations contain vegetation which appears to exceed the maximum height of 3.65 metres (12 feet) as specified as a condition in ECA No. A371203. Refer to **Photo 36** of the photo log for visual reference.

It was observed that monitoring wells GM5 and 30, just off the northwest corner of the access road, were not visible due to thick vegetation. Monitors M4 and G42 were also difficult to locate in the tall grass and there are no markers indicating the presence of the wells. Refer to **Photo 37** of the photo log for reference.

STORMWATER POND 2

The path to the pond was found to be in fair condition. At the midpoint of the north side, access was then restricted due to substantive vegetative growth. Trees are present on both the interior and exterior sides of the pond. Refer to **Photos 38** and **39** of the photo log for visual reference. Erosion on the banks of the pond was not visible. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access. No water was present in the pond, therefore no stains, sheens, floating foam, or scum were observed.

The drawdown structure was inspected. Access to the structure is obscured by vegetation as seen in Photo 38 of the photo log, preventing visual confirmation of stable ground surface. “Confined Space” signage is present on the drawdown structure. The stop logs were found to be in fair to poor condition with a large hole present on the east side of three (3) of the stop logs. No water was observed in the area leading up to the inlet and little sediment was observed within the drawdown structure. The outlet pipe from the drawdown structure was inspected and was found to have a minor amount of vegetation in the pipe, with some larger vegetation present at the outlet apron. The cap which formerly restricted flow was observed resting on a wooden pallet to the east of the structure. The wooden pallets are in poor condition and are unstable. No evidence of silt exiting the site from this pipe was observed. Refer to **Photos 40** through **44** of the photo log for visual reference.

The drop inlet structure was also inspected. Access to the structure is obscured by vegetation, preventing visual confirmation of stable ground surface. “Confined Space” signage is present on the “cage” at the drop inlet pipe spillway. Vegetation is present in the base of the structure which obscures visibility of the inlet pipe. Access to the outlet pipe is partially obscured by vegetation but the outlet is mostly clear. A cap containing a small hole is present on the outlet pipe. No evidence of silt exiting the site was observed. Refer to **Photos 45** through **48** of the photo log for visual reference.

A PFD previously observed on the south side of the pond was not seen during this inspection.

LEACHATE HOLDING LAGOON

The leachate holding lagoon was found to be in good to fair condition. Leachate is present in the lagoon. Transfer of leachate to the landfill mound into PS2 was occurring. Access around the top of the lagoon has not been maintained this year. An old roll of geomembrane was observed along the top of the south central bank, that had not been observed in previous inspections. No discernible cracks or tears were noted in the exposed high-density polyethylene membrane. “Confined Space” signage was

not observed on the in-ground structures on the east and northwest sides of the lagoon. Refer to **Photos 49** through **52** of the photo log for visual reference.

A PFD previously observed on the crest of the northwest bank was not observed.

STORMWATER POND 1

The path leading to the pond was found to be in good to fair condition. The path has not been mowed this year, so depressions present on the northeast and southeast sides of the access path are not visible. Vehicular access around the pond was confirmed. Small trees are present on the southeast interior berm, along with some shrubs and some dead trees were observed. Refer to **Photos 53** and **54** of the photo log for visual reference. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access. No water was present in the pond, therefore no stains, sheens, floating foam, or scum were observed.

The drawdown structure was inspected. Access to the structure is obscured by vegetation, preventing visual confirmation of stable ground surface. The wooden walkway was not utilized. “Confined Space” signage is present on the drawdown structure. Several stop logs were found resting on the lid of the structure, and two (2) stop logs were found in the lower side of the inlet were found to be in good condition and may have been replaced since the previous inspection. No water was observed in the area leading up to the inlet and no sediment was observed within the drawdown structure. The outlet pipe from the drawdown structure was inspected and was found to have no vegetation in the pipe. No cap was present to cover the outlet, which is partially damaged. No evidence of silt exiting the site from this pipe was observed. Refer to **Photos 56** through **59** of the photo log for visual reference.

The drop inlet structure was also inspected. Access to the structure is obscured by vegetation, preventing visual confirmation of stable ground surface. “Confined Space” signage is present on the “cage” at the drop inlet pipe spillway. Vegetation is present in the base of the structure which partially obscures visibility of the inlet pipe, but it was visible from the north side of the structure and appears to be mostly free of sediment. Access to the outlet pipe is partially obscured by vegetation but the outlet is mostly clear. A cap containing a small hole is present on the outlet pipe with a large rock used to hold the cap in place. Refer to **Photos 60** through **63** of the photo log for visual reference. No evidence of silt exiting the site was observed as noted in Photo 59 of the photo log.

No PFDs were observed at the pond.

DITCHES SURROUNDING LANDFILL FOOTPRINT

All grass lined ditches were found to be free of sediment and ponded water. Observations were obscured in some areas due to the presence of tall grass as no mowing has occurred. No erosion on the banks of the ditches was observed. Vegetation was in good condition with exception of the east ditch where vegetation was noted to be sparse. This section of the ditch was restored in September 2021 after the installation of a leachate collection forcemain from PS2 to PS3. Refer to **Photo 64** of the photo log for visual reference. Riprap at ditch inlets and outlets was in good condition. No stains, sheens, floating foam, or scum were observed. No areas were identified with excessive sediment that required cleaning.

A concrete block remains in place above the culvert installed under the northwest access road in 2018. The block is mostly obscured by tall grass.

LANDFILL MOUND

The landfill mound was noted to be in fair condition. Mowing of the mound does not appear to have occurred this year, and is required under a condition of ECA No. A371203. Due to the presence of the tall grass, a walking inspection was not completed. Instead, observations were recorded from the perimeter roads. No obvious signs of seep repairs or obvious leachate seeps were noted. Vegetation is sparse on the lower north slope adjacent to manhole MH4 and on the landfill crest northwest of gas well GW41. Refer to **Photos 65** and **66** of the photo log for reference. A rodent hole observed in the previous inspection to the north of PS1 was noted. Refer to **Photo 67** of the photo log for visual reference. Odour was detected along the southeast and northwest perimeter. Identification of landfill gas wells on the landfill crest were clearly visible, while other locations were not as clearly defined. Monitoring well GM3 on the northeast corner of the landfill mound was found to be "dummy locked". Monitoring well M19 located on the southeast corner of the landfill mound which was found to be damaged during the previous inspection was observed to be in the same condition. Refer to **Photo 68** of the photo log for visual reference. It is not clear if this well is part of the current monitoring network.

ACCESS ROAD

The access road surrounding the landfill mound was found to be in good to fair condition. Observations were recorded as follows:

- Evidence of standing water and several potholes were observed on the northwest corner. Refer to **Photo 69** of the photo log for visual reference;
- Several potholes were observed on the northwest road surface, extending east to the road curve south of the hydro tower corridor and to the area west of PS2. Refer to **Photos 70** through **73** of the photo log for visual reference; and
- A few potholes were observed on the southwest access road west of the flare compound, extending around the southwest corner. Refer to **Photos 74 and 75** of the photo log for visual reference; and
- Granular material has been placed at the tee intersection and east and west of the maintenance building to fill potholes observed during the previous inspection. Refer to **Photo 76** of the photo log for visual reference.

FORMER CONTAMINATED SOIL PAD

The soil pad was inspected and was found to be mostly free of litter. Three (3) garbage trucks were parked on the southeast corner of the pad. The pad was dewatered in summer 2021 using the gate valve south of the interceptor chambers and remains dry. The catch basin grate at the south end of the pad was found to be free of debris. All three (3) lids at the interceptor chamber at the southcentral side of the pad were noted to be dislodged and some dark coloured liquid was observed within. No "Confined Space" signage was noted. The gate valve is difficult to locate due to the presence of vegetation. Refer to **Photos 77** and **78** of the photo log for visual reference.

The southwest side of the pad appears to have been filled with granular material which has reduced the depth of large potholes observed during the previous inspection. A portion of the asphalt north of the leachate storage tank loading area that was placed in late 2021 was also covered with granular material. Refer to **Photos 79** and **80** of the photo log for visual reference.

LEACHATE STORAGE TANK AND STORAGE SYSTEM PROJECT

Work on the installation of the storage tank and system was substantially completed in late December 2021. Most deficiencies in the system were addressed by a contractor in October 2022 as witnessed by WSP staff.

The access hatch on the secondary containment ring surrounding the leachate tank was found to be bolted. Vegetation has established well in nearly all areas that were disturbed by this construction project, although weeds are present in several areas and the grass surrounding the leachate tank and PS3 building has not been mowed. The key for the control valve on the discharge line from the catch basin located within the secondary containment area extending southeast into Stormwater Management Pond 3 was found next to the valve, although it does not appear the valve has been operated recently, and the tall weeds obscure the valve box location. The actuator motor on the discharge line in PS3 next to the control panel has not been reinstalled and was found on the floor within the building. The air valves removed from the AV1 and AV2 chambers in October 2022 were found lying in the grass on the west side of the PS3 building. Refer to **Photos 81** through **85** of the photo log for visual reference.

The leachate hauling contractor was observed during the inspection removing leachate from the truck loading area on the east side of the former contaminated soil pad. No spill clean-up equipment was noted at the truck loading area or at any of the pumping stations.

RECOMMENDATIONS

The Richmond Landfill was noted to be in good to fair condition, with most infrastructure operating as intended.

ACTION ITEMS – ECA NO. A371203

A review of ECA No. A371203 was undertaken as part of the annual site inspection. Action items to ensure compliance with the ECA are provided as follows:

ECA CONDITION	WSP RECOMMENDATION
Condition 3.3: "The operations and procedures manual shall be…(b) reviewed every five (5) years and updated by the Owner as required…"	It is recommended that WM review the site's operations and procedures manual and update it as relevant to account for the leachate storage tank/storage system infrastructure.
Condition 3.6: "During non-operating hours, the Site entrance and exit gates shall be locked and the Site shall be secured against access by unauthorized persons."	It is recommended that all perimeter and chain link fencing be repaired at the identified locations under the "Fencing" heading on page 2 of this report and under the "North and West Perimeter Fences" heading on page 3 of this report, to improve site security. The gate on Selby Road should also be closed and secured to restrict trespassers. All faded "No Trespassing" signage should be removed and replaced with clearly visible signs.
Condition 3.7: "Site roads shall be maintained in a manner approved by Item 19 of Schedule "A" (final closure plan)."	Repairs to the access road locations outlined under the "Flare Compound" heading on page 5 of this report and the "Access Road" heading on page 8 of this report are recommended. Repairs to the potholes noted at the main entrance on page 1 of the report are also recommended.
Condition 3.8: "The Site shall be operated and maintained such that…litter…do not create a nuisance."	Cleanup of the bags of litter from the area south of the flare compound, as noted under the "Former Public Drop-Off Area and Weigh Scales" heading on page 4 of this report, is recommended. Leaving the bags in place may invite vermin and/or wildlife to rip open the bags to access the material within them.

ECA CONDITION	WSP RECOMMENDATION
Condition 4.1: "Final cover – Final cover placed after the effective date of this ECA must meet the following specifications. In areas where landfilling has been completed to final contours, a minimum of 900mm thick layer of native silty clay till shall be placed having a hydraulic conductivity of 1 x 10^{-8} m/s or less followed by 150 mm of topsoil."	It is recommended that topsoil and seeding be applied to all barren locations, including those noted under the "Landfill Mound" heading on page 7 of this report, to restore the final cover system.
Condition 4.7 (4): "The Owner shall ensure that the vegetation {phytoremediation system} does not exceed a height of 3.66 metres (12 feet). Where vegetation reaches or exceeds…the Owner shall prune the vegetation forthwith."	It is recommended that the southwestern extent of the phytoremediation system be pruned as it appears to exceed the height specified in the ECA condition. All other portions of the phytoremediation system are recommended to be reviewed and pruned as required.
Condition 6.1: "A training plan for all employees that operate any aspect of the site shall be developed and implemented by the Operator. Only trained employees shall operate any aspect of the Site or carry out any activity required under this ECA…".	It is recommended that WM update the site's training plan and ensure employees operating the leachate storage tank/storage system infrastructure are properly trained and are aware of all inspection and reporting requirements.
Condition 7.1 (2): "If the transfer station is not in operation, daily inspection of the entire Site and all equipment onsite is not required. However, inspection of the leachate management system and all associated components shall be carried out weekly."	It is recommended that WM ensures that employees are undertaking these inspections and completing the required documentation as listed in Conditions 7.2, 7.3 and 7.4 of ECA No. A371203.
Condition 7.5: "The Owner shall inspect the waste mound and surrounding areas for the presence of leachate seeps as required under Condition 13.2."	It is recommended that WM ensures that employees are undertaking these inspections and completing the required documentation as noted in the ECA conditions listed above.
Condition 8.1: "The Owner shall ensure all groundwater monitoring wells are properly capped, locked, and protected from damage."	It is recommended that locks be installed on all monitoring wells. Vegetation should also be removed from around all monitoring locations, so casings are visible. Consider installation of reflective markers to assist with location of monitoring wells.

ECA CONDITION	WSP RECOMMENDATION
Condition 8.2: "All groundwater monitoring wells whether included in the monitoring report or not shall be assessed at least every five years, and repaired, replaced or decommissioned as required in accordance with good standard practice to prevent groundwater contamination and in compliance with the requirements of Ontario Regulation 903.	It is recommended that this assessment be completed by BluMetric (if it has not already been done).
Condition 8.3: "The Owner shall repair or replace any monitoring well included in the monitoring program which is destroyed or in any way made inoperable for sampling such that no more than one (1) sampling event is missed."	At monitoring well M19, repairs and a proper casing are recommended. If not part of the monitoring well network, it is recommended that the well be decommissioned in accordance with Ontario Regulation 903.
Condition 8.4: "Any monitoring well included in the monitoring program that is no longer required as part of the groundwater monitoring program may be decommissioned provided its removal from the monitoring program has been approved by the Director. A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned."	It is understood based on comments exchanged with WM in early 2023 that no decommissioning of groundwater wells has occurred. It is recommended that if any wells are deemed not to be required (and if approved to be removed by the Director), that these wells be decommissioned and subsequent reports be provided to WSP for inclusion in the annual report.
Condition 11.2: "The Owner shall post the Site complaints procedure at the Site entrance along with the name and phone number of a suitable, local contact to receive complaints or questions related to the Site."	The site's complaints procedure signage to the east of the main entrance is quite faded and obscured by vegetation. Some information required by the ECA condition (name of contact) is also missing. It is recommended the signage be cleared of vegetation and updated/replaced with suitable contact information.
Condition 12.3: "The Emergency Response Manual shall be updated on a regular basis and be provided to the District Manager within one (1) month of the revision date."	It is recommended that the "Emergency Plan" be placed in the red canister on the west side of the main entrance so it is available in the event of an emergency (the canister was found to be empty during the inspection). Also, it is recommended that WM confirm the presence/location of the site's Emergency Response Manual and ensure it is updated regularly.

ECA CONDITION	WSP RECOMMENDATION
Condition 12.4: "The Owner shall ensure that fire fighting and continency spill clean-up equipment is available and that emergency response personnel are familiar with its use and location."	It is recommended that spill kits be installed/placed at the truck loading area and at all pumping stations.
Condition 13.1: "The Owner shall ensure a sign with the following information is present at the front gate of the Site; *a. the name of the Site and Owner;* *b. the ECA number;* *c. the name of the Operator;* *d. a warning against unauthorized access* *e. the telephone number to which complaints or questions may be directed;* *f. a 24-hour emergency telephone number;* *g. the Site is closed;* *h. dumping outside the gate is illegal; and* *i. alternative locations for waste disposal."*	The site's signage to the east of the main entrance is quite faded and obscured by vegetation. The signage that was posted on the old swing gates at the main entrance (noting the site is closed, and the transfer station is not in operation, illegal dumping, etc.) was not reinstalled on the new gates. All information required by the ECA condition, and the information required by Condition 11.2, is missing or is faded and not clearly visible. It is recommended the signage be cleared of vegetation and updated with the information as required under this ECA condition.
Condition 13.2 (2): "Once the leachate management system in accordance with Items 69 and 70 of Schedule "A" is in operation, inspection frequency for leachate seeps and signs of illegal dumping of waste can be reduced to once a month."	It is recommended that WM confirm these inspections are being undertaken by operations personnel at the frequency listed in the ECA condition.
Conditions 13.3 (1 and 2): "During the post-closure period, the Owner shall inspect the Site monthly for the following (but not limited items: {see ECA for items 13.3 (1) a through k to be inspected monthly, and items 13.3 (2) a through g to be inspected quarterly)}".	It is recommended that WM confirm these inspections are being undertaken and documented in accordance with Conditions 7.1(2) through 7.5 of the ECA.
Condition 13.5: "Upon Site closure, grass on the berms and the top of the landfill shall be cut a minimum of once per year."	It does not appear the grass on the berms and the top of the landfill has been mowed yet this year. It is recommended that this work be completed before the end of the growing season (mid to late October).

ACTION ITEMS - STORMWATER INFRASTRUCTURE

In March 2021, WSP was advised by WM that the Ministry of Environment, Conservation and Parks (MECP) Kingston District Office had completed a desktop review of the site's ECAs. An action item was identified by the MECP pertaining to the Industrial Sewage Works ECA No. 1688-8HZNJG. The stormwater contingency plan submitted by WM in 2012 (a requirement of submission under this ECA) identified inspection and maintenance requirements in relation to the stormwater ponds and associated ditching, including a commitment for submission of a formal maintenance program five (5) years after site closure that would formalize a maintenance schedule for the duration of the site's contaminating lifespan. The MECP could not determine if this plan had been submitted. The MECP requested a written response from WM by April 30, 2021, outlining measures to be taken to conduct a detailed performance assessment of the ponds, including a schedule of inspection and maintenance activities, with timeframes for completing maintenance work and submission of findings to the MECP. WM submitted a stormwater inspection and maintenance schedule to the MECP on April 30, 2021. Within this document was a statement that maintenance recommendations for each stormwater pond would be included in the annual site inspection report. To date, no response has been received from the MECP regarding this submission.

Inspection of the stormwater infrastructure (Stormwater Pond 3) was completed by WSP on the same day as the annual site inspection (Tuesday, July 11, 2023). In accordance with the inspection tables included in the April 2021 inspection and maintenance schedule, the ponds and associated infrastructure were inspected, and observations were recorded.

The stormwater infrastructure observations are provided in greater detail under the Stormwater Pond headings in this inspection report. Maintenance recommendations for each pond are provided on the following pages:

STORMWATER POND 1

- All vegetation greater in height and diameter than a shrub should be removed from the interior and exterior pond banks (minimal vegetation of this type is present);
- Regrading of the path around the top of the pond is recommended to improve accessibility for vehicles;
- Improvements to the accessibility of the drainage structures in the pond; and to the outlet pipes, should be undertaken. Vegetation should be cleared and leveling of the ground to the structures are examples of improvements;
- Excess vegetation at the drawdown and drop inlet structures should be cleared to improve visibility during future inspections. Improved access would also permit measurements of sediment accumulation within the pond to be completed;
- Excess vegetation at the outlet pipes should be cleared to improve visibility during future inspections, and to confirm no silt is exiting the site;
- Stop logs within the inlet structure should be replaced to maintain control of flow exiting the site; and
- Install at least one (1) PFD at the stormwater pond.

STORMWATER POND 2

- All vegetation greater in height and diameter than a shrub should be removed from the interior and exterior pond banks. Vegetation along the northeast and east sides of the pond currently restricts vehicle access around the pond, and accessing this area by foot is difficult;
- Regrading of the path around the northeast and east sides of the pond is recommended after vegetation removal to improve accessibility for vehicles;
- Improvements to the accessibility of the drainage structures in the pond; and to the outlet pipes, should be undertaken, such as clearing of vegetation and re-grading of the ground to the structures;
- Excess vegetation at the drawdown and drop inlet structures should be cleared to improve visibility during future inspections. Improved access would also permit measurements of sediment accumulation within the pond to be completed;
- Excess vegetation at the outlet pipes should be cleared to improve visibility during future inspections and to confirm no silt is exiting the site. Replacement of the wooden pallets over the outlet pipe with a more stable platform is also recommended;
- Stop logs within the inlet structure should be replaced to maintain control of flow exiting the site; and
- Install at least one (1) PFD at the stormwater pond.

STORMWATER POND 3

- All vegetation greater in height and diameter than a shrub should be removed from the emergency spillway and spillway outlet channel;
- Improvements to the accessibility of the drainage culvert under the main entrance road should be undertaken, such as clearing of vegetation from the culvert ends, and confirming access to these culverts is stable. These locations are not visible due to thick vegetation;
- Excess vegetation at the inlet structure should be cleared to improve visibility during future inspections. Improved access would also permit measurements of sediment accumulation within the pond to be completed;
- Excess vegetation at the outlet pipe and in the outlet channel, particularly at the discharge point near Beechwood Road, should be cleared to improve visibility during future inspections and to verify no silt is exiting the site;
- Operation of the valve at the outlet pipe should be undertaken to confirm the functionality of the valve. A key for the valve was not located during the inspection;
- No “Confined Space” signage is present at the inlet structure or at the interceptor chambers at the northeast end of the pond. It is recommended that signage be installed at these locations;
- The lids at the interceptor chambers off the former contaminated soil pad should be secured; and
- Install PFDs at both the east and west ponds.

RECOMMENDATIONS - GENERAL

- Brush and other vegetative matter should be removed from site signage (No Trespassing signs on the perimeter fence, from the Stop sign at landfill entrance, and from the sign east of main entrance with contact information) so the signs are clearly visible. The Stop sign at the site exit should also be turned so it is clearly visible to outbound traffic;
- Electrical boxes present to the west of the former public drop-off area should be clearly marked. If these boxes are "live", signage indicating the presence of electricity should be posted, or consider disabling the electricity to these areas;
- To protect the electrical junction boxes currently exposed under the east side of the weigh scales, consider replacing the steel "skirt". Also, it should be confirmed if "live" electricity is present here;
- At the leachate holding lagoon, it is recommended that PFDs be installed near the discharge line. "Confined Space" signage is also recommended for installation on the inground structures;
- At PS3, it is recommended that the actuator motor on the discharge line from the leachate storage tank to the truck loading area be reinstalled to ensure leachate does not freely discharge. The air valve assemblies noted on the west exterior side of the building should be relocated to storage.

It is noted the 2024 inspection will be scheduled for mid-summer, in order to access all locations and to assess vegetative growth on the landfill mound and in the former borrow area. The visit will also be scheduled to confirm operations personnel will be present for review of site operations and inspection/recordkeeping procedures.

We trust the enclosed is satisfactory. However, should you have any questions or require clarification, please do not hesitate to contact the undersigned.

Yours truly,

Beverly (Bev) D. Minshall, C.E.T., rcji
Environmental Technologist
/bdm/dlw
Encl.
cc: Mr. Chad Moose, Group Director, Midwest, WM – Environmental Legacy Management Group
Ms. Cristina Olarte, P.Eng., Waste Management Engineer, WSP

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