

**Richmond Sanitary Landfill Site  
081-12459-00  
Monitoring Report No. 26  
Part of Lots 1, 2, and 3, Concession IV  
Town of Greater Napanee  
County of Lennox and Addington**

**Prepared for:  
Waste Management of Canada Corporation  
1271 Beechwood Road  
Town of Greater Napanee, ON K7R 3L1**

**Prepared by:  
GENIVAR Inc.  
1450 First Avenue West, Suite 101  
Owen Sound, Ontario N4K 6W2**

**Project No. 081-12459-00 (8570)**



081-12459-00 (8570)

March 26, 2013

Mr. Randy Harris, Landfill Manager,  
Waste Management of Canada Corporation  
1271 Beechwood Road  
Town of Greater Napanee, ON K7R 3L1

Re: Waste Management of Canada Corporation - Richmond Landfill Site  
Annual Monitoring Report #26

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Dear Randy:

We are pleased to provide Monitoring Report #26 in accordance with the conditions of Environmental Compliance Approval No A371203, and Environmental Compliance Approval No. 1688-8HZNJG.

Please find enclosed **twenty-one (21) copies** for your distribution. **Two (2) copies** should be provided to the Regional Director and District Manager for the Ministry of the Environment – Kingston District Office, retain **one (1) copy** for your records, and the remainder can be distributed to the stakeholders as described in Condition 14.2 of ECA No. A371203, and as needed. If you require additional copies, please let us know. Please note that an electronic version of this document has been provided to Reid Cleland and Wayne Jenken.

Please note that the Ministry of Environment's Monitoring and Screening Checklist form has been included in reports submitted by Water and Earth Science Associates (WESA) under separate cover.

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

Very truly yours,

**GENIVAR Inc.**

Jeff E. Armstrong, P.Eng.  
Designated Consulting Engineer  
Director, Solid Waste Management  
JEA/bdl  
Encl.

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A.5	Certificate of Approval (Air) No. 1355-5LRN9N (Landfill Gas Collection and Flaring System)
A.5.1	Amendment to Certificate of Approval No. 1355-5LRN9N dated January 13, 2004, Regarding Notification of Change of Name
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## 1.0 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) No. A371203, including amendments. The Richmond Landfill ceased to accept waste for final disposal on June 30, 2011, as per Condition 4.4 of the ECA.

This monitoring report for the Richmond Landfill site was prepared following site inspections and discussions with management, and complies with conditions listed in ECA No. A371203, issued January 9, 2012, and ECA (Sewage Works) No. 1688-8HZNJG, issued January 10, 2012, as follows:

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

It should be noted that certain Conditions of ECA No. A371023 are under appeal to the Environmental Review Tribunal (ERT), as follows:

- (i) Condition 8.5 (Environmental Monitoring Plan);
- (ii) Condition 9.1 (Groundwater and Surface Water Impact Contingency Plan);
- (iii) Condition 9.2 (Leachate Collection System Contingency Plan);
- (iv) Condition 9.5 (Public Notification Plan);
- (v) Condition 14.1 (Semi-Annual Monitoring/Reporting); and
- (vi) Conditions 14.2 and 14.3 (Annual Reporting).

This annual report is based upon the currently approved Conditions. Changes to the aforementioned Conditions as a result of the ECA appeal will be reflected in the 2013 annual report.

This report was prepared following a site inspection performed by GENIVAR on July 23, 2012 and discussions with management.

A copy of ECA No. A371203 is included in **Appendix A.1** of this report, with amendments provided in **Appendix A.1.1**. The amendments issued during the reporting year, dated January 9, 2012, contained the following updates:

**January 9, 2012 Amendment (Appendix A.1.1)**

Imposed Conditions 5.12 through 5.24 inclusive. This amendment approved the operation of the waste and recyclable drop off facility, subject to conditions regarding waste types, waste quantities, service area, removal frequency, and operations.

The following other Certificates of Approval and Environmental Compliance Approvals concerning the site are included in **Appendix A**:

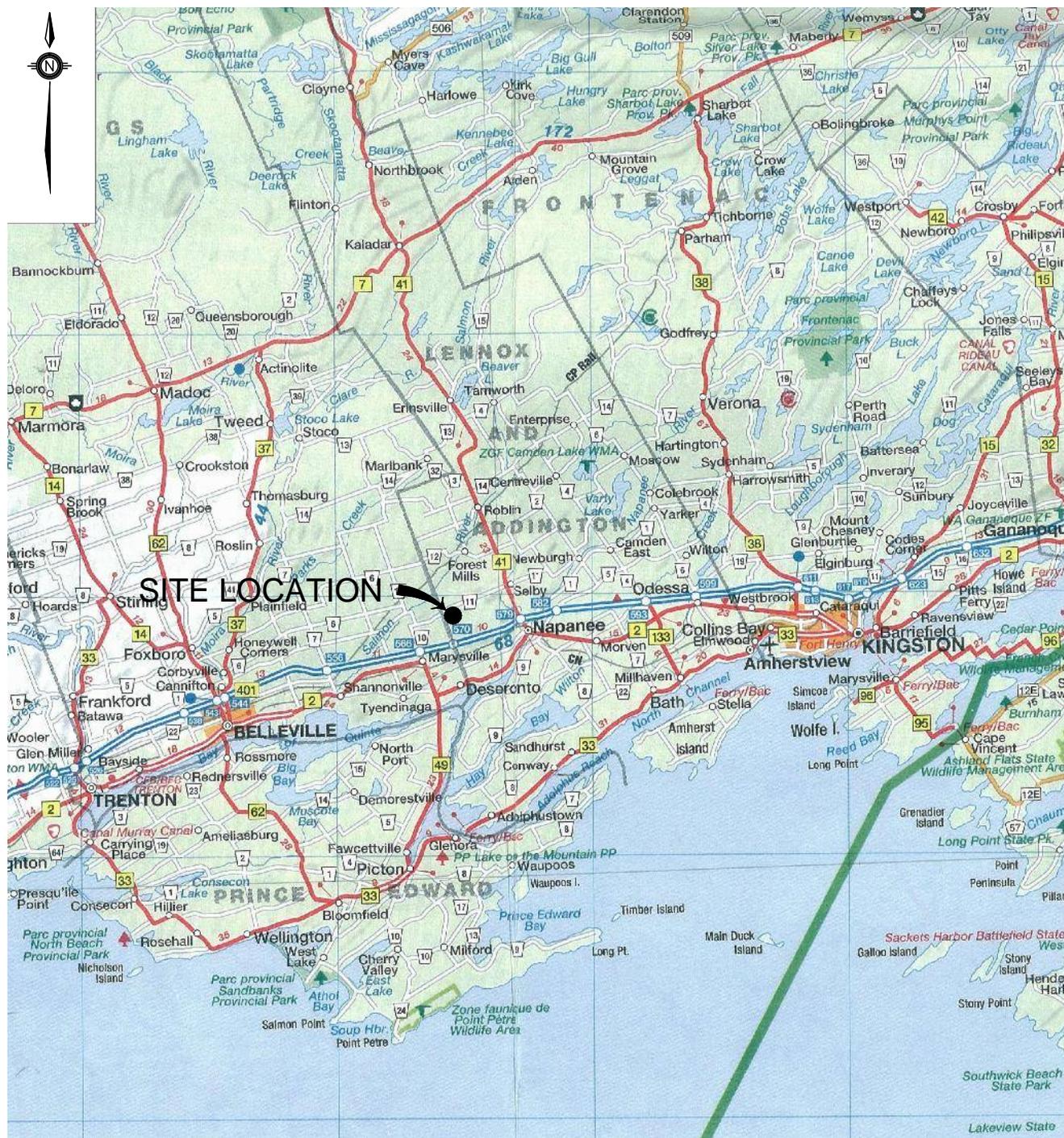
Environmental Compliance Approval No. 1688-8HZNJG dated January 10, 2012, can be found in **Appendix A.2**. This document outlines the new requirements for the operation, maintenance, monitoring, and reporting of the leachate and stormwater management systems.

Certificate of Approval (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 contaminated soil pad.

Certificate of Approval for a Waste Disposal Site No. A710003 (Soil Recycling) dated December 20, 1993 (**Appendix A.4**), with amendments, and

Certificate of Approval (Air) No. 1355-5LRN9N (Landfill Gas Collection and Flaring System) dated May 8, 2003 (**Appendix A.5**), with amendments.

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



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SHEET 1

DWN BY: TCG DATE: MAR 2004  
CHK BY: JEA SCALE: SEE BAR SCALE  
WASTE MANAGEMENT OF CANADA CORP.  
DRAWING NO. 0857013 - Figure 1

SITE LOCATION PLAN  
RICHMOND LANDFILL



 GENIVAR  
1450 First Avenue West, Suite 101,  
Owen Sound, ON, N4K 2K8  
Telephone: (519) 376-7612 / Fax: (519) 376-8008

## **2.0 Previously Submitted Reports**

Several reports have been completed and filed with the MOE in compliance with requirements of the conditions of the previous Provisional Certificate of Approval. Those prepared by GENIVAR Inc. (and formerly Henderson Paddon and 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 Environmental Monitoring Plan (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.

### **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) (b through h) of ECA No. 1688-8HZNJG.

### **Operations and Maintenance Manual Revision No. 1 – Stormwater and 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. Report was not required to be submitted to MOE, 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. Report was not required to be submitted to MOE, 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 MOE made on the initial submission. Report was submitted to MOE and is awaiting review.

### **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 MOE District Manager for approval. Report is awaiting review.

### **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. Report was submitted to MOE and is awaiting review.

### **3.0 Reporting Requirements – Environmental Compliance Approval A371203**

#### **3.1 Assessment of Engineered Facilities, Design and Operation 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 GENIVAR. No areas were discovered with slope instability, and settlement is still occurring mainly in the higher elevations of the landfill. The landfill final cover was inspected, and leachate seeps were repaired as found, and surface emission surveys were used to locate weak areas on the final cap. Vegetation of the final cap was reviewed and is becoming established since closure was completed. We conclude that no remedial work is required on the landfill mass.

##### **3.1.2 Leachate Collection System**

The existing leachate collection system and pump stations were reviewed to determine if they are operating as designed, and if any remedial work is required. WM staff regularly reviews the operation of the leachate system, and completes repairs as required. It is understood that leachate is being collected from the system, and no blockages are present. High-level alarms were installed in the north chamber, and replaced in the south pump station, in 2010. No remedial work is currently required on this system.

##### **3.1.3 Gas Collection System**

The existing gas collection system is regularly monitored by WM, to ensure that landfill gas is being collected and destroyed in the flare system. Two (2) new gas extraction wells were installed in 2012, and five (5) wells were redrilled. The gas system was operating as required in 2012, and no additional remedial work is recommended at this time.

##### **3.1.4 Stormwater Management System**

Three 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 issues in 2012, and require no remedial work. The south pond was reconstructed in 2008-2009, had no issues in 2012, and currently requires no remedial work.

### **3.1.5 Site Access and Roads**

The site entrance and roads were inspected by GENIVAR during the annual site inspection, and no problems were identified.

### **3.1.6 Leachate Holding Lagoon**

The leachate holding lagoon was inspected, and was found to be in acceptable condition. The lagoon was decommissioned by WM in 2010, and will remain dry. The lagoon remains in place as a contingency for leachate storage.

### **3.1.7 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 indicates that no contingency plans should be implemented, 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. WM regularly inspects the infrastructure, and has determined that there are no blockages in the system.

## **3.3 Existing Site Conditions**

Condition 14.3 iii of the ECA requires WM to provide plans showing the existing contours of the site.

GENIVAR completed a GPS survey on November 16, 2011 for constructed purposes upon completion of final capping conditions. No significant change has occurred in the site contours since that survey. This information, along with an updated landfill gas collection system plan, has been combined into a single drawing, which is contained in **Appendix B** of this report.

## **3.4 2012 Landfill Operations Area**

Condition 14.3 iv of the ECA requires information regarding the areas of landfilling operations during the reporting period.

No landfilling operations took place during the reporting period. On June 30, 2011, the Richmond Landfill ceased to accept waste in accordance with Condition 4.4 of the ECA, and landfilling operations ended at this time.

### **3.4.1 Equipment**

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

- a Caterpillar 966 front end loader;
- a Case International farm tractor with a rotary mower; and
- a 1989 Pelican sweeper.

If additional equipment was required for construction or other auxiliary uses, they were acquired from local contractors.

### **3.5 2013 Landfill Operations Area**

Condition 14.3 v of the ECA requires information regarding the intended area of landfilling operations during the next reporting period.

Per Condition 4.4 of the ECA, the Richmond Landfill ceased to accept waste for landfilling after June 30, 2011. As a result, no further landfilling operations will occur at the site.

### **3.6 2012 Excavation Areas**

Condition 14.3 vi of the ECA requires information regarding areas of excavation during the reporting period.

Some minor excavation was completed on the landfill mound in 2012 to complete repairs to laterals associated with the landfill gas collection system, and to complete leachate seep repairs. No excavation for borrow materials took place.

### **3.7 Cover Placement Progress**

Condition 14.3 vii of the ECA requires information regarding the progress of final cover, vegetative cover, and any intermediate cover application.

The placement of the final cover system was completed on the Richmond Landfill on September 23, 2011. Inspections took place in 2012 to ensure vegetative cover has been well established.

### 3.8 Previously Existing Site Facilities

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

#### 3.8.1 Buildings and Signage

The landfill site office is located to the south of the landfill site on the main access road. The building houses management staff, secretarial and 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.

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



On January 9, 2012, WM received approval to re-open the public drop off area, for local residents, as identified by a condition in the ECA, to dispose of waste and recyclables at approved facilities. On February 1, 2012, the public drop off area was opened to the public. Signs were added to the main gate to indicate hours of operation, residents who were permitted to use the facility, and an open/closed sign.

### **3.8.2 Staff**

WM staff manages and operates the site. Mr. Randy Harris is the Landfill Manager. The site is managed by the Eastern Canada Market Area office with Mr. Reid Cleland being the Director of Disposal Operations - Ontario.

Other landfill staff presently consists of the following:

- One (1) full time landfill manager;
- One (1) full time operator who is responsible for site maintenance, gas field monitoring and repairs;
- One (1) full time public relations and office person; and
- One (1) part time scale attendant to oversee incoming waste traffic and volumes, during the operating hours of the public drop off area.

Other equipment operators are brought on the site for contract work as required for ongoing maintenance activities.

### **3.8.3 Tonnage Control**

A truck weigh scale records net tonnages received at the site on a day-by-day basis.

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 is controlled from the office by traffic light signals and by an air phone intercom system as trucks approach 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 can be easily 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 to ensure that weights are recorded correctly. Load cells have also been repaired as required.

### **3.8.4 Soil Recycling Pad**

A soil recycling pad is located to the east of the existing maintenance building 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 use ended. Surface runoff from this pad is collected at an oil/sediment separator located at the south end of the pad. The oil and sediment captured by the separator is pumped out as required and trucked offsite by a licensed hauler.

### **3.8.5 Small Vehicle Transfer Area**

The public drop off area was approved for operation by the MOE on January 9, 2012, subject to the conditions listed in ECA No. A371203, and reopened to the public on February 1, 2012. This area is used for small vehicles off loading waste, recyclables and compostable materials. This practice facilitates the transfer of material from the smaller vehicles into the roll-off bins.

In 2009, WM constructed a reuse centre where residents could donate and exchange reusable goods. This building is located in the public drop off area. WM began participating in the Ontario Electronic Stewardship program and the Ontario Tire Stewardship program, and collects electronics and tires for recycling offsite. WM is also a member of Stewardship Ontario's Municipal Hazardous or Special Waste (MHSW) program, and collects paint and single use batteries for disposal offsite.

White goods, including those which have been 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.

### **3.8.6 Landfill Gas Collection and Flaring System**

The landfill gas collection and flaring system 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 MOE on December 21, 1999. In 2003, C of A (Air) No. 1355-6LRN9N was issued by the MOE, which revoked and replaced the previous C of A. Subsequent expansions and upgrades to the gas collection system have been made since the installation of the initial system in order to burn the landfill gas produced by the decomposing waste.

The C of A permits 54 gas wells, 12 leachate manholes, and nine (9) clean-outs to be connected to the gas extraction system. WM reports that the present system collects gas from five (5) leachate clean-outs, four (4) leachate collection manholes and 45 vertical gas wells, of the 59 wells installed. A total of 14 wells have been decommissioned. Please refer to the drawing in **Appendix B** for the location of the decommissioned wells.

Regular operation and maintenance of the landfill gas collection and flare system was completed in 2012. The landfill gas flare has been effective at reducing odour around the landfill site. In the rare occurrence of flare shutdown, operators, who are automatically notified by a paging system, attend the site to restart the flare or correct any alarm situations. The flare has operated successfully to date.

In late 2011, WM applied to the MOE to modify the C of A (Air) to permit the operation of a candlestick flare at the Richmond Landfill. The candlestick flare installation would address a contingency plan for the

landfill gas collection system, in that it would be operational only when the enclosed flare is shut down for maintenance or repair. A review of WM's application is currently being undertaken by the MOE.

### **3.8.7 Sedimentation Ponds**

The three sedimentation ponds remained in place in 2012. Pond discharge was previously controlled and not permitted without prior testing and approval from MOE District staff. On January 10, 2012, the MOE issued ECA No. 1688-8HZNJG, which revoked and replaced the previous C of A for sewage works. The ECA allows 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.

## **3.9 Facilities Installed in 2012**

Condition 14.3 ix of the ECA requires information about the installation of any facilities at the site during the reporting period.

In 2012, approximately 60 monitoring wells were installed in the northern portion of the landfill property. These wells were installed in conjunction with environmental assessment work for the Beechwood Road Environmental Centre.

Also in 2012, the public drop off area was approved for operation, allowing local residents, as governed by a condition in the ECA, to dispose of waste and recyclables at the landfill, which are then removed to an approved facility for final disposal twice per week as per a condition of the ECA. The existing drop off area, previously shut down on June 30, 2011, is utilized for this activity.

## **3.10 Site Preparations and Facilities Installed in 2013**

Condition 14.3 x of the ECA requires information regarding any site preparation or installation of facilities planned for the next reporting period.

At this time, no site preparations or facilities are planned to be installed in 2013.

## **3.11 Calculations**

Condition 14.3 xi of the ECA requires calculations regarding the volume of waste, daily and intermediate cover, and final cover deposited or placed at the site during the reporting period, and a calculation of the total volume of site capacity used during the reporting period.

No waste or cover materials were placed in 2012. The installation of the final cover system on the uncapped portion of the landfill was completed in September 2011.

### 3.12 Leachate Quantities

Condition 14.3 xii of the ECA requires a summary of the quantity of any leachate or pre-treated leachate removed from the site during each operating week.

In 2012, leachate continued to be hauled to Napanee for treatment. Loads are collected from the site, manifested and then discharged at the septage receiving facility located at Enviro Park Lane and West Street in the Town of Greater Napanee. Leachate continues to be extracted at the landfill site at the lowest portions on Phases 2 and 4 and hauled as required for treatment off-site.

In the event that leachate cannot be hauled from the site due to conditions at the receiving plant, etc., leachate or leachate-impacted water will be stored in the leachate-holding lagoon located to the north of the site to contain leachate and to prevent spills. Once leachate treatment resumes at the receiving plant, this liquid is then hauled to the sewage treatment plant for treatment and disposal. This is a temporary measure and is outlined in the leachate management plan submitted to the MOE. In 2010, this pond was dewatered, and allowed to drain freely in future rainfall events. In the event that this contingency is required in the future, the pond could be used again.

WM inspects the site each day for leachate seeps and problem areas in the final cap. If leachate seeps are encountered, they are promptly repaired to avoid any surface water contamination. Generally, leachate seeps are excavated and granular material and dry clay are replaced and packed. When cracks develop in other areas of the final cap and the potential for gas migration is present, the final cap is scarified or re-compacted and additional clay may be placed in the area to prevent gas migration. Through the continuous removal of leachate to the leachate treatment facilities and the extraction of landfill gas through the landfill gas collection and disposal system, the potential for leachate seeps and gas outbreaks are minimized and the potential for any off-site impact is reduced.

**Table 3.1**, located on the following page, details the weekly quantity of leachate removed from the Richmond Landfill. The volumes presented in the table were converted from the tonnage determined in the truck at the site scale, and converted using 1 tonne = 1m<sup>3</sup>.

**TABLE 3.1**  
**2012 Weekly Leachate Quantities**

WEEK ENDING	TOTAL LEACHATE REMOVED - NAPANEE (m <sup>3</sup> )	WEEK ENDING	TOTAL LEACHATE REMOVED - NAPANEE (m <sup>3</sup> )
1/7/2012	463.91	7/14/2012	246.11
1/14/2012	462.76	7/21/2012	245.81
1/21/2012	579.23	7/28/2012	232.64
1/28/2012	466.14	8/4/2012	228.76
2/4/2012	640.88	8/11/2012	194.42
2/11/2012	349.03	8/18/2012	188.31
2/18/2012	349.24	8/25/2012	157.64
2/25/2012	305.55	9/1/2012	156.87
3/3/2012	305.14	9/8/2012	157.40
3/10/2012	422.03	9/15/2012	272.34
3/17/2012	422.47	9/22/2012	190.67
3/24/2012	525.57	9/29/2012	368.95
3/31/2012	452.00	10/6/2012	208.07
4/7/2012	276.77	10/13/2012	186.80
4/14/2012	407.14	10/20/2012	216.44
4/21/2012	317.50	10/27/2012	216.43
4/28/2012	393.30	11/3/2012	418.84
5/5/2012	393.63	11/10/2012	291.19
5/12/2012	466.52	11/17/2012	205.10
5/19/2012	349.45	11/24/2012	213.48
5/26/2012	273.95	12/1/2012	174.75
6/2/2012	303.20	12/8/2012	260.79
6/9/2012	318.72	12/15/2012	721.18
6/16/2012	276.35	12/22/2012	582.92
6/23/2012	273.31	12/29/2012	349.64
6/30/2012	257.66	12/31/2012	116.81
7/7/2012	215.58	<b>TOTAL</b>	<b>17,069.39</b>

### 3.13 Waste Tonnage Summaries

Condition 14.3 xiii of the ECA requires the weekly, maximum daily, and total annual quantity (tonnes) of waste received at the site.

**Tables 3.2** and **3.3** summarize weekly, monthly and total annual quantity of volumes in metric tonnes, received at the public drop off area for the calendar year 2012. Weigh scale operators recorded the tonnages, as noted in the table on the following page:

**TABLE 3.2**  
**2012 Weekly Waste Tonnage Totals**

<b>WEEK ENDING</b>	<b>TOTAL WASTE RECEIVED (TONNES)</b>	<b>WEEK ENDING</b>	<b>TOTAL WASTE RECEIVED (TONNES)</b>
2/4/2012*	2.71	7/28/2012	2.13
2/11/2012	1.52	8/4/2012	3.51
2/18/2012	0.63	8/11/2012	3.36
2/25/2012	1.27	8/18/2012	2.65
3/3/2012	0.65	8/25/2012	4.06
3/10/2012	1.98	9/1/2012	2.04
3/17/2012	4.70	9/8/2012	1.25
3/24/2012	3.35	9/15/2012	3.16
3/31/2012	1.59	9/22/2012	1.98
4/7/2012	2.58	9/29/2012	3.25
4/14/2012	4.15	10/6/2012	1.98
4/21/2012	2.43	10/13/2012	2.95
4/28/2012	2.87	10/20/2012	3.08
5/5/2012	5.54	10/27/2012	2.59
5/12/2012	4.37	11/3/2012	2.63
5/19/2012	4.04	11/10/2012	2.60
5/26/2012	3.19	11/17/2012	2.52
6/2/2012	1.98	11/24/2012	1.40
6/9/2012	3.43	12/1/2012	2.26
6/16/2012	2.38	12/8/2012	1.75
6/23/2012	1.03	12/15/2012	1.91
6/30/2012	3.58	12/22/2012	0.83
7/7/2012	2.54	12/29/2012	0.74
7/14/2012	1.87	12/31/2012**	0
7/21/2012	3.85		
<b>TOTAL</b>	<b>68.23</b>	<b>TOTAL</b>	<b>54.63</b>

\*Public drop off re-opened to the public on February 1, 2012.

\*\*No waste received as public drop off facility was closed.

**Total of Waste Received = 68.23 t + 54.63 t = 122.86 tonnes**

**TABLE 3.3**  
**2012 Monthly Waste Tonnage Totals**

<b>MONTH</b>	<b>TOTAL WASTE RECEIVED (TONNES)</b>
January	0
February	6.50
March	11.90
April	12.03
May	18.19
June	11.35
July	10.39
August	15.21
September	10.05
October	11.12
November	9.77
December	6.35
<b>TOTAL</b>	<b>122.86</b>

NOTE: Total tonnage shown does not include recyclable material.  
Tonnage received at public drop off area only. Public drop off was re-opened February 1, 2012.

The 2012 waste tonnage received, outlined in **Table 3.3**, was 122.86 tonnes of waste, which was compiled from the monthly summary of wastes received. The licensed tonnage for the public drop off area is a maximum of 50 tonnes per day (waste and recyclables), with 25 occasions where the public drop off area can receive up to 100 tonnes per day.

The maximum daily tonnage received was on May 19, 2012 and was 2.53 tonnes.

In addition, this year, WM diverted paint and electronic waste (e-waste) to off-site recycling centers. Approximately 4.32 tonnes of paint was diverted from the waste stream, along with 9.43 tonnes of e-waste was diverted. This is not included in the total tonnage received at the public drop off area. Additional material was directed through on-site recycling programs at the mini transfer area but tonnages are not available for plastics, glass and fibres. As well, 18.11 tonnes of recycled tires were diverted from the waste stream, along with 6.55 tonnes of recyclable metal.

### **3.14 Summary of Complaints**

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

Over the years, a few immediate neighbours have occasionally contacted WM regarding odours from the landfill site. The normal decomposition of waste causes odours from the site. WM implemented the operation of a landfill gas recovery system in 2001 to eliminate the odour source. 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 is flared off in a totally enclosed flare to the south of the landfill footprint. The landfill flare was commissioned in April 2001 and successfully reduces landfill gas odours.

The weather station is located south of the office area. The station monitors wind speed, wind direction, temperature, rainfall, solar radiation and relative humidity. Recorded local weather patterns help in addressing odour complaints.

In 2009, the MOE conducted a 3-week odour survey in June and July, and found no negative impacts on the local air quality. In addition, the MOE 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.

WM also continued with the surface emission survey study in 2012, where a consultant measured surface emissions to identify areas of weak cap. This year, surface emission events were conducted in April, July, and November. In the April event, no areas were identified above 500ppmv, while the events in July and November yielded two areas and one area above 500ppmv, respectively. The final cover system in the exceedance areas were immediately inspected and repaired as needed.

WM 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. In addition, when odour complaints are received at the landfill site, WM staff are dispatched to investigate the source of the odour and record the conditions that may have influenced the odour. WM is able to complete this response plan if complaints are received directly by WM. If complaints are delayed or not directed towards WM, the potential odour source cannot be investigated nor can corrective action be taken if the odour was potentially landfill related.

In 2010, in compliance with Condition 109 of the previous C of A, WM posted a sign 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 are provided on the sign.

In 2012, there were four (4) complaints received by WM. Three (3) of the four (4) complaints were for odour, for which the above procedure was used to address the complaints. Please refer to **Appendix C** for the complaint forms. One complaint, relayed from the MOE District Office in Kingston, was not substantiated at the site since all systems were operational at the time of the complaint, and the wind was not blowing in the direction of the complainant. Two (2) additional odour complaints were relayed from neighbours, but odours were determined to be from other sources. A fourth complaint was received regarding vermin. While it was determined that the landfill site was not the source, WM offered the complainant live traps to assist in eradicating the vermin.

### **3.15 Operational Problems**

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

In the spring of 2012, a leachate pump in the south chamber was replaced. A ball valve was replaced in the south chamber in the spring of 2012 due to slight leakage noted in the original component.

No other operational problems were encountered at the site in 2012.

### **3.16 Refusal of Waste**

Condition 14.3 xvi 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 2012, waste was refused for acceptance at the public drop off area, as it was generated in areas outside of the approved service areas as defined by Condition 5.15 of the ECA. There were no incidents where unacceptable waste was brought to the site and refused.

### **3.17 Leachate Collection System Cleaning and Inspection**

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

In 2012, WM regularly inspected the leachate pumps and system each day that hauling of leachate occurred. On May 30, 2012, the leachate lines were flushed and cleaned. No blockages or issues were reported from this activity. On June 25, 2012, the leachate collection system was flushed and camera inspected in accordance with Condition 13.10 of ECA No. A371203. A minor build up was encountered on the west side of the landfill between manholes MH-10 and MH-11. This area was re-flushed, and no further problems were recorded.

### **3.18 Financial Assurance Summary**

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

In 2012, the financial assurance amount of \$12,192,739 was provided to the Director for the Richmond Landfill, as per Condition 2.6 (i) of ECA No. A371203.

### **3.19 Statement of Compliance**

Condition 14.3 xx 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 inspections completed in 2012, to the best of our knowledge, GENIVAR 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. WESA has provided a memorandum regarding compliance with the environmental monitoring and reporting requirements of the ECA, which can be found in **Appendix D**.

Monitoring programs have identified elevated levels of some monitoring parameters at locations to the south of the landfill. Detailed explanation of sample results can be found in the spring and fall 2012 semi-annual monitoring reports prepared by WESA. WM is currently engaged in field investigation in coordination with the MOE to determine the extent of a Contaminant Attenuation Zone (CAZ) which will ultimately be incorporated into the site's ECA. A copy of correspondence between MOE and WM pertaining to this item can be found in **Appendix E**.

### **3.20 Confirmation of Site Inspection Program**

Condition 14.3 xxi 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 GENIVAR 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.

It is noted that on May 4, 2012, the MOE completed an industrial sewage inspection at the Richmond Landfill to verify compliance with ECA No. 1688-8HZNJG. An inspection was also completed on the public drop off area on this date, to verify compliance with ECA No. A371203. No issues were identified by the MOE. A copy of the inspection reports and respective findings can be found in **Appendix F**.

### **3.21 Operations, Equipment, or Procedures Changes**

Condition 14.3 xxii of the ECA requires documentation of any changes in operations, equipment, or procedures employed at the site.

On January 9, 2012, the MOE issued an amendment to ECA No. A371203, approving the operation of the public drop off area, subject to the terms and conditions listed in the approval. WM re-opened the public drop off area on February 1, 2012. One (1) part-time staff member was re-hired to manage the scalehouse during the public drop off area's hours of operations.

On January 10, 2012, the MOE issued an Environmental Compliance Approval for the stormwater and leachate management systems at the Richmond Landfill, which revoked and replaced the previous Certificate of Approval. The ECA permitted WM to operate the sedimentation ponds in a free flowing condition as designed, instead of operating the discharge outlet valves in a closed position and requiring testing and MOE approval prior to discharge. As part of this approval, WM was required to submit a Stormwater Contingency and Remedial Action Plan to the MOE District Manager within six (6) months of the date of issuance for the ECA. On March 22, 2012, WM submitted this plan, which is currently under review by the MOE.

On September 14, 2012, WM submitted an application to amend ECA No. A371203, regarding the operation of the public drop off area. 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 weeks. A review of WM's application is currently being undertaken by the MOE.

### **3.22 Recommendations**

Condition 14.3 xxiii of the ECA requires recommendations regarding any proposed changes in operations of the site.

GENIVAR does not have any recommendations for changes in the site operations.

## **4.0 REPORTING REQUIREMENTS – ENVIRONMENTAL COMPLIANCE OF APPROVAL 1688-8HZNJG**

On January 10, 2012, the MOE issued Environmental Compliance Approval No. 1688-8HZNJG, which revoked and replaced the previous Certificate of Approval. 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**

Leachate haulage from the site to the Napanee (now part of the Town of Greater Napanee) sewage system began in 1996. Leachate is regularly hauled from the landfill by Sutcliffe Sanitation Services Ltd. and discharged directly to the sewage system. Close communication between the Town, WM and Sutcliffe Sanitation is maintained to determine if leachate may be accepted for treatment. Sutcliffe Sanitation is the common hauler of sludge from the sewage treatment plant and leachate from the landfill site. Before picking up a load of leachate, WM confirms with the Town that leachate can be hauled on that particular day. In the event that the Town is operating on high flows, the Town will notify WM that no leachate can be accepted until levels are reduced. WM will in turn notify Sutcliffe Sanitation.

During the winter of 2003/2004, WM constructed a leachate/septage dumping facility within the Town of Napanee. The dumping facility is located at Enviro Park Lane and West Street within the Town of 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 Napanee be unable to treat leachate. Approval has been given to discharge leachate at Cobourg,

however, leachate was not hauled to Cobourg for treatment in 2012. Letters of approval for alternate leachate treatment sites can be found in **Appendix G** of this report.

#### 4.1.1 Leachate Quantities

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

**Table 4.1** indicates the leachate quantities trucked from the site to the Napanee sewage treatment plant in 2012. The average rate of removal for treatment was 46.77 m<sup>3</sup>/day. It is recommended that leachate removal continue.

**TABLE 4.1**  
**2011 Monthly Leachate Quantities**

Month	Napanee (m <sup>3</sup> )
January	2,321.61
February	1,483.93
March	1,938.41
April	1,496.74
May	1,626.74
June	1,184.29
July	1,053.86
August	812.28
September	989.36
October	1,043.93
November	1,087.17
December	2,031.34
<b>Total</b>	<b>17,069.39</b>

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

#### 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.

In 2012, there were no operating problems encountered or corrective actions taken for the leachate management system. No issues from the treatment of the leachate at the sewage treatment plant has arisen, to our knowledge.

#### **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.

In 2012, regular inspection of the leachate pumps and system took place each day that leachate was hauled from the site. On May 30, 2012, the leachate lines were flushed and cleaned. No blockages or issues were reported. On June 25, 2012, in accordance with Condition 13.10 of ECA No. A371203, the leachate collection system was camera inspected. A slight build up was recorded on the west side of the landfill between manholes MH-10 and MH-11. The area was reflushed, and no further problems were encountered.

#### **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 2012, one (1) pump was replaced in the south pumping chamber, and a ball valve was replaced due to slight leakage detected in the original component.

#### **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.

Four (4) complaints were received in 2012. Three (3) of the four (4) complaints were for odour, which were immediately addressed by WM (following the complaints procedures previously described in **Section 3.14**) at the time the complaints were received. A fourth complaint was received for vermin, which was addressed by WM (also refer to **Section 3.14**, and **Appendix C** for the complaint logs).

#### **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.

In 2012, there were no leachate events that were a by-pass, spill, or abnormal discharge event.

### **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.

WESA has prepared a memorandum to satisfy this section of the ECA. The reader is directed to **Appendix I** 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.

In 2012, there were no operating problems encountered or corrective actions taken 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 2012 without any maintenance required on the ponds. The ponds are regularly inspected to ensure their operation meets the ECA, and no remedial work was required in 2012.

#### **4.2.4 Summary of Complaints Received**

In 2012, there were no complaints received regarding the ponds.

#### **4.2.5 Summary of By-pass, Spill or Abnormal Discharge Events**

In 2012, there were no stormwater events that were a by-pass, spill, or abnormal discharge event. Quarterly toxicity testing was conducted as per Condition 8 (3) of the ECA to confirm no lethality against *Daphnia magna* and rainbow trout. All test results yielded no lethality to either species, as described by the memorandum prepared by WESA that is located in **Appendix I** of this report.

## 5.0 General

In 2012, WM completed ongoing maintenance and operation of the landfill site. Active litter control, gas management, leachate treatment and active monitoring of the landfill site resulted in no operational impacts on the surrounding area. The continued use of the landfill gas collection and flaring system, and system maintenance and upgrades, has reduced any potential landfill gas odours. 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 public drop area was re-opened in 2012 to service local customers, subject to the terms and conditions of the ECA. The entire landfill mound has had final cover in place since September 2011, and is regularly inspected.

Leachate extraction and treatment continues at the landfill site, and 17,069.39 m<sup>3</sup> of leachate has been removed during the past year, or approximately 46.77 m<sup>3</sup>/day. It is recommended that leachate removal off site continue.

The landfill gas extraction and flaring system successfully collected and flared the landfill gas generated from the site. Continued operation and expansion of this system will be completed in the coming years to ensure that odours are minimized around the landfill site. Additional wells may be installed to replace non-functioning wells.

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

Since the landfill site has entered the post-closure care period, we conclude the landfill is managed and operated in an environmentally sound and orderly manner in the post-closure period. No problems have been caused by the public drop off facility operating onsite.

Respectfully submitted:

**GENIVAR Inc.**

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Beverly D. Leno, C.E.T. rcji  
Environmental Technologist  
JEA/bdl

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Jeff E. Armstrong, P. Eng.  
Director, Solid Waste

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## Appendix A

### Environmental Compliance Approvals and Certificates of Approval

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Appendix A.1

Environmental Compliance Approval No.  
A371203, dated January 9, 2012

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RECEIVED  
2012/01/09



Ministry of the Environment  
Ministère de l'Environnement

**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A371203

Issue Date: January 9, 2012

Waste Management of Canada Corporation  
2301 Carp Rd  
Ottawa, Ontario  
K0A 1L0

Site Location: Richmond Landfill Site  
Lot Pt 1, 2, 3, Concession 4  
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 , as follows:*

*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* ;

**"EAB"** refers to the Environmental Approvals Branch of the Ministry of the Environment;

**"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.

"*MOE* " or "*Ministry* " refers to the Ontario Ministry of the Environment;

"*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;

"*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* " or "*O. 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.

*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

### **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 *Certificate* 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-evaluation 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-evaluation calculation is the current approach deemed acceptable by the *Ministry* .

### **Proposed Payment Schedule**

- 2.5. The *Owner* shall ensure that financial assurance in a form acceptable to the *Director* in the amount of **\$13,236,992.00** has been provided to the *Director* . If these amount has not been provided, the *Owner* shall within thirty (30) days of issuance of this *ECA* , provide to the *Director* the financial assurance as required by this condition in a form that is in a form acceptable to the *Director* .
- 2.6. The *Owner* shall provide the *Ministry* financial assurance (total amount, not additional amount) in a form acceptable to the *Director* as follows for the following years:
- i. March 31, 2012 - **\$12,192,739.00**
  - ii. March 31, 2013 - **\$ 11,755,105.00**

### **Updated Review Report**

- 2.7 A revised or new financial assurance program shall be submitted to the *Director* by no later than **March 31, 2013** 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 No waste shall be received, accepted, disposed or transferred at the *Site* unless appropriate financial assurance is received.
- 2.9 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 CONSTRUCTION, INSTALLATION and PLANNING

#### Major Works

- 3.1 (1) The final detailed design of *Major Works* shall include the following:
- a. design drawings and specifications;
  - b. a detailed quality assurance / quality control (QA/QC) program for construction of the major work, including necessary precautions to avoid disturbance to the underlying soils; and
  - c. details on the monitoring, maintenance, repair and replacement of the engineered components of the major work, if any.
- (2) Maintenance or replacing components (i.e. piping for the gas collection system) related to existing *Major Works* are not considered *Major Works* under Section 3.0 of the *ECA*
- 3.2 Any design optimization or modification that is inconsistent with the conceptual design shall be clearly identified, along with an explanation of the reasons for the change.
- 3.3 Each major work shall be constructed in accordance with the approved final detailed design and the QA/QC procedures shall be implemented as proposed by the *Owner* . Any significant variances from the conceptual design for the *Site* shall be subject to approval by the *Director* .
- 3.4 As-built drawings for all *Major Works* shall be retained on site and made available to *Ministry* staff for inspection.

### 4.0 GENERAL OPERATIONS

#### Proper Operation

- 4.1 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

- 4.2 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. Waste disposal area and development;
- d. Nuisance management;
- e. Leachate management;
- f. Landfill gas management;
- g. Surface water/Stormwater management;
- h. Inspections and monitoring;
- i. Contingency plans and emergency procedures;
- j. Complaints; and,
- k. Reporting and record keeping.

4.3 The operations and procedures manual shall be:

- a. retained at the *Site* ;
- b. reviewed on an annual basis and updated by the *Owner* as required; and
- c. be available for inspection by *Ministry* staff.

#### **Site Closure**

4.4 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**

4.5 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).

#### **Yearly Waste Limit**

4.6 No more than 125,000 tonnes of waste per year may be accepted at the *Site* .

#### **Service Area**

4.7 Only waste that is generated in the Province of Ontario shall be accepted at the *Site* .

#### **Hours of Operation**

4.8 Waste shall only be accepted at the *Site* during the following time periods:

- i. 8 am to 5 PM - Monday to Friday (except statutory holidays)
- ii. 8 am to 1 PM - Saturday

4.9 With the prior written approval of the *District Manager* , the time periods may be extended to accommodate seasonal or unusual quantities of waste.

4.10 The *Owner* may provide limited hours of operation provided that the hours are posted at the

landfill gate and that suitable notice is provided to the public of any change in operating hours.

- 4.11 Upon reasonable notice to the *Director*, contingency actions may take place outside normal hours of operation. Emergency response may occur at any time as required.

#### **Site Security**

- 4.12 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**

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

#### **Waste Inspection Procedures**

- 4.14 The *Operator* shall develop and implement a program to inspect waste to ensure that the waste is of a type approved for acceptance under this *ECA* .

#### **Waste Inspection and Deposition**

- 4.15 All loads of waste must be properly inspected by trained *Site* personnel prior to acceptance at the *Site* and waste vehicles must be diverted to appropriate areas for waste disposal.
- 4.16 The *Owner* shall deposit waste in a manner that minimizes exposure area at the landfill working face and all waste shall be compacted before cover is applied.

#### **Litter Control:**

- 4.17 All loose, windblown litter shall be collected and disposed of at an approved disposal facility.

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

- 4.18 The *Site* shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.
- 4.19 No scavenging is to occur at the *Site* .

#### **Dust**

- 4.20 The *Owner* shall control fugitive dust emissions from *Site* sources including but not limited to *Site* roads, stockpiled cover material and closed landfill area prior to seeding especially during times of dry weather conditions. 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

- 4.21 The *Owner* shall comply with noise criteria in *MOE* Guideline entitled "Noise Guidelines for Landfill Sites."

## 5.0 SITE OPERATIONS

### Cover Material

- 5.1
- i. Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm of soil cover or an approved thickness of alternative cover material shall be placed.
  - ii. 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  $1 \times 10^{-8}$  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*.
  - iii. The *Owner* shall ensure that no contaminated soils are used in the final cover.

### Cleaning Leachate Collection System

- 5.2 The leachate collection system piping for each stage of the landfill shall be cleaned on an annual basis, or more frequently as circumstances require, in order that the leachate collection system operates properly. Visual inspections of the leachate collection system shall be conducted on a quarterly basis to determine the need for more frequent cleaning.

### Leachate Sump Pits

- 5.3 A leachate maintenance level of no greater than 0.66 metres shall be maintained in the north pumping chamber and documented each working day.
- 5.4 Appropriate alarms shall be installed to warn *Site* personnel of rising leachate levels within the sump pits so that the *Owner* can take appropriate action to prevent an overflow.

### Surface Water

- 5.5 The *Owner* shall take all appropriate measures to minimize surface water from coming in contact with waste. Temporary berms and ditches shall be constructed around active waste disposal areas to prevent extraneous surface water from coming in contact with the active working face.
- 5.6 The *Owner* shall not discharge surface water to receiving water bodies without an approval under

Section 53 of the *OWRA* .

### **Compost Pad Area and Compost Pond**

- 5.7 The *Owner* shall stop operation of the compost pad by no later than **September 30, 2011**.
- 5.8 The *Owner* shall removed all compost material (finished, curing compost, bulking material) from the *Site* by no later than **September 30, 2011**.

### **Construction and Operation of Phytoremediation System**

- 5.9. (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 12 feet.
- (5) Where vegetation reaches or exceeds a height of 12 feet, the *Owner* shall prune the vegetation forthwith.
- (6) Within seven (7) days of completion of planting of the phytoremediation system as identified in Item 38 of Schedule "A", the *Owner* shall notify the *District Manager* in writing that the planting has been completed.

### **Monitoring of Phytoremediation System**

- 5.10 (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, M29, M30, M31, M38, M66-2, M67-2, M100, M101, M102 and M103
  - b. Intermediate Bedrock Zone - M3A-3, M5-3, M6-3, M74 and M75
- (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 - M29, M66-2, M67-2, M101, M102 and M103
  - b. Intermediate Bedrock Zone - M5-3, M6-3, M74 and M75
- (3) For the monitoring wells identified in Condition 5.10 (2), the *Owner* shall analyze groundwater

for determining the quality of groundwater around the phytoremediation system in the northwest corner of the *Site* based on the *EMP* approved prior to this notice and any future approved changes identified in future amendments.

## Reporting

5.11 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;

## 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

### Daily Inspections and Log Book

- 7.1 An inspection of the entire *Site* and all equipment on the *Site* shall be conducted each day the *Site* 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.
- 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 daily 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.

### Monthly Records

- 7.4 Monthly *Site* inspection records in the form of a written log or a dedicated electronic file shall include the following:
- i. a summary of wastes received and refused for disposal at the *Site* ;
  - ii. the area of the *Site* in which waste disposal operations are taking place;
  - iii. a calculation of the total quantity (tonnes) of waste received at the *Site* during each operating day and each operating week;
  - iv. the amount of any leachate removed, or treated and discharged from the *Site* ;
  - v. a record of litter collection activities and the application of any dust suppressants;
  - vi. a record of the daily inspections;
  - vii. a description of any out-of-service period of any control, treatment, disposal or monitoring facilities, the reasons for the loss of service, and action taken to restore and maintain service;
  - viii. type and amount of daily, intermediate and final cover used;
  - ix. maintenance and repairs performed on equipment employed at the *Site* ;
  - x. complaints received and actions taken to resolve them;
  - xi. emergency situations and actions taken to resolve them; and

- xii. any other information required by the *District Manager* .

### **Site Inspections**

7.5 During *Site* operations, the *Owner* shall inspect the site monthly for the following items but not limited to these items:

- i. General settlement areas or depressions on the waste mound;
- ii. Shear and tension cracks on the waste mound;
- iii. Condition of surface water drainage works;
- iv. Erosion and sedimentation in surface water drainage system;
- v. Presence of any ponded water on the waste mound;
- vi. Adequacy of cover material;
- vii. Evidence of vegetative stress, distressed poplars or side slope plantings on or adjacent to the waste mound;
- viii. Condition of groundwater monitoring wells and gas wells;
- ix. Presence of insects, vermin, rodents and scavenging animals on or adjacent to the waste mound;
- x. Condition of fence surrounding the *Site* ; and,
- xi. General *Site* appearance.

7.6 The *Owner* shall inspect the waste mound and surrounding areas for the presence of leachate seeps as required by Condition No. 13.5.

### **Record Retention**

- 7.7 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.
- 7.8 The *Owner* shall retain all documentation listed in Schedule "A" for as long as this *ECA* is valid.
- 7.9 All monthly summary reports are to be kept at the *Site* until they are included in the Annual Report.
- 7.10 The *Owner* shall retain employee training records as long as the employee is working at the *Site* .
- 7.11 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, repaired, replaced or decommissioned as required. Any well being decommissioned shall be decommissioned in accordance with good standard practice that will prevent contamination through the abandoned well and in accordance with 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 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. Monitoring programs shall be carried out for groundwater, surface water and landfill gas on an interim basis in accordance with Item 45 in Schedule "A" until the report required by Condition 8.5 (b) has been approved by the *Director* .
  - b. The *Owner* of the *Site* must provide an addendum report to the report entitled " *Environmental Monitoring Plan - WM Richmond Landfill Site* " prepared by WESA Inc dated June 29, 2010 to the *Director* for approval, with copies to the *District Manager*, that addresses additional information required as indicated in Item 48 in Schedule "A". The report shall be submitted within sixty (60) days upon the Ministry's Eastern Region Technical Support Section acceptance of the findings of a technical report to be prepared by the *Owner* that details the findings of the groundwater investigation. Pending final approval of the *EMP* and the addendum by the *Director* , the *Owner* shall implement the amended *EMP* upon approval by the *Director* .
  - c. The addendum report for the *EMP* must include adequate detail on groundwater and surface water monitoring locations, monitoring frequencies, parameters etc.
  - d. The addendum report for the *EMP* shall also include a monitoring program to identify odour issues along with appropriate odour abatement activities and a communication plan for the public.
  - e. Any off site exceedances 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.

## Compliance Criteria

- 8.6 The *Site* shall be operated in such a way to ensure compliance with the *MOE* '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* .

## 9.0 CONTINGENCY PLANS

### Groundwater and Surface Water Impact Contingency Plan

- 9.1 In conjunction with the report required by Condition No 8.5 (b), the *Owner* shall submit for approval to the *Director* an addendum report that provides an update to the memorandum entitled "*Groundwater and Surface Water Impact Contingency Plan* " prepared by WESA Inc. dated June 29, 2010 that incorporates the additional information collected from the groundwater investigations to be conducted as detailed in Items 47 and 50 of Schedule "A". The addendum report for the Groundwater and Surface Water Impact Contingency Plan will include but not be limited to the following:

- i. Trigger mechanisms associated with the groundwater and surface water monitoring programs. These mechanisms, based on water quality monitoring data, will identify when additional measures are required to be implemented in order to ensure on-going compliance with water quality criteria;
- ii. Quantifiable timelines for each step of the impact contingency plans; and
- iii. A plan to deal with any off site groundwater and surface impacts that can be attributed to landfill operations over the long term including during landfill operation and during post-closure.

### 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* .

#### **Landfill Gas Contingency Plan**

- 9.4 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**

- 9.5 Within 12 months of issuance of this notice, the *Owner* shall submit to the *Director* for approval, with copies to the *District Manager* , a public notification plan that shall address the steps to be taken to notify the adjacent property owners, the *PLC* , the Town of Greater Napanee, Township of Deseronto, Tyendinaga Township and the Mohawks of the Bay of Quinte that the *Owner* will be initiating contingency plans as approved by this *ECA* .

#### **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 The *Owner* shall, in consultation with the PLC, develop a terms of reference for the PLC that will describe how the PLC shall carry out business, and the terms of reference shall include a dispute resolution strategy to resolve issues and disagreements between the PLC and the *Owner* . The *Owner* shall provide the terms of reference to the *Director* and the *Regional Director* for placement on the public record.

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 PLC shall not exercise any supervisory, regulatory, approval, legal or other decision making role with respect to the operations at the *Site* .

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

10.7 The PLC shall operate under a Terms of Reference of the committee. Any changes to the Terms of Reference for the PLC shall be made by the PLC. Any changes to the Terms of Reference for the PLC shall be provided to the *Ministry* for information purposes.

10.8 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.

10.9 The function of the *Ministry* member will be to provide advice, information and input to other members as required.

10.10 The PLC shall determine the appropriate meeting frequency and review it on an annual basis.

10.11 Minutes and agendas of meetings shall be printed and distributed on a timely basis.

10.12 The PLC shall have reasonable access to the *Site* and its landfill related facilities for the purpose of carrying out its objective and mandate and the *Owner* 's consultants' reports relating to *Site* operations shall be provided to the PLC.

- 10.13 The *Owner* shall provide the PLC with access to the *Owner* 's consultants as required and consultants reports in accordance with protocols agreed to between the *Owner* and the PLC.
- 10.14 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* .
- 10.15 The *Owner* shall allow access to the *Site* during normal operating hours, to enable any individual member of the PLC and member of the public recommended by local representatives on the PLC, to observe operations. An individual member of the PLC must contact the *Operator* to arrange for a *Site* pass, be accompanied by an *Operators* representative at all times and follow all safety procedures.
- 10.16 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.
- 10.17 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 *MOE* by a Condition of this *ECA* .
- 10.18 The *Owner* with approval from the *Director* and the *District Manager*, may dispense with the PLC if, after a period of time and after giving sufficient notice, there is no interest from the public in continuing with it. The need for a PLC shall be reviewed by the *Owner* on a yearly basis.

## **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 *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 *MOE* Spills Action Centre (1-800-268-6060) and the *District Office* of the *MOE* .

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 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 i. The *Owner* shall construct the final cover system for the *Site* in accordance with Items 33 to 36 inclusive of Schedule "A" and this *ECA* .

ii. Prior to subgrade preparation, the *Owner* shall inspect for any evidence of leachate springs or seeps and immediately remedy any seeps or springs prior to placement of the final cover and topsoil.

13.2 If final contours are reached in any part of the *Site* then that part of the *Site* shall be closed in accordance with the closure plan, Items 19 to 30 on Schedule "A" and this amendment to the *ECA* as approved by the *Director*.

13.3 Within sixty (60) days prior to *Site* closure, the *Owner* shall notify the public via an advertisement in all local newspapers. In addition, notice shall be given to the *District Office* , the Town of Greater Napanee, the Mohawks of the Bay of Quinte and all residents and businesses within a 1,000 metre radius of the *Site* .

13.4 The *Owner* shall update the sign at the front gate of the *Site* to indicate the following:

- 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.
- 13.5 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 and disposed of within 48 hours of detection. Leachate seeps shall be repaired within 48 hours of detection.. Upon approval from the *Director* , the frequency for inspecting for leachate seeps may be reduced to quarterly.
- 13.6 Upon closure of the *Site* , the following features will 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.
- 13.7 Any deficiencies noted in the above items shall be repaired within one month time of notice.
- 13.8 Upon *Site* closure, grass on the berms and the top of the landfill shall be cut a minimum of two (2) times per year.
- 13.9 Upon closure of the *Site* , the ditches and culverts surrounding the *Site* shall be cleaned on an annual basis for the first five (5) years after *Site* closure. Prior to five years after *Site* closure, the *Owner* shall submit to the *Director* for approval a proposed maintenance schedule for the ditches and culverts for the period covering 5 years after *Site* closure until the end of the contaminating lifespan.
- 13.10 Upon closure of the *Site* , the leachate collection system shall be cleaned and camera inspected on an annual basis for the first three (3) years after *Site* closure. Prior to three (3) years after *Site* closure, the *Owner* shall submit to the *Director* for approval a proposed maintenance schedule for the leachate collection system or the period covering 3 years after *Site* closure until the end of the *contaminating lifespan* .
- 13.11 If weather conditions do not allow timely placement of final and vegetative cover, silt curtains shall be employed to minimize silt loadings to surface water bodies.

13.12 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:

- i. The results and an interpretive analysis of the results from the leachate, groundwater, surface water, and landfill gas monitoring programs approved by this *ECA*, including an assessment of the need to amend the monitoring programs;
- ii. 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;
- iii. A report on the status of all monitoring wells and a statement as to compliance with Ontario Regulation 903; and
- iv. 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.

### 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 *Regional Director*, the *District Manager*, the *PLC*, the Town of Greater Napanee, the Township of Tyendinaga and the Mohawks of the Bay of Quinte, 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. *Site* plans showing the existing contours of the *Site*;
- iv. areas of landfilling operation during the reporting period;
- v. areas of intended operation during the next reporting period;

- vi. areas of excavation during the reporting period;
- vii. the progress of final cover, vegetative cover, and any intermediate cover application;
- viii. previously existing *Site* facilities;
- ix. facilities installed during the reporting period;
- x. *Site* preparations and facilities planned for installation during the next reporting period;
- xi. calculations of the volume of waste, daily and intermediate cover, and final cover deposited or placed at the *Site* during the reporting period and a calculation of the total volume of *Site* capacity used during the reporting period;
- xii. a summary of the quantity of any leachate or pre-treated leachate removed from the *Site* during each operating week;
- xiii. a summary of the weekly, maximum daily and total annual quantity (tonnes) of waste received at the *Site* .
- xiv. a summary of any complaints received and the responses made;
- xv. a discussion of any operational problems encountered at the *Site* and corrective action taken;
- xvi. 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* ;
- xvii. a summary of the leachate collection system cleaning and inspection activities;
- xviii. an update summary of the amount of financial assurance which has been provided to the *Director*;
- xix. any other information with respect to the site which the *District Manager or Regional Director* may require from time to time;
- xx. a statement of compliance with all conditions of this *ECA* and other relevant *Ministry* groundwater and surface water requirements;
- xxi. a confirmation that the *Site* inspection program as required by this *ECA* has been complied with by the *Owner* ;
- xxii. Any changes in operations, equipment or procedures employed at the *Site* ; and
- xxiii. Recommendations regarding any proposed changes in operations of the *Site* .

### 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.

*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, 3.1, 3.2, 3.3 and 8.6 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, 2.8, and 2.9 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 reason for Condition 3.4 is to ensure the availability of as-built drawings for inspection and information purposes.*
- 10. The reasons for Conditions 4.1, 4.2 and 4.3 are to ensure the Owner operates the Site in an environmentally safe manner. This is to ensure the environment and public health are*

*protected.*

11. *The reason for Condition 4.4 is to establish a closure date for the Site.*
12. *The reasons for Conditions 4.5, 4.6 and 4.7 is to specify the approved areas from which waste may be accepted at the Site and the types and amounts of waste that may be accepted for disposal at the Site, based on the Owner's application and supporting documentation.*
13. *The reasons for Conditions 4.8, 4.9, 4.10 and 4.11 are to specify the normal hours of operation for the landfill Site and a mechanism for amendment of the hours of operation.*
14. *The reasons for Condition 4.12 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.*
15. *The reasons for Condition 4.18 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 4.21 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 5.1 is to ensure that landfilling operations are conducted in an environmentally acceptable manner. Daily and intermediate cover is used to control potential nuisance effects, to facilitate vehicle access on the Site, and to ensure an acceptable Site appearance is maintained. The proper closure of a landfill Site requires 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 Conditions 5.2, 5.3 and 5.4 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 5.5 and 5.6 are to ensure surface water at the site is not impacted by landfill operations. This is to ensure the environment and public health are protected.*
20. *The reasons for Condition 5.7 and 5.8 is to ensure the Owner is aware that the composting operation will cease by the given date.*
21. *The reason for Condition 5.9 is to approve the proposed phytoremediation system as*

*applied and established operations conditions for the phytoremediation system.*

22. *The reason for Conditions 5.10 and 5.11 is to clarify the responsibilities of the Owner, the requirements of the Ministry, the authority of the Ministry and protects the natural environment and human health.*
23. *The reason for Condition 5.12 is to approve the continued operation of the Waste and Recycling Drop-Off Facility as per the submitted information.*
24. *The reason for Conditions 5.13, 5.14, 5.15 and 5.18 is to ensure the type of waste, the quantity of waste service and removal frequency are clearly identified.*
25. *The reasons for Condition 5.16 and 5.17 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.*
26. *The reasons for Conditions 5.19 through 5.24 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.*
27. *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.*
28. *The reasons for Conditions 7.1, 7.2 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11 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*
29. *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.*
30. *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.*
31. *The reason for Condition 9.1 is to ensure the Owner submits a contingency plan for the Site based on the current soil and groundwater investigation. This is to ensure the environment and public are protected.*
32. *The reason for Conditions 9.2, 9.3, 9.4, 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*

*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](http://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](http://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 9th day of January, 2012



Ian Parrott, P.Eng.  
Director  
appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

DG/

c: District Manager, MOE Kingston - District  
Randy Harris, Waste Management of Canada Corporation

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## Appendix A.1.1

Amendment to Environmental  
Compliance Approval No. A371203,  
dated January 9, 2012, Imposing  
Conditions 5.12 through 5.24 (Waste and  
Recycling Drop-Off Facility)

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AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A371203

Notice No. 10

Issue Date: January 9, 2012

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

Site Location: 1271 Beechwood Road  
1271 Beechwood  
Greater Napanee Town, County of Lennox and Addington  
K7R 3L1

*You are hereby notified that I have amended Approval No. A371203 issued on December 29, 2011 for 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 , as follows:*

**Waste and Recyclable Drop-Off Facility**

**Compliance**

5.12 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**

5.13 (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 recycling 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**

5.14 (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".

## CONTENT COPY OF ORIGINAL

(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

5.15 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

5.16. 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

5.17 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

5.18 (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

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

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

5.21 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.

5.22 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".

5.23 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.

**CONTENT COPY OF ORIGINAL**

5.24 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.

**The following Items are hereby added to Schedule "A":**

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.

**The reasons for this amendment to the Certificate of Approval are as follows:**

- 1. The reason for Condition 5.12 is to approve the continued operation of the Waste and Recycling Drop-Off Facility as per the submitted information.*
- 2. The reason for Conditions 5.13, 5.14, 5.15 and 5.18 is to ensure the type of waste, the quantity of waste service and removal frequency are clearly identified.*
- 3. The reasons for Condition 5.16 and 5.17 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.*
- 4. The reasons for Conditions 5.19 through 5.24 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.*

CONTENT COPY OF ORIGINAL

**This Notice shall constitute part of the approval issued under Approval No. A371203 dated**

*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  
MSG 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](http://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](http://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 9th day of January, 2012

Ian Parrott, P.Eng.  
Director  
appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

DG/

c: District Manager, MOE Kingston - District  
Jeff Armstrong, GENIVAR Inc.

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Appendix A.2

Environmental Compliance Approval No.  
1688-8HZNJG, dated January 10, 2012

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**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**NUMBER 1688-8HZNJG  
Issue Date: January 10, 2012

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

Site Location: Richmond Landfill Site  
1271 Beechwood Road, Parts of Lots 1,2, &3, Concession 4, Richmond  
Greater Napanea 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 Napanea 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<sup>3</sup> between the elevations of 122.4 m ASL and 124.4 m ASL and active storage capacity of 7,620 m<sup>3</sup> between the elevations of 124.4 m ASL and 124.73 m ASL (overall total storage capacity of 27,262 m<sup>3</sup>);
- 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<sup>3</sup> 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<sup>3</sup> 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<sup>3</sup> 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 disposed 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<sup>3</sup> 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<sup>3</sup> 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:

<b>Table 1</b> <b>Leachate Monitoring</b> <b>Sampling Location: North Pumping Chamber</b>		
<b>Sampling Frequency: Quarterly</b>		<b>Sampling Frequency: Annually</b>
<b>Parameter</b>	<b>Parameter</b>	<b>Parameter</b>
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;

<b>Table 2</b>		
<b>Stormwater and Surface Water Monitoring</b>		
<b>Sampling Location: SWM Ponds No. 1, No. 2, and No. 3</b>		
<b>Parameter</b>	<b>Parameter</b>	<b>Field Parameter</b>
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 Rane 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  
MSG 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](http://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



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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.

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Appendix A.3

Certificate of Approval (Industrial  
Sewage) No. 4-0129-64-956  
(Oil/Sediment Interceptor)

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Ontario

Ministry of  
Environment  
and Energy

Ministère de  
l'Environnement  
et de l'Énergie

CERTIFICATE OF APPROVAL  
INDUSTRIAL SEWAGE  
NUMBER 4-0129-94-956

Page 1 of 3

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.



Ontario

Ministry of  
Environment  
and Energy

Ministère de  
l'Environnement  
et de l'Énergie

CERTIFICATE OF APPROVAL  
INDUSTRIAL SEWAGE  
NUMBER 4-0129-94-956

Page 2 of 3

- (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 O.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.



Ontario

Ministry of  
Environment  
and Energy

Ministère de  
l'Environnement  
et de l'Énergie

CERTIFICATE OF APPROVAL  
INDUSTRIAL SEWAGE  
NUMBER 4-0129-94-956  
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*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:*

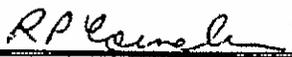
The Secretary,  
Environmental Appeal Board,  
112 St. Clair Avenue West,  
Suite 502,  
Toronto, Ontario.  
M4V 1N3

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

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Appendix A.4

Certificate of Approval No. A710003 (Soil  
Recycling)

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**PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE**

**CERTIFICAT D'AUTORISATION PROVISOIRE  
DE DÉCHARGE**

Provisional Certificate Number A710003  
Certificat provisoire no.

Page 1 of 13  
de

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

..ll 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.

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE  
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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.

8. Ontario Ministry of Environment and Energy Provisional Certificate of Approval for a Waste Management System A840681 dated March 18, 1992, or as amended.
9. Ontario Ministry of Environment and Energy Certificate of Approval (Air) Number 8-3212-88-919 dated April 23, 1992, or as amended.

located in: Township of Richmond  
Part of Lot 2, Concession IV  
(Beechwood Road)

and is subject to the following definitions and conditions:

Definitions:

"Certificate" means the entire certificate of approval including its schedules, if any, issued in accordance with Section 27, Part V of the Environmental Protection Act;

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FOR A WASTE DISPOSAL SITE

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"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. 371203, 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.

PROVISIONAL CERTIFICATE OF APPROVAL  
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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:

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- (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.

PROVISIONAL CERTIFICATE OF APPROVAL  
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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.

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

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(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.

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE  
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de

(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.

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE  
DE DÉCHARGE

Provisional Certificate Number A710003  
Certificat provisoire no.

Page 9 of 13  
de

- (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:

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE  
DE DÉCHARGE

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Page 10 of 13  
de

- 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.

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE  
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de

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.

PROVISIONAL CERTIFICATE OF APPROVAL  
FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE  
DE DÉCHARGE

Provisional Certificate Number A710003  
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de

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; and 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 each 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.

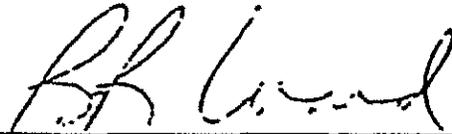
Page 13 of 13  
de

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 20<sup>th</sup> 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.)

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## Appendix A.4.1

Amendment to Certificate of Approval No.  
A710003 dated August 25, 1999,  
Regarding Notification of Change of  
Name

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Ontario

Ministry of the Environment  
Ministère de l'Environnement

NOTICE  
Page 1 of 2

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.



Ministry of the Environment  
Ministère de l'Environnement

NOTICE  
Page 2 of 2

*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](http://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

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## Appendix A.4.2

Amendment to Certificate of Approval No.  
A710003 dated March 26, 2004,  
Regarding Notification of Change of  
Name

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RECEIVED APR 02 2004

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



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:

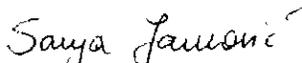
A230901 East Gwillimbury  
A230701 Hwy 48  
A230201 Aurora  
A032006 Blackwell LF  
A380103 Kingston - St. Remy Place  
A100144 Brant St. Hamilton  
A620042 Sarina MacGregor Rd.  
A210237 Mavis, Mississauga  
A031810 LaSalle LF  
A021601 Ridge LF  
8602-4HQZW Trenton, Chester Rd.  
A253001 Tecumseth LF  
A100130 Lottridge - Hamilton

A440109 California Ave. - Brockville  
 A120138 Cushman Rd. - St. Catharines  
 A030309 Petrolia MRF  
 A140327 Conrad Place, Waterloo  
 A580730 Timmins - De lora  
 A580731 Timmins - Ogden  
 A580732 Timmins - German  
 A170404 Mount Forest - Sligo Rd.  
 A100139 Lansdowne Ave - Hamilton  
 A450707 Carleton Place  
 A010128 Naidstone  
 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  
 1308-5HNR6 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  
 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

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## Appendix A.5

Certificate of Approval (Air) No. 1355-5LRN9N (Landfill Gas Collection and Flaring System)

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Ontario

Ministry of the Environment  
Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL  
AIR  
NUMBER 1355-5LRN9N

Canadian Waste Services Inc.  
1271 Beachwood Road, RR 6  
Napanee, Ontario  
K7R 3L1

Site Location: Richmond Landfill  
Part of Lots 1,2, &3, Conc. 4  
Greater Napanee Town, County Of Lennox & Addington

*You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:*

- one (1) enclosed flare used to incinerate the landfill gases from a 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;

all in accordance with the Application for Certificate of Approval submitted by Canadian Waste Services Inc., along with the supporting information prepared by Randy Harris and a facsimile transmission from Matt Dugan of COMCOR ENVIRONMENTAL LIMITED to Remi Godin of Canadian Waste Services Inc. dated April 25, 2003.

*For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:*

For the purpose of this Certificate of Approval:

- (1) "Act" means the *Environmental Protection Act*;

- (2) "CEM System" means the continuous monitoring and recording system used to optimize the operation of flare to minimize the emissions from the flare, as described in the Company's application, this Certificate, including Schedule "A", and in the supporting documentation referred to herein, to the extent approved by this Certificate;
- (3) "Certificate" means this Certificate of Approval, including Schedule "A", issued in accordance with Section 9 of the Act;
- (4) "Company" means Canadian Waste Services Inc.;
- (5) "Equipment" means the flare system described in the Company's application, this Certificate and in the supporting documentation referred to herein, to the extent approved by this Certificate;
- (6) "Ministry" means the Ontario Ministry of the Environment; and
- (7) "Publication NPC-232" means Publication NPC-232, Sound Level Limits for Stationary Sources in Class 3 Areas ( Rural), October 1995.

*You are hereby notified that this 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 Equipment , at all times, with the limits sets in Publication NPC-232.
2. The Company shall operate the Equipment in such a manner that a minimum temperature, as recorded by CEM, 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 flare system.

### **OPERATION AND MAINTENANCE**

3. The Company shall ensure that the Equipment, including CEM, is properly operated and maintained at all times. The Company shall:
  - (1) prepare, not later than three (3) months after the issuance of the Certificate and update, as necessary, a manual outlining the operating procedures and a maintenance program for the Equipment, including:
    - (a) the routine and emergency operating and maintenance procedures recommended by the Equipment and CEM System supplier;

- (b) the calibration procedures of the CEM System;
  - (c) the operator training which is to be provided by an individual experienced with the Equipment;
  - (d) the procedures for optimizing the operation of the Equipment to minimize the emissions from the Equipment;
  - (e) the 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) the procedures for recording and responding to complaints regarding the operation of the Equipment; and
- (2) implement the recommendations of the operating and maintenance manual.

### **RECORD RETENTION**

4. 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 operation of the Equipment, and monitoring and recording activities required by this Certificate. These records shall be made available to the Ministry upon request. The Company shall retain:
- (1) all records on maintenance, repair and inspection of 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 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
  - (5) description of all upset conditions associated with the operation of the Equipment and remedial action taken.

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

1. Condition Nos. 1 and 2 are included to outline the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Equipment.
2. Condition No. 3 is included to emphasize that the Equipment must be operated and maintained according to a procedure that will result in compliance with the Act, the regulations and this Certificate.
3. Condition No. 4 is included to require the Company to retain records and provide information to the Ministry so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.

**SCHEDULE "A"**

This Schedule "A" forms part of Certificate of Approval

<b>PARAMETER:</b>	Temperature						
<b>LOCATION:</b>	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.						
<b>PERFORMANCE:</b>	The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.						
	<table border="1"> <thead> <tr> <th>PARAMETERS</th> <th>SPECIFICATION</th> </tr> </thead> <tbody> <tr> <td>Type:</td> <td>shielded "K" type thermocouple, or equivalent</td> </tr> <tr> <td>Accuracy:</td> <td>±1.5 percent of the minimum gas temperature</td> </tr> </tbody> </table>	PARAMETERS	SPECIFICATION	Type:	shielded "K" type thermocouple, or equivalent	Accuracy:	±1.5 percent of the minimum gas temperature
PARAMETERS	SPECIFICATION						
Type:	shielded "K" type thermocouple, or equivalent						
Accuracy:	±1.5 percent of the minimum gas temperature						
<b>DATA RECORDER:</b>	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.						
<b>RELIABILITY:</b>	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.						

**This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 8-4078-99-006 issued on December 21, 1999.**

*In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, 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 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 works are located;

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

*This Notice must be served upon:*

The Secretary\*  
 Environmental Review Tribunal  
 2300 Yonge St., 12th Floor  
 P.O. Box 2382  
 Toronto, Ontario  
 M4P 1E4

AND

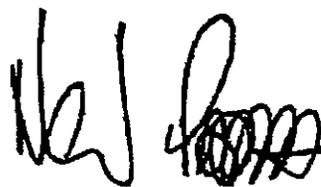
The Director  
 Section 9, *Environmental Protection Act*  
 Ministry of Environment and Energy  
 2 St. Clair Avenue West, Floor 12A  
 Toronto, Ontario  
 M4V 1L5

\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)

*The above noted works are approved under Section 9 of the Environmental Protection Act.*

DATED AT TORONTO this 8th day of May, 2003

THIS CERTIFICATE WAS MAILED  
 ON May 13, 2003  
lc  
 (Signed)



Neil Parrish, P.Eng.  
 Director  
 Section 9, *Environmental Protection Act*

AK/

c: District Manager, MOE Kingston - District  
Jeff Armstrong, P. Eng., Henderson, Paddon & Associates Limited

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Appendix A.5.1

Amendment to Certificate of Approval No.  
1355-5LRN9N dated January 13, 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



January 13, 2004

Jessica Campbell, Director, Regulatory Affairs & Environmental Compliance  
5045 South Service Road, Suite 300  
Burlington, Ontario  
L7L 5Y7

Dear Sir/Madam:

**Re: Notification of Change of Name**  
**MOE Reference Number 1717-5V6S5Q**

The Ministry of the Environment (the "Ministry") acknowledges receipt of your letter dated January 8, 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 Air, Section 9, EPA:

3227-4K9QYW - Ottawa LFC (West Carleton)  
8245-4VWJYQ - London - Exeter Rd.  
3017-4JQPJS - Blackwell LF  
8-3295-89-006 - Aurora (Bayview Ave)  
0956-55DL24 - Bowes Rd. Vaughan  
8-2211-92-937 - Cushman Rd., St. Catharina's  
8-3252-91-927 - Mavis Rd., Mississauga  
3747-5LFW5 - LaSalle LF  
8788-5LFNR7 - Blackwell LF  
1355-5LRN9N - Richmond LF  
4414-5N7JNB - LaSalle 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 Ottawa  
District Manager, MOE London  
District Manager, MOE Sarnia  
District Manager, MOE York-Durham  
District Manager, MOE Niagara  
District Manager, MOE Halton-Peel  
District Manager, MOE Kingston

File Storage Number: 0369, 0076, 0473, 0832, 1502, 1450, 0480, 0828, 0441, 1616

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## Appendix A.5.2

Amendment to Certificate of Approval No.  
1355-9LRN9N dated January 24, 2007,  
Regarding Notification of Change of  
Address

---

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) 212-3679

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) 212-3679



January 24, 2007

Katrina DiRenzo-McGrath, Environmental Coordinator  
Waste Management of Canada Corporation  
2305 Wyecroft Rd, Suite 100  
Oakville ON L6L 6R2

Dear Ms. DiRenzo-McGrath:

**Re: Notification of Change of Address  
MOE Reference Number 2875-6WNT8F**

The Ministry of the Environment (the "Ministry") acknowledges receipt of your letter dated September 11, 2006 and October 12, 2006 requesting a change in company address:

**FROM:** Waste Management of Canada Corporation  
5045 South Service Road, Unit 300  
Burlington, Ontario  
L7L 5Y7

**TO:** Waste Management of Canada Corporation  
Waste Management of Canada  
117 Wentworth Crt  
Brampton, Ontario  
L6T 5L4

By this letter, the Ministry advises you that your notification of change in company address has been registered in our records for the following Certificate(s) of Approval:

Certificate(s) of Approval for Air, Section 9, EPA:

9406-6Q5L25 - Hwy 48  
3227-4K9QYW - Ottawa  
3017-4JQPJS - Blackwell  
8-3295-89-006 - Aurora  
0956-55DL24 - Bowes  
8-3252-91-927 - Mavis  
8788-5LFNR7 - Blackwell  
1355-5LRN9N - Richmond

4414-5N7JNB - LaSalle  
8-4028-92-006 - Richmond  
8-4076-99-006 - Ottawa.  
8-1121-98-006 - Warwick  
8-4031-98-006 - Ottawa.  
8-4141-93-006 - Storrington  
9774-68CR9R - LaSalle.  
0883-6CRQRS - Petrolia  
2800-6JPNZM - Exeter Rd, London

Certificate(s) of Approval for Municipal and Private Sewage Works, Section 53, OWRA:

3-0509-91-006 - Blenheim  
3-0975-90-916 - Richmond  
3-1720-90-916 - Richmond  
3-1500-94-956 - Warwick

Certificate(s) of Approval for Industrial Sewage Works, Section 53, OWRA:

1493-5F7L7F - Exeter Rd., London  
5924-5QDKAY - Westbrook Rd, Ottawa  
4-0013-95-006 - Blackwell  
4-0129-94-956 - Richmond.  
2046-5XKS5R - Westbrook  
6141-5YGP94 - Petrolia  
1457-6KRJY7 - LaSalle.

Certificate(s) of Approval for Waste Disposal Sites, Section 27, EPA:

A230901 - East Gwillimbury  
A031810 - Lasalle.  
A230701 - Hwy 48  
A230201 - Aurora  
A032203 - Warwick  
A280229 - Unwin  
A210622 - Brydon  
A210237 - Mavis  
8602-4HQZQW - Trenton  
A253001 - Teamseth.  
A100144 - Brant St.  
A100130 - Lettbridge.  
A440109 - Brockville  
A021606 - Blenheim  
A380103 - Kingston  
A120138 - St. Catharines

A030309 - Petrolia MRF  
A140327 - Waterloo  
A580730 - Timmins, Deloro  
A580731 - Ogden  
A580732 - German.  
A170404 - Mount Forest  
A100139 - Lansdowne  
A450707 - Carleton Place.  
A250111 - Barrie  
A010128 - Maidstone.  
A230615 - Bowes  
A371203 - Richmond.  
A680243 - Esandar  
A461002 - Ottawa.  
A021603 - Blenheim  
A040213 - London  
A030303 - Petrolia Landfill  
4458-5QTLS3 - Timmins MRF  
1308-5HNRV6 - Wentworth  
A710003 - Richmond  
A381502 - Stormington.  
A461009 - Ottawa.  
A032006 - Blackwell  
3412-5ZQLYF - Courtice.

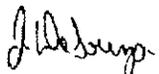
Certificate(s) of Approval for Waste Management Systems, Section 27, EPA:

A840311  
A920273

The Ministry will not be providing you with an amended certificate(s) to reflect the change in company address. Therefore, this letter must be appended to its corresponding Certificate(s) of Approval. The address 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,



Josephine DeSouza  
Application Processor

cc: District Manager, MOE Barrie District Office

Area Supervisor, MOE Belleville Area Supervisor  
District Manager, MOE Guelph District Office  
District Manager, MOE Halton-Peel District Office  
District Manager, MOE Hamilton District Office  
District Manager, MOE Kingston District Office  
District Manager, MOE London District Office  
District Manager, MOE Niagara District Office  
District Manager, MOE Ottawa District Office  
District Manager, MOE Peterborough District Office  
District Manager, MOE Sarnia District Office  
District Manager, MOE Timmins District Office  
District Manager, MOE Toronto District Office  
Area Supervisor, MOE Windsor Area Office  
District Manager, MOE York-Durham District Office

File Storage Number: 0031, 0369, 0473, 0832, 1502, 0480, 0828, 0441, 1616, 0027, 0029, 0028,  
0030, 0032, 1502, 0076, 0076, 0022, 0023, 0024, 0026, 0475, 0208, 0006, 0007, 0006, 0030,  
0135, 230901, 031810, 230701, 230201, 032203, 280229, 210622, 210237, 0209, 253001,  
100144, 100130, 440109, 021606, 380103, 120138, 030309, 140327, 580730, 580731, 580732,  
170404, 100139, 450707, 250111, 010128, 230615, 371203, 680243, 461002, 021603, 040213,  
030303, 0822, 0611, 710003, 381502, 461009, 032006, 0830, 840311 and 920273

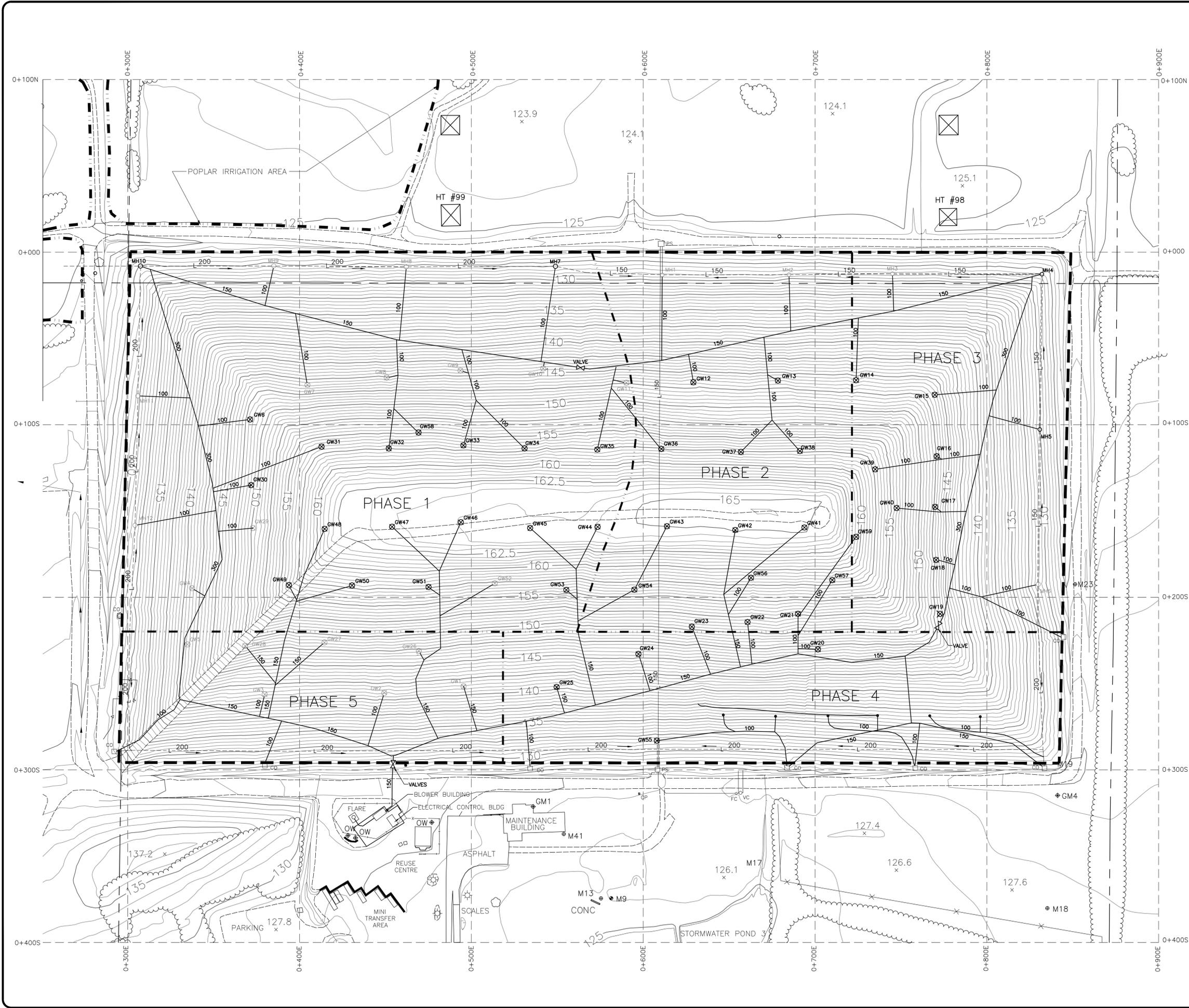
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Appendix B

Existing Conditions Plan

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G:\1985\8570\DRAWINGS\2013\8570\_GAS AS-BUILT FEBRUARY 2013.dwg Mar 20, 2013 - 2:47pm



**LEGEND:**

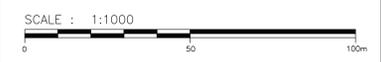
- INDEX CONTOURS
- INTERVAL CONTOURS
- REFERENCE GRID LINE
- LEGAL BOUNDARIES
- APPROVED LIMIT OF LANDFILL
- EXISTING DRAINAGE DITCH
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING TREE
- HT #98 EXISTING HYDRO TOWER (ID #)
- EXISTING HYDRO POLE
- EXISTING ROAD EDGE
- EXISTING LEACHATE CLEANOUT
- EXISTING LEACHATE MANHOLE
- 150 EXISTING GAS HEADER & DIAMETER (mm)
- 100 EXISTING GAS LATERAL & DIAMETER (mm)
- GW52 ACTIVE VERTICAL EXTRACTION GAS WELL
- GW52 NON-ACTIVE VERTICAL EXTRACTION GAS WELL

**NOTES:**

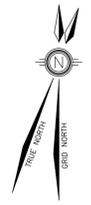
- 1) EXISTING GROUND CONTOURS AND TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN ARE BASED ON INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY FLOWN ON JUNE 27, 2009 BY BASE MAPPING AND FIELD SURVEY DATA BY GENIVAR INC. TO FEBRUARY 22, 2012.
- 2) CONTOUR INTERVAL SHOWN IS 0.5m
- 3) THE LOCAL SITE GRID IS BASED ON 0+000 BEING THE NORTH LANDFILL LIMIT. THE NORTHWEST 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) ASBUILT INFORMATION SHOWN FOR HDPE GAS PIPING WAS PROVIDED BY WASTE MANAGEMENT AND IS APPROXIMATE ONLY. THE LOCATION OF ALL THE GAS WELLS SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEY DATA OBTAINED BY GENIVAR INC ON NOVEMBER 17, 2011.  
LOCATION OF GAS WELL 59 WAS PROVIDED BY WASTE MANAGEMENT AND IS APPROXIMATE ONLY.  
WM REPORTS THAT THE PRESENT SYSTEM COLLECTS GAS FROM FIVE LEACHATE CLEANOUTS, FOUR LEACHATE COLLECTION MANHOLES AND 44 VERTICAL GAS WELLS, OF THE 59 INSTALLED. THE CERTIFICATE OF APPROVAL PERMITS NINE LEACHATE CLEANOUTS, 12 LEACHATE MANHOLES, AND 54 VERTICAL GAS WELLS.

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.



DATE	DESCRIPTION	APP. BY



**GENIVAR**  
1450 1st Ave W, Suite 101, Owen Sound, ON, N4K 6W2  
Telephone: (519) 376-7612 fax: (519) 376-8008  
Toll Free: 1-888-376-7612

**WM WASTE MANAGEMENT**

LANDFILL GAS COLLECTION SYSTEM  
AS BUILT DRAWING TO MARCH 2013  
RICHMOND LANDFILL  
NAPANEE, ONTARIO

WASTE MANAGEMENT OF CANADA CORP.  
DRAWING NO. 8570 - 2013 GAS AS BUILT

SHEET  
2013GAB

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Appendix C

Complaint Forms

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2012 Complaint Summary

	Date	Type
1	MAY 18/12	ODOUR
2	AUG. 14/12	RATS
3	Sept 18/12	ODOUR
4	Nov 19/12	ODOUR
5		
6		
7		
8		



**Richmond Landfill Best Management Plan  
Odour Complaint Form**

WM Personnel: R HARRIS

Date of Call	<u>May 18/12</u>	Time of Call	<u>12:18 PM</u>
Complainant Name	<u>David Annett</u>	Complaint Contact Number	<u>613-540-6899</u>
Complainant Address	<u>MOE Kingston</u>		

Date of Odour Incident	<u>May 18/12</u>	Time of Odour Incident	<u>?</u>
Description of Event	<u>Continuous odour for 2 wks.</u>		

Operations at Time of Incident	<u>No odour issues recently. Gas system running 100%</u>		
Winds at Time of Incident			
Investigation Results and Corrective Action	<u>waiting for complainant to call back.</u>		

**COMPLAINT LOG (FO-02)**

**A. ADMINISTRATIVE**

Complaint Number (year-number, Ex. 2001-001):

Certificate of Approval/Permit Number for site:  
(If none, go to Section B) A371203

Does a condition of the C. of A./Permit require this complaint log be (tick those that apply):

- a) Retained on site
- b) Submitted to the Environment Ministry
- c) Summarized for inclusion in a Report (monthly, quarterly, annual)

*Note: It is the Site Manager's responsibility to ensure compliance with C. of A./Permit conditions.*

**B. SUMMARY**

1. Date and Time of Complaint	Aug 14 / 2012 2:20 pm
2. Name of Complainant	Mary Blair
3. Address of Complainant	Selby Rd
4. Telephone Number of Complainant	613 358-2937
5. Relationship of Complainant	neighbour
6. Employee receiving complaint (name):	Winda Cooper
7. Type of complaint	Odour / Noise / Litter / Dust / <u>Vermis</u> / Other:
8. Nature of complaint (details):	Msg recd on voicemail "calling about rats on my property"
9. Precipitation: <input type="checkbox"/> Yes <input type="checkbox"/> No	10. Wind Direction: n/a
11. Precipitation Type & Amount:	12. Wind Speed:

**C. INVESTIGATION**

1. Were there any unusual events/occurrences around the time of the complaint that may have contributed to the complaint?  Yes  No

2. If yes, describe (Ex. high winds creating litter, unusual waste stream creating odours, etc):

3. If the site-specific nuisance control equipment/procedures were not operational describe the problem and when it was corrected:  
Regularly monthly visits by Rentokil Pest Control have been carried out

4. Where the complaint was for odours, was:

- a) An odour suppression system available for use at the site?  Yes  No
- b) The suppression system operational?  Yes  No

Waste Management of Canada Corporation		Page 1 of 2
Document Name: Complaint Log	Effective Date: January 1, 2010	Document No.: FO-02
Controlled by: Environmental Protection Canada	Expiry Date: December 31, 2013	Revision number: 02
Approved by: K. DeRango, M. Gault		Next Review Date: by December 31, annually

### CORRECTIVE ACTION

1. What actions were taken to resolve the source of the complaint. Describe: A Rentokil Pest Control visits monthly. Waste bin at transfer is dumped twice per week. No uncovered garbage onsite
2. When were these actions taken (date/time):
3. What measures have been employed or will be employed to prevent any future recurrence? Describe: Above measures to continue

### E. FOLLOW-UP

Note: where complainant contact information is provided, all complaints must be contacted to provide the details of the investigation, and to describe any corrective/preventative actions taken.

Date and time complainant was contacted to provide details of the investigation and to describe any corrective and/or preventative measures: AUG 15/12  
2:00-2:30 PM

Who contacted the complainant (name/title): RANDY HARRIS-MANAGER

How was the complainant contacted? (Person) Telephone / Letter (attach copy)

Complainant Response: ANGRY AT FIRST, THEN CALMED DOWN. R HARRIS EXPLAINED THAT THE RATS COULDN'T BE FROM LANDFILL SITE, OFFERED M. BLAIR LIVE TRAPS TO SOLVE HER PROBLEM.

RH. brought live trap to M. Blair Aug 20 & asked her to keep him informed about how it goes

### F. FORM COMPLETION

Form completed by: Name: Title:	Linda Cooper Comm. Relations
Date completed:	Aug 15 8:45 am

Waste Management of Canada Corporation Document Name: Complaint Log	Page 2 of 2 Document No.: FO-02 Revision number: 02
Controlled by: Environmental Protection Canada	Effective Date: January 1, 2010
Approved by: K. D'Amico-McQuinn	Expiry Date: December 31, 2013

GO TO THE CANADIAN ENVIRONMENTAL WEBSITE OR WEBSITE TO ENSURE THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT

**Richmond Landfill Best Management Plan  
Odour Complaint Form**



WM Personnel: L. Cooper

Date of Call	<u>Sept 18/12</u>	Time of Call	<u>1 pm</u>
Complainant Name	<u>Harly Kellar</u>	Complainant Contact Number	<u>354-5062</u>
Complainant Address	<u>Van Lovent Rd</u>		

Date of Odour Incident	<u>Sept 16/12</u>	Time of Odour Incident	<u>7 pm</u>
Description of Event	<u>see attached email</u>		

Operations at Time of Incident	<u>none</u>		
Winds at Time of Incident	<u>20° from N</u>		
Investigation Results and Corrective Action	<u>PERSON WAS DRIVING PAST BFL TANKER STATION OLD ROAD 41</u> <u>10-12 KM AWAY &amp; SMELLED GARAGE, I CONTACTED HIM. HE ASKED IF</u> <u>ANY MORE BEEN 'A BROTHER' SOURCE BUT SAID HE ALSO DID NOT</u> <u>WANT W/ TO EXAMIN IN HARRING, THERE WAS NO TANK ON SITE WERE SUN</u> <u>NIGHT.</u>		

Best Management Plan Odour Complaint Form  
This Form is Reviewed and Updated Annually

The Record Must Be Maintained on File for Two Years  
Printed March 2012

# Richmond Landfill Best Management Plan Odour Complaint Form



WMA Personnel: R. Harris

Date of Call	<u>Nov. 18/12</u>	Time of Call	<u>12:20 PM</u>	<u>Sunday PM</u>
Complainant Name	<u>D. Cranston</u>	Complainant Contact Number		
Complainant Address	<u>Callahan Side Rd.</u>			

Date of Odour Incident	<u>Nov. 18/12</u>	Time of Odour Incident	
Description of Event	<u>Odour</u>	<u>Nov. 18<sup>PM</sup> 19 AM</u>	

Operations at Time of Incident	<u>Gas system running 100%. No garbage odours</u>		<u>CAP REPAIR START 10AM NOV. 19TH (AFTER COMPLAINT MADE)</u>
Winds at Time of Incident	<u>10 Kph Southeast</u>		<u>DIGGING CAP &amp; ONLY NOT INTO TRASH.</u>
Investigation Results and Corrective Action	<u>Manure/Biosolids being spread on fields just North of Empty Hill Church. Slight odour</u>	<u>from burn barrel on Callahan Side Rd.</u>	

Best Management Plan Odour Complaint Form  
This Form is Reviewed and Updated Annually

This Record Must Be Maintained on File for Two Years  
Printed March 2012

2012-004

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## Appendix D

Statement of Compliance – 2012  
Environmental Monitoring and Reporting,  
prepared by Water and Earth Science  
Associates

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## MEMORANDUM

**Date:** March 25, 2013  
**To:** Chris Prucha, Director, Groundwater Protection Program, Waste Management (WM)  
**Cc:** Wayne Jenken, Area Landfill Engineer, WM  
Bev Leno, Genivar Inc.  
**From:** David Harding, WESA, a division of BluMetric Environmental Inc.  
**Project No:** KB11166-00-00  
**Re:** Statement of Compliance, 2012 Environmental Monitoring and Reporting  
WM Richmond Landfill, Town of Greater Napanee, Ontario

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Condition 14.3, paragraph xx, of Environmental Compliance Approval (ECA) No. A371203 for the 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 (MOE) groundwater and surface water requirements. WESA 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.

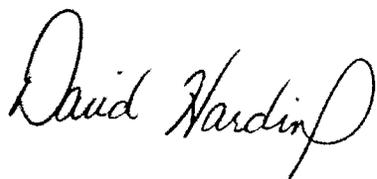
During the 2012 calendar year, the environmental monitoring program was conducted in accordance with the Environmental Monitoring Plan (EMP) dated June 29, 2010, as specified in Condition 8.5(a) of the ECA. The EMP has been accepted by the MOE on an interim basis pending the results from additional groundwater investigation being completed in the vicinity of the landfill site. 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 2012 Semi-Annual Monitoring Reports.

The two Semi-Annual Monitoring Reports prepared in 2012 were submitted to MOE and other stakeholders in compliance with Condition 14.1 of the ECA. The reports were 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 MOE Guideline B-7. The reports also include a statement of compliance of the monitoring well conditions to Ontario Regulation 903.

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,

A handwritten signature in black ink that reads "David Harding". The signature is written in a cursive style with a large initial "D".

David Harding, M.Sc. P.Eng.  
Senior Consulting Engineer

*Ref: KB11166-00-0 Memo March25-2013.docx*

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## Appendix E

### MOE and WM Correspondence Regarding the Groundwater Action Plan – Investigation Report

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**Ministry of Environment**

Kingston District Office

1259 Gardiners Road  
PO Box 22032  
Kingston, ON K7M 8S5  
Tel: (613) 549-4000  
Fax: (613) 548-6920

**Ministère de l'Environnement**

Bureau du District de Kingston

1259 rue Gardiners  
C.P. 22032  
Kingston ON K7M 8S5  
Tél. : (613) 549-4000  
Télééc. : (613) 548-6920



December 3, 2012

Waste Management of Canada Corporation  
RR6 Greater Napanee, ON  
K7R 3L1

Attention: Randy Harris

Re: "Groundwater Action Plan Investigation Report, WM Richmond Landfill" – Oct. 2012

Mr. Harris,

The ministry has reviewed the Groundwater Action Plan report received on October 5, 2012. Attached please find technical comments from ministry Hydrogeologist Kyle Stephenson in this regard.

The ministry remains of the opinion that the Richmond landfill is causing offsite groundwater impacts for non-health related parameters at the existing southern property boundary in exceedance of ministry guidelines, and in non-compliance with Environmental Compliance Approval ('ECA') A371203 issued for this Site.

In accordance with the recommendations put forth in the attached memo, by December 21, 2012 please provide a written response to my attention outlining the steps to be taken by Waste Management of Canada Corporation ('WM') to address the identified exceedances and bring the Site into compliance with the associated ECA. Anticipated timeframes for implementation of proposed remedial measures should also be included in the forthcoming response.

Should you have any questions please do not hesitate to contact me directly at 613-540-6899.

With Regards,

**Original Signed By,**

David Arnott  
Senior Environmental Officer  
Ontario Ministry of the Environment  
Kingston District



**WASTE MANAGEMENT**

1271 Beechwood Road  
Napanee, ON K7R 3L1  
(613) 388-1057  
(613) 388-2785 Fax

December 19, 2012

David Arnott, Senior Environmental Officer  
Ontario Ministry of the Environment  
Kingston District Office  
1259 Gardiners Road  
Kingston, ON K7M 8S5

Re: Richmond Landfill – Groundwater Action Plan Investigation Report

Dear Mr. Arnott:

Waste Management is in receipt of your letter, dated December 3, 2012, requesting a plan from Waste Management to address exceedances of ministry guidelines of non-health related groundwater parameters along the landfill's southern property boundary.

After review of the memorandum prepared by the MOE Eastern Region Technical Support Section, dated November 27, 2012, Waste Management stands by the conclusions of the Groundwater Action Plan Investigation Report, dated October 2012, prepared by B. Kueper & Associates, Ltd., and WESA for Waste Management.

We made a commitment to the ministry this past summer that we would make application to the ministry for a Contaminant Attenuation Zone (CAZ) on property we own and options south of Beechwood Road once the Action Plan report was submitted and reviewed.

The purpose of this letter, then, is to confirm formally we will submit an application to the MOE to approve a CAZ on property owned and optioned by us south of the landfill and south of Beechwood Road. As you know, in order to submit the CAZ application, we will need to conduct studies on this property to determine the extent of property required. These studies will involve drilling bore holes, conducting aquifer testing, selecting monitoring zones in the bore holes, constructing monitoring wells in the bore holes, sampling the monitoring wells and preparing the CAZ application. The work will be conducted in consultation with MOE technical support staff. When we have decided with you on the boundaries, the application will be finalized and submitted. Some of this work has already started. If the work progresses as expected, Waste Management should be ready to submit the application by the end of March 2013. We intend to submit the CAZ application as soon as possible to allow us to put this behind us.

We appreciate all of the time and effort you put into this important issue and look forward to its resolution.

Sincerely,

A handwritten signature in black ink that reads "Randy Harris". The signature is written in a cursive style with a large, sweeping initial "R".

Randy Harris  
Richmond Landfill Manager

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## Appendix F

Industrial Sewage Inspection Report and  
Public Drop Off Area Inspection Report  
completed at Richmond Landfill by MOE  
– May 2012

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## Industrial Sewage Inspection Report

<b>Client:</b>	Waste Management Canada Corporation, Business/Facility Name: Waste Management of Canada Mailing Address: 1271 Beechwood Rd, Rural Route, 6, Napanee, Ontario, Canada, K7R 3L1 Physical Address: 1271 Beechwood Rd R.R. #6, Greater Napanee, Town, County of Lennox and Addington, Ontario, Canada, K7R 3L1 Telephone: (613)388-1057, FAX: (613)388-2785, email: rharris@wm.com Client #: 7403-5X8KZG, Client Type: Corporation Additional Address Info: R.R. #6		
<b>Inspection Site Address:</b>	Richmond Landfill Site Address: 1271 Beechwood Rd Lots 1 2 and 3 Concession 4 Richmond, Greater Napanee, Town, County of Lennox and Addington, K7R 3L1 District Office: Kingston - District GeoReference: , LIO GeoReference: Zone: , UTM Easting: , UTM Northing: , Latitude: , Longitude:		
<b>Contact Name:</b>	Randy Harris	<b>Title:</b>	Site Manager
<b>Contact Telephone:</b>	613-388-1057 ext	<b>Contact Fax:</b>	
<b>Last Inspection Date:</b>			
<b>Inspection Start Date:</b>	2012/05/04	<b>Inspection Finish Date:</b>	2012/05/04
<b>Region:</b>	Eastern		

### 1.0 INTRODUCTION

This inspection was conducted to assess compliance with the Ontario Water Resources Act and applicable regulations as well as Amended Environmental Compliance Approval ('ECA') #1688-8HZNJG which regulates stormwater management and leachate collection facilities at the now closed Richmond landfill site.

ECA # 1688-8HZNJG, issued January 10/2012, revoked and replaced Approval #5268-7E8LJQW issued in August 2008. The predominant change involved authorization to operate the stormwater management ponds in a "normally open position". Previous approvals for these works did not allow for continuous discharge, and permission to discharge the collection pond contents were subject to ministry approval based upon satisfactory sample results. Given the historically acceptable quality of stormwater collected in the works, the January 2012 amendment was granted providing for continuous discharge and ongoing sampling requirements. Should prescribed quarterly grab samples confirm toxicity, resampling within two weeks is required, and if samples are confirmed then the works must be operated in a closed position in accordance with a "Stormwater Contingency and Remedial Action Plan" required to be prepared within 6 months of the ECA issuance. That plan was received in May of this year and is currently under review by ministry surface water scientists.

### 2.0 INSPECTION OBSERVATION

**Facility MEWS (Works) Number:**

Not Applicable

**Sector Type:**

Waste Disposal

**Effluent Type:**

Landfill Leachate, Storm Water

**Receiver Type:**

Surface Water

**Name of Receiver:**

Various - overland dissipation, unnamed tributary to Marysville creek, municipal sewage plant for collected leachate

**Is there a sensitive receptor on/in the receiver?**

No

Effluent from the various sewage works are ultimately discharged to different receptors.

- 1) Discharge from stormwater management pond (SWMP) #3, consisting primarily of 2 detention ponds receiving run-off from a 20 Ha drainage area, discharges via drainage ditches ultimately to the Marysville Creek a considerable distance away, although most discharge events dissipate overland prior to reaching the creek.
- 2) Discharges from SWMP #1 (3.38 Ha drainage area to the north of the landfill) and SWMP #2 (4.94 Ha drainage area to the northwest of the landfill) both drain to an intermittent headwater tributary to Marysville Creek.
- 3) Leachate collected from the lined portion of the site is directed to a leachate pumping station and typically pumped directly from the collection system for disposal into the sanitary sewer system serving the Town of Greater Napanee's WPCP. An approved 16,245 m<sup>3</sup> lined (HDPE and clay) lagoon is also onsite for temporary storage of leachate or leachate contaminated stormwater.

**Certificate of Approval Number(s):**

Yes

**C of A Number(s):** 1688-8HZNJG

**2.1 WASTEWATER TREATMENT PROCESS DESCRIPTION**

See section 1.0 and 2.0 above

**2.2 EFFLUENT SUMMARY REPORT**

**What are the facility's effluent limits based on?**

Certificate of Approval/Permit

**Does the facility comply with its limits?**

Yes

The ECA specifies sampling parameters, frequencies and limits for the approved sewage works. There are no compliance limits associated with the leachate collection system as there is no direct untreated discharge to receiving waters associated with this works. Quarterly grab samples of leachate are required and tested for metals and general chemistry parameters.

The remaining stormwater ponds are also tested as per ECA requirements, for metals/general chemistry and toxicity. There are no effluent limits associated with the stormwater works, however a failure of toxicity testing activates remedial measures specified in the ECA. No toxicity failures have been reported to date. Some PWQO exceedances for metals and general chemistry parameters were recorded. These results are being reviewed by ministry surface water scientists and any concerns will be forwarded to the company for appropriate action if warranted.

**2.3 SEWAGE TREATMENT WORKS CAPACITY ASSESSMENT**

Flow (m <sup>3</sup> /day)	Year 1 2010	Year 2 2011	Year 3 2012
Average daily flow	0.00	0.00	0.00
Maximum daily flow	0.00	0.00	0.00
Capacity Design	0.00	0.00	0.00
% of capacity (based on average daily flow)	0.00	0.00	0.00

Monitoring of flows is not required.

**2.4 SAMPLING REQUIREMENTS**

**What are the facility's sampling requirements based on?**

Certificate of Approval/Permit

**Does the facility meet sampling requirements?**

Yes

In addition to Section 2.2 above, Waste Management (WM) hydrogeologists have brought forward suggested changes to the quarterly leachate sampling requirements currently prescribed in the ECA. WM drew attention to the fact that leachate sampling and analysis is a requirement of the ECA for the waste site (#A371203) through the Environmental Monitoring Plan (EMP) currently in development for the site and therefore unnecessary as part of the industrial sewage ECA. The ministry has informed WM that a reduction in leachate sampling frequency in the industrial sewage ECA is feasible, however not a reduction to a single sampling event. Any changes to the prescribed leachate sampling/monitoring program will require an amendment to the associated ECA.

**2.5 REPORTING REQUIREMENTS**

**What are the facility's reporting requirements based on?**

Certificate of Approval/Permit

**Does the facility meet reporting requirements?**

Yes

All sampling data is routinely reported to the Ministry. Condition 10(4) of the ECA requires submission of a "performance report" by March 30 each year containing a summary and interpretation of all stormwater data as well as leachate quantity and corresponding quality. Leachate quality data was not included in the March 2012 annual report, nor any other form or report. This matter was brought to the attention of WM before the submission deadline and the information was subsequently submitted to the ministry. The matter was discussed with the local Site Manager Randy Harris and it is not expected to be a recurring problem in the future.

**2.6 FLOW MEASUREMENT**

Not required.

**2.7 MINISTRY SAMPLE RESULTS**

**Were Ministry samples collected during the inspection??**

No

**Reason:**

Samples were not obtained at the time of the inspection.

**2.8 FINANCIAL ASSURANCE**

WM has currently posted in excess of 13 million dollars in financial assurance.

**2.9 SPILL PREVENTION AND CONTINGENCY PLANS**

**Is the facility required to have a Spill Prevention and Contingency Plan (SPCP) as required by Ontario Regulation 224/07?**

No

**Has the facility had any spills since the last inspection?**

No

**Were all the spills reported to the ministry?**

N/A

**Does the facility's operations or spill history suggest that a SPCP be developed?**

No

**Comments:**

**3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES**

The company was previously ticketed and ordered relating to unregulated discharge from the SWP #3. That matter has since been resolved and the ECA amended to allow for continuous discharge.

**4.0 SUMMARY OF INSPECTION FINDINGS**

**Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?**

No

**Specifics:**

**Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material?**

No

**Specifics:**

**Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment?**

No

**Specifics:**

**Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material?**

No

**Specifics:**

**Was there any indication of minor administrative non-compliance?**

No

**Specifics:**

**5.0 ACTION(S) REQUIRED**

No Actions required

**6.0 OTHER INSPECTION FINDINGS**

None

**7.0 INCIDENT REPORT**

Not Applicable

**8.0 ATTACHMENTS**

**PREPARED BY:**

**Environmental Officer:**

**Name:**

David Arnott  
Kingston District Office

**District Office:**

**Date:**

2012/06/27

**Signature**



**REVIEWED BY:**

**District Supervisor:**

**Name:**

Brian Kaye  
Kingston District Office

**District Office:**

**Date:**

2012/06/29

**Signature:**



**File Storage Number:**

SILNRIBE610 - RICHMOND  
WDS

**Note:**

"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"



## Non-Hazardous Waste Transfer Processing Inspection Report

<b>Client:</b>	Waste Management Canada Corporation, Business/Facility Name: Waste Management of Canada Mailing Address: 1271 Beechwood Rd, Rural Route, 6, Napanee, Ontario, Canada, K7R 3L1 Physical Address: 1271 Beechwood Rd R.R. #6, Greater Napanee, Town, County of Lennox and Addington, Ontario, Canada, K7R 3L1 Telephone: (613)388-1057, FAX: (613)388-2785, email: rharris@wm.com Client #: 7403-5X8KZG, Client Type: Corporation Additional Address Info: R.R. #6		
<b>Inspection Site Address:</b>	Richmond Landfill Site Address: 1271 Beechwood Rd Lots 1 2 and 3 Concession 4 Richmond, Greater Napanee, Town, County of Lennox and Addington, K7R 3L1 District Office: Kingston - District GeoReference: , LIO GeoReference: Zone: , UTM Easting: , UTM Northing: , Latitude: , Longitude:		
<b>Contact Name:</b>	Randy Harris	<b>Title:</b>	Site Manager
<b>Contact Telephone:</b>	613-388-1057 ext	<b>Contact Fax:</b>	
<b>Last Inspection Date:</b>			
<b>Inspection Start Date:</b>	2012/05/04	<b>Inspection Finish Date:</b>	2012/05/04
<b>Region:</b>	Eastern		

### 1.0 INTRODUCTION

This inspection was conducted primarily to assess compliance with amended Environmental Compliance Approval (formerly Certificate of Approval) # A371203 Notice #10 issued to Waste Management Canada Corporation (WM) for the Richmond Waste Disposal Site.

The facility stopped receiving waste in July 2011 and the active landfill was closed, capped and seeded later that year in the fall of 2011. Amendment notice #10 to ECA #A371203 was issued on January 9, 2012 allowing for the establishment and operation of a waste and recyclable drop-off facility ('transfer station') at the now closed landfill site. That facility opened to the public in February of this year. This inspection focussed solely on the newly established transfer station. Ministry staff were accompanied throughout the inspection by WM employee Stu Wallbank

### 2.0 INSPECTION OBSERVATIONS

**Certificate of Approval Number(s):**  Yes  No  
**C of A Number(s):** A371203, Notice #10

### 2.1 SITE OPERATION:

**Specifics:**

The transfer station is currently open Wed./Thurs./Fri. from 12PM-5PM and Saturdays from 8AM-1PM. The site currently accepts miscellaneous solid non-hazardous wastes (domestic, C&D, large item), metal and blue box recyclables, tires, electronic wastes, paints and batteries generated within the township boundaries of Greater

Napanee, Deseronto and Tyendinaga. Waste is removed from the site on an as needed basis, twice a week for the solid non-hazardous wastes as required by Condition 5.18 (1) of the ECA and less frequently for other wastes collected. A re-use centre has been established for paints/stains etc.

All drop-off areas were clearly marked and properly maintained. No signs of leaking containers or spills were noted, and there was little accumulated waste on site at the time of inspection. In the original application for amendment WM requested a maximum waste received volume of 100 tonnes/day. This was deemed excessive during the application review, and a reduced daily waste received volume of 50 tonnes/day was incorporated into the ECA with a separate condition added allowing for 25 days where up to 100 tonnes/day could be accepted to accommodate large clean-up events.

Site access is controlled by fencing a gate, appropriate signs were present at the entrance to the site and all vehicle must pass over a weigh scale and report to the site operator prior to off-loading.

**2.2 FINANCIAL ASSURANCE:**

**Specifics:**

Over \$12,000,000 dollars in financial assurance has been provided to the Ministry as required by ECA #A371203.

**2.3 SITE SERVICE AREA:**

**Specifics:**

The site is approved to receive waste from the following townships: Town of Greater Napanee, Town of Deseronto and Tyendinaga Township

**2.4 APPROVED SITE CAPACITY:**

**Specifics:**

As discussed in S. 2.1 above, the site is approved to accept a maximum of 50 tonne/day of waste and recyclables. On 25 occasions throughout the year, the site is approved to accept up to 100 tonne/day to facilitate large clean-up events.

**3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES**

None.

**4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)**

**Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?**

No

**Specifics:**

**Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?**

No

**Specifics:**

**Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?**

No

**Specifics:**

**Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?**

No

**Specifics:**

**Was there any indication of minor administrative non-compliance?**

No

**Specifics:**

**5.0 ACTION(S) REQUIRED**

None

**6.0 OTHER INSPECTION FINDINGS**

None

**7.0 INCIDENT REPORT**

Not Applicable

**8.0 ATTACHMENTS**

**PREPARED BY:**  
Environmental Officer:

Name:

David Arnott

District Office:

Kingston District Office

Date:

2012/06/28

Signature



**REVIEWED BY:**

District Supervisor:

Name:

Brian Kaye

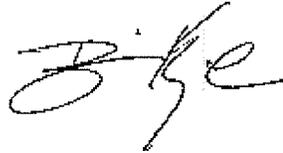
District Office:

Kingston District Office

Date:

2012/06/29

Signature:



**File Storage Number:**

SILNRIBE610 - RICHMOND  
WDS

**Note:**

"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

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## Appendix G

### Letters of Approval for Alternate Leachate Treatment Sites

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The Corporation of the Town of Cobourg  
55 King Street West  
Cobourg, ON, K9A 5H3

March 2, 2012

WM Waste Management  
Mr. Randy Harris, Site Manager  
1271 Beechwood Road  
RR #6, Napanee, ON, K7R 3L1

Dear Mr. Harris:

We have reviewed the analytical data for the leachate collected from the Richmond Landfill site in Napanee, ON. Based on this data we are confident that our Sequence Batch Reactor (SBR), located at the Lucas Point Water Pollution Control Plant on Normar Road, will be able to adequately treat this material on a contingency basis.

The available capacity in the SBR varies from day to day, depending on others who have elected to use our facility for similar purposes. In this regard we would ask that you please contact us prior to sending this material, to arrange an appropriate time for delivery. Verbal consent to discharge at the Lucas Point facility can be obtained from one of the following:

1. Bill Peebles (WPCP Manager): 905-372-7332
2. Jennifer Leno (Environmental Technician): 905-372-5539
3. Ray Davis (Foreman, Plant #2): 905-372-5539
4. Barry Thrasher (Deputy Director of Public Works): 905-372-9971

It is understood by all parties that there can be no guarantees that the Town of Cobourg can unconditionally accept the leachate from your landfill site. Domestic leachate from our own landfill sites must be accepted on a priority basis. If the incoming volume from your landfill site would cause us to exceed the maximum capacity of the SBR unit, we would not be able to accept it. Historically, such conditions have never occurred; however, we would like you to be aware that this is a possibility.

Mr. Randy Harris  
March 2, 2012  
Page 2

The address of the facility to which you are to discharge your leachate is:

Lucas Point Water Pollution Control Plant (Plant #2)  
95 Normar Road  
Cobourg, ON, K9A 4J8  
905-372-5539

The disposal rate for leachate is dependant upon the organic strength of the material received. Our rate schedule can be obtained from the Town of Cobourg website at [www.cobourg.ca](http://www.cobourg.ca) or by contacting Jennifer Leno at the above listed phone number.

If you have any questions regarding this issue, please give me a call.

Regards,

A handwritten signature in black ink, appearing to read "Bill Peeples". The signature is stylized with a large initial "B" and a long, sweeping underline.

Bill Peeples, Manager  
Water Pollution Control Department  
Town of Cobourg  
905-372-7332

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## Appendix H

2012 Monthly Leachate Quality Data,  
provided by Water and Earth Science  
Associates

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Parameter	Units	N. Chamber 2012-01-25	N. Chamber 2012-02-21	N. Chamber 2012-03-19	N. Chamber 2012-04-22	N. Chamber 2012-05-07	N. Chamber 2012-06-13	N. Chamber 2012-07-05	N. Chamber 2012-08-16	N. Chamber 2012-09-25	N. Chamber 2012-10-23	N. Chamber 2012-11-21	N. Chamber 2012-12-11
Arsenic	mg/L	0.011	0.016	0.011	0.057	0.011	0.03	0.07	0.035	0.013	< 0.01	< 0.002	< 0.005
Cadmium	mg/L	< 0.0001	0.0003	0.0001	< 0.001	< 0.0001	0.0004	0.006	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0025
Cobalt	mg/L	0.022	0.037	0.021	0.055	0.019	0.048	0.019	0.059	0.019	< 0.01	< 0.002	< 0.005
Chromium	mg/L	0.068	0.12	0.073	0.29	0.31	0.18	0.33	0.21	0.05	< 0.01	< 0.002	< 0.005
Copper	mg/L	< 0.01	< 0.0002	0.01	< 0.02	0.009	0.015	1.3	0.033	0.025	< 0.005	0.001	< 0.0025
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	0.0012	< 0.0002	< 0.0002	< 0.005	< 0.001	< 0.0025
Molybdenum	mg/L	0.004	0.007	0.004	< 0.02	0.004	0.009	0.035	< 0.02	< 0.01	< 0.01	< 0.002	< 0.005
Nickel	mg/L	0.095	0.16	0.23	0.23	0.11	0.19	0.46	0.26	0.079	< 0.01	< 0.002	< 0.005
Lead	mg/L	0.0029	0.0038	0.0035	0.009	0.009	0.009	0.19	0.006	0.004	< 0.01	< 0.002	< 0.005
Selenium	mg/L	< 0.01	< 0.005	< 0.005	< 0.05	< 0.01	< 0.01	< 0.05	< 0.05	0.004	< 0.005	< 0.001	< 0.0025
Zinc	mg/L	0.051	0.057	0.054	0.1	0.039	0.27	12	< 0.1	< 0.05	< 0.01	< 0.002	< 0.005
Alkalinity	mg/L	3240	4590	3600	6700	3100	6000	6200	6500	2600	< 0.01	< 0.002	< 0.005
Hardness	mg/L	930	1000	820	920	820	1000	1000	830	830	< 0.01	< 0.002	< 0.005
Dissolved Organic Carbon	mg/L	216	403	250	770	240	590	550	620	210	0.00014	0.00038	0.00043
pH (Lab)	unitless	7.21	7.38	7.55	7.68	7.32	7.74	7.62	7.69	7.27	0.00011	0.00055	0.00055
Ammonia	mg/L	443	761	491	1130	422	972	1200	1190	370	0.00033	0.00052	0.00039
Nitrite	mg/L	< 0.05	< 0.05	< 0.1	< 0.1	< 0.1	< 0.5	0.064	< 0.2	< 0.1	< 0.00005	< 0.00005	< 0.00005
Nitrate	mg/L	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.5	< 0.1	< 2	< 1	< 0.5	< 0.1	< 0.25
Total Kjeldahl Nitrogen	mg/L	450	910	480	1200	470	1100	960	1200	400	4600	4300	3200
Phenols	mg/L	0.1	0.07	0.79	1.2	0.8	1.7	0.58	0.14	0.042	568	662	471
Acenaphthene	mg/L	0.00094	0.00092	0.00077	0.001	0.00059	0.00058	0.00089	0.00093	0.00035	0.00092	< 0.0005	0.00015
Acenaphthylene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00025	< 0.00005	< 0.00025	< 0.00005	< 0.00005	< 0.00005	0.00092	< 0.0005	0.00015
Anthracene	mg/L	0.00015	0.00017	0.00013	0.00035	0.00093	< 0.00025	0.00026	0.00035	< 0.0005	0.017	0.015	0.01
Benzo(a)anthracene	mg/L	< 0.00005	0.00082	0.000057	0.00042	0.00059	< 0.00025	0.00026	0.00035	0.00052	< 0.005	< 0.001	0.00059
Benzo(a)pyrene	mg/L	< 0.00001	0.00018	0.00001	0.00013	0.00018	0.00065	< 0.00005	0.00015	0.00018	0.00035	0.00037	0.00027
Benzo(b)fluoranthene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00025	< 0.00005	< 0.00025	< 0.00005	0.0002	< 0.00005	0.000035	< 0.00005	< 0.00005
Benzo(k)fluoranthene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00025	< 0.00005	< 0.00025	< 0.00005	0.00057	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Chrysene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00032	< 0.00005	< 0.00025	< 0.00005	0.00073	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dibenz(a,h)anthracene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00025	< 0.00005	< 0.00025	0.00064	0.00022	< 0.00005	< 0.00005	< 0.001	< 0.00005
Fluoranthene	mg/L	0.00024	0.00034	0.00023	0.0013	0.00019	0.00048	0.00036	0.001	0.00019	< 0.01	< 0.002	< 0.005
Fluorene	mg/L	0.00057	0.00055	0.00051	0.00079	0.00038	0.00048	0.00076	0.00081	0.0003	< 0.0001	< 0.005	< 0.013
Indeno(1,2,3-cd)pyrene	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00025	< 0.00005	< 0.00025	< 0.00005	0.00081	0.0003	< 0.0001	< 0.005	< 0.001
1-Methylnaphthalene	mg/L	0.0015	0.0012	0.00084	0.00074	0.00034	0.00041	0.00051	< 0.00005	< 0.00005	< 0.005	< 0.001	< 0.0025
2-Methylnaphthalene	mg/L	0.0015	0.0008	0.00056	0.00055	0.00034	0.00042	0.00061	0.00072	0.00031	< 0.01	< 0.002	< 0.005
Naphthalene	mg/L	0.013	0.01	0.0073	< 0.01	< 0.005	0.0025	0.0025	0.003	0.003	< 0.005	< 0.001	< 0.0025
Phenanthrene	mg/L	0.00076	0.001	0.00072	0.002	0.00023	0.00095	0.0017	0.0019	0.00039	< 0.025	< 0.006	< 0.013
Pyrene	mg/L	0.00022	0.00032	0.00021	0.0012	0.00019	0.00044	0.00035	0.00094	0.00021	0.094	0.11	0.073
TPH (F1 C6-C10 - BTEX)	mg/L	< 0.025	< 0.025	0.08	0.044	0.039	0.12	< 0.025	< 0.025	< 0.025	< 0.00005	0.000062	0.00054
TPH (F1 C6-C10)	mg/L	0.16	0.13	0.3	0.14	0.14	0.18	0.058	0.026	0.049	< 0.005	< 0.001	< 0.0025

---

## Appendix I

Memorandum: 2012 Stormwater  
Management Ponds Monitoring Results,  
prepared by Water and Earth Science  
Associates

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a  BluMetric company

## MEMORANDUM

**Date:** March 25, 2013  
**To:** Chris Prucha, Director, Groundwater Protection Program, Waste Management (WM)  
**Cc:** Wayne Jenken, Area Landfill Engineer, WM  
Bev Leno, Genivar Inc.  
**From:** David Harding, WESA, a division of BluMetric Environmental Inc.  
**Project No:** KB11168-00-00  
**Re:** 2012 Stormwater Management Ponds Monitoring Results  
WM Richmond Landfill, Town of Greater Napanee, Ontario

---

The purpose of this memorandum is to provide a summary and interpretation of the stormwater monitoring data collected from the WM Richmond Landfill in 2012. This memorandum is prepared in accordance with Condition 10.(4)(a) of Environmental Compliance Approval (ECA) No. 1688-8HZNJG.

A summary of the stormwater monitoring results is attached. Samples were collected during six events in 2012 from the discharge points of each of the three stormwater management ponds: Northeast (NE) Pond, Northwest (NW) Pond and Southwest (SW) Pond. The results of the chemical analyses are compared to the Provincial water Quality Objectives (PWQO) on the attached tables. The concentrations of the following parameters exceeded the PWQO on occasion: aluminum, copper, iron, phenols, total phosphorus, and silver (one time only; May 7 at the NE Pond).

The results of the semi-annual surface water monitoring program of the receiving waters for these ponds (Marysville Creek and Beechwood Ditch), as reported in the 2012 Semi-Annual Monitoring Reports, 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 and *Daphnia magna* on a quarterly frequency, as per Condition 8.(3) of the ECA. The results are summarized below; there was no mortality of any test organisms observed in any of the samples.



Tel. 613-839-3053  
Fax. 613-839-5376

WESA, a division of BluMetric Environmental Inc.  
3108 Carp Road, PO Box 430, Ottawa, Ontario, Canada K0A 1L0

[www.wesa.ca](http://www.wesa.ca)

**Per Cent Mortality of Rainbow Trout (RBT) and Daphnia Magna (DM) in Stormwater Management Pond Samples, 2012**

	April 23, 2012		June 13, 2012		Sept. 25, 2012		Nov. 28, 2012	
	RBT	DM	RBT	DM	RBT	DM	RBT	DM
SW Pond	0	0	0	0	0	0	0	0
NE Pond	0	0	0	0	0	0	0	0
NW Pond	0	0	0	0	0	0	0	0

The acute lethality results from the 2012 samples indicate that the stormwater management ponds were operating as designed, and discharging non-lethal effluent to the receiving waters.

Based on the 2012 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 are adequate for the WM Richmond Landfill.

We trust you will find this evaluation of the 2012 stormwater monitoring data for the WM Richmond Landfill site to be satisfactory. If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully Submitted,



David Harding, M.Sc. P.Eng.  
Senior Consulting Engineer

Encl.

*Ref: KB11168-00-0 Memo March25-2013.docx*

Parameter	Units	PWQO	NE Pond 2012-03-19	NE Pond 2012-04-23	NE Pond 2012-05-07	NE Pond 2012-09-25	NE Pond 2012-11-21	NE Pond 2012-12-12
Alkalinity	mg/L	0.075	300	350	340	250	350	380
Aluminum	mg/L		0.36	0.013	0.0082	0.083	0.024	0.22
Ammonia	mg/L		<0.05	<0.05	<0.05	0.23	<0.05	<0.05
Unionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.1	<0.001	0.0016	0.0011	<0.001	<0.001	0.0015
Barium	mg/L		0.073	0.054	0.046	0.063	0.098	0.12
Benzene	mg/L	0.1	<0.0002	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Beryllium	mg/L	1.1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L	0.2	0.12	0.19	0.17	0.15	0.18	0.18
Cadmium	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Carbonaceous BOD	mg/L		5	8	4	5	<2	3
Chemical Oxygen Demand	mg/L		60	70	70	43	39	49
Chloride	mg/L		53	80	76	56	89	97
Chromium (total)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Field Conductivity	µS/cm		652	560	875			
Cobalt	mg/L	0.0009	0.00072	<0.0005	<0.0005	<0.0005	<0.0005	0.00074
Copper	mg/L	0.005	0.0043	0.0032	0.0029	0.0018	0.0013	0.0018
Ethylbenzene	mg/L	0.008	<0.0002	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Field Temperature	°C		16.2	8.01	17.68	17.1	3.46	1.38
Hardness	mg/L		280	300	290	220	350	380
Iron	mg/L	0.3	0.33	0.17	0.15	0.16	0.12	0.54
m+p-Xylene	mg/L	0.002	<0.0002	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Mercury	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Naphthalene	mg/L	0.007	<0.001	<0.0025	<0.0005	<0.005	<0.002	<0.002
Nickel	mg/L	0.025	0.0051	0.0063	0.0063	0.0032	0.0064	0.0062
Nitrate	mg/L		0.12	<0.1	<0.1	0.25	<0.1	<0.1
o-Xylene	mg/L	0.04	<0.0002	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
pH (Field)	-	6.5-8.5	7.75	7.84	7.8	7.58	6.77	7.06
pH (Lab)	-	6.5-8.5	8.1	8.07	8.32	7.78	7.69	7.91
Phenols	mg/L	0.001	0.0036	0.0021	0.0067	<0.001	<0.001	<0.001
Phosphorus (total)	mg/L	0.02	0.084	0.082	0.039	0.069	0.018	0.036
Potassium	mg/L		6.7	8.5	7.1	9.8	13	13
Selenium	mg/L	0.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Silver	mg/L	0.0001	<0.0001	<0.0001	0.00015	<0.0001	<0.0001	<0.0001
Sodium	mg/L		55	78	77	50	81	82
Toluene	mg/L	0.0008	<0.0004	<0.001	<0.0002	<0.0002	<0.0002	0.00041
Total Dissolved Solids	mg/L		404	470	464	388	518	546
Total Kjeldahl Nitrogen	mg/L		1.8	1.9	1.6	2	1.9	1.4
Total Organic Carbon	mg/L		17	20	21	14	14	17
Total Suspended Solids	mg/L		<10	<10	<10	<10	<10	<10
Total Xylenes	mg/L		<0.0002	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Zinc	mg/L	0.03	0.011	<0.005	0.012	0.011	<0.005	<0.005

PWQO: Provincial Water Quality Objectives  
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Parameter	Units	PWQO	NW Pond 2012-03-19	NW Pond 2012-04-23	NW Pond 2012-05-07	NW Pond 2012-09-25	NW Pond 2012-11-21	NW Pond 2012-12-12
Alkalinity	mg/L		140	200	190	160	180	190
Aluminum	mg/L	0.075	0.051	0.16	0.12	0.55	0.28	0.08
Ammonia	mg/L		<0.05	<0.05	<0.05	0.23	0.068	<0.05
Unionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.1	<0.001	0.0012	0.0013	0.0011	<0.001	<0.001
Barium	mg/L		0.035	0.04	0.026	0.068	0.073	0.071
Benzene	mg/L	0.1	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Beryllium	mg/L	1.1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L	0.2	0.043	0.083	0.091	0.099	0.09	0.082
Cadmium	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Carbonaceous BOD	mg/L		4	5	6	4	3	3
Chemical Oxygen Demand	mg/L		39	56	55	50	32	31
Chloride	mg/L		33	57	55	34	73	70
Chromium (total)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Field Conductivity	µS/cm		390	374	614			
Cobalt	mg/L	0.0009	<0.0005	<0.0005	<0.0005	0.00054	<0.0005	<0.0005
Copper	mg/L	0.005	0.0031	0.003	0.0032	0.016	0.0068	0.005
Ethylbenzene	mg/L	0.008	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Field Temperature	°C		14.7	8.88	18.3	18.5	3.32	4.11
Hardness	mg/L		150	200	190	190	260	270
Iron	mg/L	0.3	0.11	0.37	0.35	0.44	<0.1	<0.1
m+p-Xylene	mg/L	0.002	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Mercury	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Naphthalene	mg/L	0.007	<0.0005	<0.0025	<0.0005	<0.005	<0.002	<0.002
Nickel	mg/L	0.025	0.002	0.0044	0.0038	0.0025	0.0037	0.0032
Nitrate	mg/L		<0.1	<0.1	<0.1	0.14	<0.1	<0.1
o-Xylene	mg/L	0.04	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
pH (Field)		6.5-8.5	7.96	8.06	8.35	7.91	7.22	7.64
pH (Lab)		6.5-8.5	8.05	8.07	8.41	8.04	7.88	7.79
Phenols	mg/L	0.001	0.0024	0.0012	0.0028	<0.001	<0.001	<0.001
Phosphorus (total)	mg/L	0.02	0.056	0.088	0.053	0.086	0.04	0.047
Potassium	mg/L		4.5	5.9	4.9	9.1	7.3	7.6
Selenium	mg/L	0.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Silver	mg/L	0.0007	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L		24	46	51	32	53	49
Toluene	mg/L	0.0008	<0.0002	<0.001	<0.0002	<0.002	<0.0002	<0.0002
Total Dissolved Solids	mg/L		230	288	322	342	426	378
Total Kjeldahl Nitrogen	mg/L		1.3	1.4	1.3	1.6	1.6	1.2
Total Organic Carbon	mg/L		11	15	16	15	11	11
Total Suspended Solids	mg/L		<10	<10	<10	15	<10	<10
Total Xylenes	mg/L		<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Zinc	mg/L	0.03	<0.005	<0.005	0.0091	0.0078	<0.005	0.0099

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Parameter	Units	PWQO	SW Pond 2012-03-19	SW Pond 2012-04-23	SW Pond 2012-05-07	SW Pond 2012-09-25	SW Pond 2012-11-21	SW Pond 2012-12-12
Alkalinity	mg/L	0.075	160	190	170	160	190	210
Aluminum	mg/L	0.075	0.069	0.06	0.035	0.33	0.067	0.35
Ammonia	mg/L	0.02	<0.05	<0.05	<0.05	0.11	<0.05	<0.05
Unionized Ammonia	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	mg/L	0.1	0.041	0.038	0.035	0.05	0.048	0.06
Benzene	mg/L	0.1	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Beryllium	mg/L	1.1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L	0.2	0.035	0.037	0.043	0.035	0.055	0.049
Cadmium	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Carbonaceous BOD	mg/L		3	2	3	4	3	3
Chemical Oxygen Demand	mg/L		25	30	30	130	34	30
Chloride	mg/L		35	37	43	23	54	45
Chromium (total)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Field Conductivity	µS/cm		445	330	533			
Cobalt	mg/L	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.005	0.0013	0.0016	0.001	0.0021	0.0012	0.0081
Ethylbenzene	mg/L	0.008	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Field Temperature	°C		13.3	7.83	17.4	21.3	3.54	2.02
Hardness	mg/L		190	210	180	180	200	240
Iron	mg/L	0.3	0.11	<0.1	<0.1	0.31	<0.1	0.34
m+p-Xylene	mg/L	0.002	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Mercury	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Naphthalene	mg/L	0.007	<0.0005	<0.0025	<0.0005	<0.005	<0.002	<0.002
Nickel	mg/L	0.025	0.0014	0.001	<0.001	<0.001	<0.001	0.0056
Nitrate	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o-Xylene	mg/L	0.04	<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
pH (Field)	-	6.5-8.5	7.65	8.02	7.69	7.99	6.18	7.56
pH (Lab)	-	6.5-8.5	7.96	7.98	8.22	7.8	7.26	7.77
Phenols	mg/L	0.007	0.0016	0.0019	0.0029	<0.001	<0.001	<0.001
Phosphorus (total)	mg/L	0.02	0.043	0.041	0.021	0.075	0.026	0.026
Potassium	mg/L		3.4	4	4.2	6.5	9	8.9
Selenium	mg/L	0.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Silver	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L		27	29	39	17	42	40
Toluene	mg/L	0.0008	<0.0002	<0.001	<0.0002	<0.002	<0.0002	<0.0002
Total Dissolved Solids	mg/L		256	248	298	268	220	322
Total Kjeldahl Nitrogen	mg/L		0.73	0.8	0.7	1.4	1.2	1.1
Total Organic Carbon	mg/L		6.9	8.4	8.7	8.4	12	10
Total Suspended Solids	mg/L		<10	<10	<10	<10	<10	<10
Total Xylenes	mg/L		<0.0001	<0.0005	<0.0001	<0.001	<0.0001	<0.0001
Zinc	mg/L	0.03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

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