



November 8, 2017

Dear All,

You are receiving this communication to keep you apprised of the status of the ongoing environmental monitoring activities associated with the closed Waste Management (WM) Landfill property.

Under the new Environmental Compliance Approval (ECA) Conditions set forth in the revised Environmental Monitoring Plan (EMP) dated April 15, 2016 and ordered by the Environmental Review Tribunal (ERT), WM has notified the Ministry of Environment and Climate Change (MOECC) District Manager of results from the most recent sampling event conducted as a part of scheduled fall 2017 semi-annual environmental monitoring event conducted between October 16 and 19, 2017.

We are providing, for your information, the notice supplied to MOECC on November 8, 2017. All results outlined in this notice are related to concentration exceedances at locations within the proposed Contaminant Attenuation Zone (CAZ).

These results are consistent with historical results and will be evaluated in the fall semi-annual report that will be issued by January 15, 2018.

Regards,

Bill McDonough
Manager, Richmond Landfill
Waste Management of Canada Corporation

Encl.



MEMORANDUM

DATE: November 8, 2017
TO: Trevor Dagilis, District Manager, Ministry of the Environment and Climate Change (MOECC)
CC: David Arnott, Shawn Trimper and Peter Taylor (MOECC)
Chris Prucha, Bill McDonough and Jim Forney (WM)
FROM: François Richard (BluMetric)
PROJECT NO: 170194-02
SUBJECT: Notification of Off-site Exceedances, WM Richmond Landfill, Town of Greater Napanee

This memorandum is provided on behalf of Waste Management of Canada Corporation as required by Conditions 8.7 and 8.8 of Environmental Compliance Approval (ECA) No. A371203 for the Richmond Landfill, Town of Greater Napanee, Ontario. This requirement is outlined in the Environmental Monitoring Plan (EMP) for the site¹, implemented on April 16, 2016 on an interim basis as ordered by the Environmental Review Tribunal (ERT) Order dated December 24, 2015. Conditions 8.7 and 8.8 of the ECA stipulate that monitoring results shall be reported to the MOECC District Manager within 48 hours of the determination of the exceedance (initial data screening) if they meet either of the following conditions, respectively:

- (1) any off-site exceedance of the applicable criteria for groundwater (Reasonable Use Limits (RUL)) or surface water (Provincial Water Quality Objectives (PWQO)), or
- (2) 1,4 dioxane concentrations at or above the detection limit of 1 µg/L at any groundwater well or domestic well at which 1,4 dioxane has not been detected in the past or at any surface water monitoring location.

RESULTS

The groundwater and surface water sampling was completed as part of the fall semi-annual monitoring event between October 16 and 19, 2017, following the requirements outlined in the latest EMP for the site.

¹ *Environmental Monitoring Plan, WM Richmond Landfill, Town of Greater Napanee, Ontario, rev. No.05*, prepared by BluMetric Environmental Inc., dated April 2016



There were no off-site exceedances in groundwater observed from the shallow flow zone, while the analytical results for samples from off-site intermediate bedrock groundwater flow zone monitoring locations show the presence of parameters that exceeded their respective RUL, as summarized in **Table 1**. These include:

- One or several non-health based parameters (alkalinity, chloride, dissolved organic carbon, iron, manganese, sodium and/or total dissolved solids) at locations within the proposed Contaminant Attenuation Zone (CAZ) M114-1, M121, M123, M167, M168, M170, M172, M178R-2, M178R-3, M178R-4, M179, M185-1 and M186; and
- Volatile Organic Compound (VOC) 1,4 dioxane at monitoring wells located within the proposed CAZ: M64-2, M114-1, M121 (1,4 dioxane, benzene and ethylbenzene), M123, M167, M168, M170, M172, M178R-2, M178R-3 and M178R-4.

Analytical results from off-site surface water monitoring locations along the surface water course located in the central portion of the proposed contaminant attenuation zone (CAZ) included some parameters measured above their respective PWQO at upstream (S18) and downstream (S19 and S20) monitoring locations, including:

- Cobalt (0.001 mg/L) and total phenols (0.0014 mg/L) at monitoring location S19, slightly higher than their respective PWQO of 0.0009 and 0.001 mg/L; and
- Iron and total phosphorous at concentrations above their PWQO at all locations (upstream and downstream).

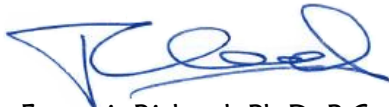
CLOSING

The results from the latest environmental monitoring event are consistent with those from previous sampling events, and will be reported as part of the fall semi-annual monitoring report by January 15, 2018 as required by ECA Condition 14.1.

We trust the above information is satisfactory. If you have any questions or need further information regarding the completed work please do not hesitate to contact the undersigned.

Respectfully submitted,

BluMetric Environmental Inc.



Francois Richard, Ph.D. P.Geo.
Senior Hydrogeologist

Encl.

Table 1. Summary of RUL Exceedances from Fall 2017 Groundwater Monitoring Results

Parameter	General and Inorganic Parameters							Volatile Organic Compounds (VOCs)		
	Alkalinity	Chloride	Dissolved Organic Carbon	Iron	Manganese	Sodium	Total Dissolved Solids	1,4-Dioxane	Benzene	Ethylbenzene
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
RUL*	400	132	3.5	0.18	0.032	106	465	0.001	0.0014	0.0013
M64-2								0.003		
M114-1	490		4.8	7.9	0.4		640	0.0061		
M121	460	1000	3.8			450	2150	0.0081	0.068	0.0023
M123			3.8					0.0055		
M167		420				220	1180	0.0022		
M168	420	320				160	1070	0.0051		
M170	670	750	4.2			640	1880	0.009		
M172	570		6.5	22	0.75		615	0.0096		
M178R-2			3.7	2.1	0.058			0.0037		
M178R-3			3.9	0.85	0.041			0.0056		
M178R-4			3.6					0.0051		
M179				0.43			485			
M185-1		350			0.037	360	950			
M186		1200		0.52	0.12	650	2210			

* RUL: Reasonable Use Limit

Table 2. Summary of PWQO Exceedances from Fall 2017 Surface Water Monitoring Results

Parameter	Cobalt	Iron	Phenols	Phosphorus
Units	mg/L	mg/L	mg/L	mg/L
PWQO*	0.0009	0.3	0.001	0.03
S18 (upstream)		0.74		0.09
S19 (downstream)	0.001	2.1	0.0014	0.089
S20 (downstream)		0.52		0.057

* PWQO: Provincial Water Quality Objectives