May 13, 2020

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) Richmond Landfill property.

Under the new Environmental Compliance Approval conditions set forth in the revised Environmental Monitoring Plan and ordered by the Environmental Review Tribunal, WM has notified the Ministry of Environment, Conservation and Parks (MECP) District Manager of results from the most recent sampling event. This work was conducted between April 7 and April 17, 2020, as a part of scheduled spring 2020 semi-annual environmental monitoring event.

We are providing, for your information, the notice supplied to MECP on May 13, 2020. All results outlined in this notice are related to concentration exceedances at locations within the proposed Contaminant Attenuation Zone, as well as one location on the property to the east of the southern part of the eastern landfill property boundary. These results are generally similar to the historical exceedances observed at these locations for the parameters listed.

These results will be evaluated in the spring semi-annual report that will be issued by July 15, 2020.

Regards,

Bill McDonough
Manager, Richmond Landfill
Waste Management of Canada Corporation

Encl.

MEMORANDUM

DATE:	May 13, 2020
TO:	Trevor Dagilis, District Manager, Ministry of the Environment, Conservation and Parks (MECP)
CC:	David Arnott, Kyle Stephenson, Shawn Trimper and Peter Taylor (MECP) Chris Prucha, Bill McDonough and Jim Forney (WM)
FROM:	François Richard and Madeleine Corriveau (BluMetric)
PROJECT NO:	200172-03
SUBJECT:	Notification of 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 site[1], 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 MECP District Manager within 48 hours of the determination of the exceedance (initial data screening) if they meet one of the following conditions:

- *any off-site exceedance of the applicable criteria for groundwater (Reasonable Use Limits (RUL)) or surface water (Provincial Water Quality Objectives (PWQO)); and/or,*
- *1,4-dioxane is detected above 1 µg/L at any groundwater or domestic well where 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 spring semi-annual monitoring event between April 7 and April 17, 2020, 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

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There were no exceedances in groundwater observed from the shallow flow zone off-site monitoring location M114-2, with the exception of total dissolved solids (TDS) with a concentration of 455 mg/L, marginally above the RUL of 452 mg/L.

The analytical results for samples from off-site intermediate bedrock groundwater flow zone monitoring locations showed the presence of parameters that exceeded their respective RUL, as summarized in **Table 1.** These results are generally similar to the historical exceedances observed at these locations for the parameters listed, and include:

- One or several non-health based parameters (alkalinity, chloride, dissolved organic carbon, iron, manganese, sodium and/or total dissolved solids) at locations M64-2, M114-1, M121, M123, M167, M168, M178R-2, M178R-3, M178R-4, M179, M185-1, M186 and M192; and,
- Volatile Organic Compounds (VOCs) including 1,4-dioxane at monitoring wells M64-2, M114-1, M121 (as well as benzene), M123, M167, M168, M178R-2, M178R-3, M178R-4 and M192.

Additionally, 1,4 dioxane was detected at intermediate bedrock groundwater monitoring well M70-2 located on site near the southeastern property limit, within the previously delineated area of leachate impacts.

Surface water analytical results at off-site sampling locations were below their respective PWQO, with the following exceptions (see **Table 2**):

- At sampling locations S3 and S8R, the ammonia (unionized) concentrations of 0.021 and 0.053 mg/L, respectively, were slightly above the PWQO of 0.02 mg/L;
- At sampling location S18, the total phosphorous concentration of 0.032 mg/L was slightly above the PWQO of 0.03 mg/L; and,
- At sampling locations S3, the chromium (VI) concentration of 0.0018 mg/L, was slightly above the PWQO of 0.001 mg/L and the copper concentration of 0.008 mg/L was slightly above the PWQO of 0.005 mg/L.

CLOSING

The results from the latest environmental monitoring event will be reported as part of the spring semi-annual monitoring report by July 15, 2020 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

Madeleine Corriveau, M.Sc., P.Geo.
Senior Geoscientist

Encl.

Table 1: Summary of Off-Site RUL Exceedances from Spring 2020 Groundwater Monitoring Results

	General and Inorganic Parameters							Volatile Organic Compounds (VOCs)	
Parameter	Alkalinity	Chloride	Dissolved Organic Carbon	Iron	Manganese	Sodium	Total Dissolved Solids	1,4-Dioxane	Benzene
Units	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**
M64-2							485	0.0031	
M70-2**	500	400		0.89		380	1290	0.0051	
M114-1			4.0	6.8	0.33		510	0.0057	
M121	500		4.1				670	0.0076	0.0051
M123							525	0.0042	
M167		400				190	1170	0.0021	
M168	480	300	4.0			170	1020	0.0087	
M178R-2			3.9	1.2	0.07		560	0.0049	
M178R-3			4.0	1.0	0.052		555	0.005	
M178R-4	410		4.1				600	0.0061	
M179				0.23					
M185-1		450				380	1170		
M186		1100		0.43	0.059	700	2180		
M192	550	610	3.8			400	1490	0.0067	

** RUL: Reasonable Use Limit*

*** M70-2 is located on-site, 1,4-dioxane detected for the first time at this location*

Table 2: Summary of Off-Site PWQO Exceedances from Spring 2020 Surface Water Monitoring Results

Parameter	Ammonia (unionized)	Phosphorus (total)	Chromium (VI)	Copper
Units	mg/L	mg/L	mg/L	mg/L
PWQO*	**0.02**	**0.03**	**0.001**	**0.005**
S3	0.021		0.0018	0.008
S8R	0.053			
S18		0.032		

** PWQO: Provincial Water Quality Objectives*