March 24, 2016

Dear All,

You are receiving this communication to keep you apprised of the status of the ongoing hydrogeological investigation associated with the closed Waste Management Landfill property.

Following the conclusion of the Environmental Review Tribunal (ERT) proceedings last summer, work has continued to address activities required by the ERT Order issued on July 21, 2015, under technical oversight from Ministry of the Environment and Climate Change (MOECC). Specifically, additional field investigations have been conducted to further delineate a Contaminant Attenuation Zone (CAZ Investigation) for the site that, once approved, will allow the Environmental Monitoring Plan (EMP) to be finalized.

In the interim, the EMP was modified as ordered by the ERT to include new or modified conditions to the Environmental Compliance Approval (ECA) for the site, and implemented on an interim basis as of September 1, 2015.

Under the new ECA Conditions set forth in the revised EMP and ordered by the ERT, Waste Management has notified the MOECC District Manager of results from recent sampling events conducted as a part of the ERT Order, Environmental Monitoring Program and CAZ Investigation. We are providing, for your information, the notice supplied to MOECC on March 24, 2016. All results outlined in this notice are related to concentration exceedances at locations within the proposed CAZ, as well as two new locations on the property to the east of the southern part of the eastern landfill property boundary, where recently drilled groundwater monitoring wells (M192 and M193) have been sampled for the first time. The results at these new locations are indicative of naturally degraded groundwater, and do not show any evidence of impacts from landfill leachate.

All results will be evaluated in the report that will be issued on April 15, 2016.

Regards,

Timothy Haaf
Manager, Richmond Landfill
Waste Management of Canada Corporation

Encl.

MEMORANDUM

DATE:	March 24, 2015
TO:	Brian Kaye, District Manager, Ministry of the Environment and Climate Change (MOECC)
CC:	Kyle Stephenson, Peter Taylor and Chris Raffael (MOECC) Tim Haaf, Jim Forney, Chris Prucha and Bill McDonough, (WM)
FROM:	François Richard (BluMetric)
PROJECT NO:	160061-00-01
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 Condition 8.7 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 September 1, 2015 on an interim basis as ordered by the Environmental Review Tribunal (ERT) Order dated July 21, 2015.

BACKGROUND

Condition 8.7 of ECA requires that any off-site exceedance of groundwater, surface water or odour be reported to the MOECC District Manager within 48 hours of determining the exceedance. The data evaluation procedures described in the EMP (Section 7) are triggered when new exceedances of the site-specific reasonable use limits (RULs) are identified from the initial screening of sampling results.

PRELIMINARY RESULTS

Groundwater samples were collected on March 7 and 8, 2016 from monitoring wells recently drilled as part of the ongoing hydrogeological investigation aimed at delineating an off-site Contaminant Attenuation Zone (CAZ Investigation) to the south and southeast of the site boundary. Two new groundwater monitoring wells (M192 and M193) were installed on

[1] *Environmental Monitoring Plan, WM Richmond Landfill, Town of Greater Napanee, Ontario, rev. No.04*, prepared by BluMetric Environmental Inc., dated August 2015

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February 22, 2016 on the property to the east of the southern part of the eastern landfill property boundary, and were sampled for the first time. Wells installed in 2015 (M178R-1 to M178R-4 and M187 to M191), last sampled in December, 2015, were also sampled on March 7 and 8, 2016 to comply with Condition 8.5(a)(ii), which requires new monitoring wells to be sampled on a quarterly basis with the first year after being established.

The groundwater quality results from this sampling event are summarized in **Table 1**, with exceedances to RULs highlighted. The initial screening of the results from the sampled locations showed the presence of non-health based parameters which exceeded their respective Reasonable Use Limits (RUL) in the new monitoring wells M192 and M193, as well as for benzene at M193. RUL exceedances were also identified at the other sampled monitoring wells; in all cases, the exceedances at these locations are not new and have been reported previously.

CLOSING

All results will be evaluated as part of the ongoing hydrogeological investigation and formally reported by April 15, 2016 as required by the ERT Order dated December 24, 2015.

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

Table 1: Summary of RUL Exceedances at Off-Site Monitoring Wells – March 7 and 8, 2016

			Martin Property		Contaminant Attenuation Zone (CAZ) South from Beechwood Road									
Reading Name	Units	RUL	M192 2016-03-08	M193 2016-03-08	M168 2016-03-08	M178R-1 2016-03-07	M178R-2 2016-03-07	M178R-3 2016-03-07	M178R-4 2016-03-07	M187 2016-03-08	M188 2016-03-07	M189 2016-03-08	M190 2016-03-08	M191 2016-03-08
General and Inorganic Parameters														
Alkalinity	mg/L	**400**	350	260	350	***420***	***420***	***460***	***470***	250	340	270	260	150
Ammonia	mg/L		2.32	1.46	1.45	5.82	0.27	0.35	0.28	< 0.15	0.73	0.22	< 0.15	20
Boron	mg/L		1.3	0.46	0.36	3.8	0.19	0.2	0.22	0.12	0.61	0.32	0.087	2.9
Calcium	mg/L		83	26	170	220	130	140	150	150	64	120	110	5000
Chloride	mg/L	**132**	***580***	***370***	***340***	***4600***	63	83	100	48	82	40	58	***44000***
Conductivity	µS/cm		2600	1790	1870	15600	1010	1140	1210	931	931	767	740	95200
Dissolved Organic Carbon	mg/L	**3.5**	2.1	***4.2***	***4.3***	***25***	***5.5***	***5.6***	***6.9***	2.8	2.6	2.9	***3.7***	***180***
Iron	mg/L	**0.18**	< 0.1	< 0.1	< 0.1	< 0.1	***1.1***	***0.74***	< 0.1	< 0.1	< 0.1	***0.19***	< 0.1	***7.7***
Magnesium	mg/L		57	25	61	140	27	30	31	12	24	17	12	3600
Manganese	mg/L	**0.032**	***0.041***	0.032	0.0068	***0.16***	***0.056***	***0.051***	0.01	< 0.002	0.0095	***0.13***	0.0067	***1.5***
Nitrate	mg/L		< 0.1	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	0.34	< 0.1	0.48	< 0.1	< 0.5
Nitrite	mg/L		0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.016	< 0.01	< 0.05
Nitrite + Nitrate	mg/L		< 0.1	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	0.34	< 0.1	0.5	< 0.1	< 0.5
Potassium	mg/L		19	16	16	41	5.2	5.6	4.5	2.7	6.8	6.6	3.4	170
Sodium	mg/L	**106**	***340***	***300***	***130***	***2900***	56	61	62	30	98	46	26	***17000***
Sulphate	mg/L		2.3	34	16	420	19	18	20	160	18	57	37	480
Total Dissolved Solids	mg/L	**465**	***1410***	***944***	***1150***	***9020***	***558***	***610***	***656***	***562***	***496***	442	390	***74700***
Volatile Organic Compounds (VOCs)														
1,1,1,2-Tetrachloroethane	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,1,1-Trichloroethane	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
1,1,2,2-Tetrachloroethane	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,1,2-Trichloroethane	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,1-Dichloroethane	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	0.0012	0.0011	0.00016	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
1,1-Dichloroethylene	mg/L	**0.0035**	< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	*< 0.005**
1,2-Dichlorobenzene (o)	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,2-Dichloroethane	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,3,5-Trimethylbenzene	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,3-Dichlorobenzene (m)	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,4-Dichlorobenzene (p)	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
1,4-Dioxane**	mg/L	**0.001**	< 0.001	< 0.001	***0.0062***	< 0.001	***0.0053***	***0.0071***	***0.0078***	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	mg/L	**0.0014**	< 0.0005	***0.0037***	< 0.0002	*< 0.0025**	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	***0.14***
Chlorobenzene	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
Chloroethane	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	0.0016	0.0032	0.0016	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
Chloromethane	mg/L		< 0.0025	< 0.001	< 0.001	< 0.013	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.025
Cis-1,2-Dichloroethylene	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
Dichloromethane	mg/L		< 0.0025	< 0.001	< 0.001	< 0.013	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.025
Ethylbenzene	mg/L	**0.0013**	< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	*< 0.005**
m+p-Xylene	mg/L		< 0.0005	0.00089	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.00017	< 0.0001	< 0.005
o-Xylene	mg/L		< 0.0005	0.00043	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
Styrene	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01
Tetrachloroethylene	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
Toluene	mg/L	**0.0121**	0.002	0.0078	< 0.0004	0.0055	< 0.0002	< 0.0002	< 0.0002	0.00058	< 0.0002	< 0.0002	0.00026	***0.12***
Total Xylenes	mg/L	**0.15**	< 0.0005	0.0013	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.00017	< 0.0001	< 0.005
Trans-1,2-dichloroethylene	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
Trichloroethylene	mg/L		< 0.0005	< 0.0002	< 0.0002	< 0.0025	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.005
Vinyl Chloride	mg/L		< 0.001	< 0.0004	< 0.0004	< 0.005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.01

**** Laboratory reporting limit for some results are higher than the RUL due to sample matrix and foaming (analysis of samples from M178R-1 and M191 required sample dilution)***