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June 25, 2007

Mirka Januszkiewicz, P.Eng  
Director of Waste Management Services  
The Regional Municipality of Durham, Works Department  
605 Rossland Road, P.O. 623  
Whitby, Ontario, L1N 6A3

**Re: Brock Township Landfill Site, March 30, 2007 Site Operations Report (SOR) and  
March 28, 2007 Response to Remedial Action Plan (RAP) comments  
Provincial Officer's Order 0117-6SJRU2**

Dear Ms. Januszkiewicz

Thank you for your March 30, 2007 submission of the Brock Township Landfill Site Operations Report (SOR) in response to the October 13, 2006 Provincial Officers Order (the 'order') issued to Region of Durham relating to the Brock Township landfill site. The purpose of this order was to develop plans for remediation of on and off-site leachate impacts to groundwater and surface water and for a site operations report to ensure sustainable landfill management in the future. I have received and reviewed the March 30, 2007 Site Operations Report as well as the March 28, 2007 response to my March 8, 2007 RAP comments.

### **1.0 Site Operations Report**

The Order required the Region to prepare the SOR outlining groundwater and surface water monitoring programs, future landfill staging and management, and assessment of potential landfill gas generation and migration. The SOR proposes substantial changes to the current site monitoring program including; installation of up to four new wells, abandonment of eleven existing wells, a proposed trigger criteria for perimeter wells, replacement of one current surface water station and abandonment of another. Prior to any changes to the current program, the proposed programs should be assessed in conjunction with the new leachate and stormwater collection systems.

The SOR includes some additional information about the installation of the engineered cover in the proposed landfill staging plan, fill rates and final elevations. These elements of the SOR differ significantly from the landfill operations contemplated in the original application and 1975 Operations Report prepared by the Region. The SOR proposes landfill staging and a cover plan for the site including a final elevation at the crest of 265 metres above sea level (masl) from the current elevation reported as 262masl in the RAP. The original site applications had indicated an operating height and depth of 4' above and 10' below grade (1970 and subsequent applications), and the 1975 Operations Report described a crest elevation of 255masl.

*Next Steps: The Region makes an application to amend and update the current site approval to incorporate the monitoring program and landfilling plans provided in the SOR and where applicable for construction of RAP elements.*

## **2.0 Remedial Action Plan**

The RAP was required to address landfill leachate impacts to both the property immediately north of the site and remedy on-site leachate break-out and seeps. The Region's January 30, 2007 RAP proposed five measures including; acquisition of property to the north, additional wastes and landfill grading, an engineered cover system, a stormwater management system and a leachate management system. I provided my comments on the Region's RAP and we subsequently met on March 15, 2007 to discuss the RAP and SOR requirements. Based on the additional materials provided, I recommended that the Region proceed with the detailed design of the leachate collection and storm water management systems and complete the site characterization.

### **2.1 Stormwater Management and Leachate Management Systems**

The SOR provides in Appendix G a more detailed Stormwater Management Plan including interior and exterior ditches for the segregation of contact runoff and additional information about proposed system capacity and effluent quality. The plans for the leachate collection system have not changed significantly in the SOR. The March 28, 2007 RAP response provided by the Region indicates that there are no plans to complete the leachate system on the western or northern waste boundary unless "deemed necessary". However, SOR drawings suggest an area of "possible extension" along part of the northern boundary. The detailed design should demonstrate that all off-site leachate migration will be addressed and mitigation measures may be required depending on the outcome of work along the western and northern boundaries. It is also unclear in the SOR if the leachate collection system will include treatment, removal or discharge from the site as the SOR figures differ from the proposed reporting conditions.

*Next Steps: The Region prepares a detailed design for and submits an application for the approval of both systems. It is recommended that once the design has been finalized, that the Region consult with the Ministry's Environmental Assessment and Approvals Branch on the OWRA approval requirements for construction of a sewage works and potential discharge to the wetland and/or EPA approvals for any associated alteration to the waste site.*

### **2.2 Site Characterization**

Information is still needed to confirm the extent of wastes and to characterize the soils between the western limits of the landfill and the property boundary. The 1975 Operations Report recommended a 50' buffer around the wastes, however the SOR indicates that the Region has placed fine grained soils to the west of the wastes to build up the area. No records have been provided to describe the type or extent of soils used and given the substantial grade changes since the 1975 report and the most recent fall 2006 site survey, additional work is necessary to confirm conditions on the western boundary of the site. Monitoring is also recommended to assess groundwater conditions and potential impacts to the west. Placement of soils above the 1975 grades is unlikely to have affected the shallow groundwater flow, except to potentially reduce local recharge, but it is not clear how these soils could prevent radial flow from the wastes as suggested by CRA in the RAP response.

*Next Steps: Construction of at least one new monitoring well nest midway between MW5/MW6/MW10 (north boundary) and MW4/MW8 (south of wastes) along the western site boundary. In the event wastes are encountered, complete additional test-pitting as necessary to delineate the western limits of the landfill area.*

### **2.3 Outstanding RAP Issues**

The other measures presented in the RAP as identified above with the additional information submitted in the Region's March 28, 2007 response and SOR have not been demonstrated to our satisfaction as viable or timely options to address the current leachate impacts on and off-site. The proposed additional wastes are not a valid remedial option and have the potential to exacerbate existing leachate impacts given the current site conditions.

The purpose of the proposed 150m strip of property the Region intends to acquire immediately north of the site remains unclear if not contradictory. At our March 15, 2007 meeting I had asked if the Region would either pursue the designation of this area as a Contaminant Attenuation Zone (CAZ) or if the lands would be used for other remedial measures (i.e. leachate collection). The March 27, 2007 CRA letter states that the land acquisition would be in accordance with an unnamed MOE policy and the property would be for contingency purposes. While two new wells to the northeast of the site are proposed in the SOR, these are well within the proposed 150m buffer. Later in the same letter, CRA also states that the leachate collection system would not include the entire northern boundary of the wastes since there is insufficient space between the wastes and property boundary (presumably excluding the 150m acquired property) and that completion of the leachate collection system along the northern limits of the wastes "contradicts the requirements of the Order". The RAP, SOR and response provided from the Region fail to provide any satisfactory justification of the proposed property acquisition and not provided any plan to address the existing off-site leachate impacts to groundwater or prevent future impacts off-site.

I would like to meet with you and your staff at your earliest convenience to discuss the timing and implementation of the remedial measures, the availability of the 2006 annual monitoring report, and the Region's plans to ensure effective communication regarding the site to the public and interested stakeholders.

If you have any further questions or to schedule a meeting, please contact me at (905) 427-5624 or electronically at [Andrea.J.Brown@Ontario.ca](mailto:Andrea.J.Brown@Ontario.ca)

Yours truly



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