Humberstone Landfill Site
Public Liaison Committee (PLC)

Notes of Meeting
Wednesday, April 9, 2008 - 7:00 p.m.
Civic Square, Welland, Community Room

Present:	Mike Dickman	Chair
	Randy Daly	Town of Pelham
	Connie Zalwasky	Welland
	Silvio Mucciarelli	Niagara Region
	Jamie Kristjanson	Niagara Region
	Susan Archer (Recorder)	Niagara Region

Regrets: Jim Larouche, Gus Marcello, Cindy Forster, Jay Mitchell

1. **Acceptance of Agenda**

> Motion: That the agenda be accepted.
> Moved by: Randy Daly
> Seconded By: Connie Zalwasky
>
> CARRIED

2. Draft Notes of Previous Meeting of February 20, 2008

> Motion: That notes of the February 20, 2008 meeting be approved.
> Moved by: Randy Daly
> Seconded By: Connie Zalwasky
>
> CARRIED

3. Business Arising from Previous Notes

   a) Silvio Mucciarelli presented a draft newsletter to the PLC members at the February 20 meeting asking the members to provide their comments. Silvio will now distribute the newsletter to residents living near the landfill site.

   b) Silvio also distributed a one page outline of the 2007 PLC Activity Report for comments by committee members. Silvio will now forward the report to Regional Council as an attachment to the April 19th meeting notes.

   c) Jamie Kristjanson made a presentation to the Welland River Keepers regarding the low level of PCB's in the Brown Tap Drain.

4. Review of 2006 Monitoring Report (by Wilf Ruland)

Mr. Wilf Ruland was retained by the PLC to review and comment on the 2006 Groundwater and Surface Water Monitoring Report. On April 3, 2008, W. Ruland had submitted in writing his comments to the Chair and members. A copy of W. Ruland's letter of April 3, 2008 is attached to these notes.

The highlights of W. Ruland's comments and recommendations are:

Hydrogeology and Landfill Leachate

Leachate quality is typical for similar-sized landfill sites in Ontario.

There is some leachate mounding occurring, but leachate seeps have become rare since installation of the perimeter leachate collection system in 1997/1998.

The landfill poses no threat to the Basal Aquifer as the clay soils are relatively tight. Any environmental monitoring should focus on the surface water flow system.

The approved final contours for the landfill are flatter than most other landfills in Ontario. A steeper surface of the landfill is preferable for shedding rainwater to reduce infiltration and the volume of leachate.

Recommendation #1

- Develop a "short list" of leachate indicator parameters that includes, but is not limited to chloride, potassium and alkalinity.
- Test the leachate for boron to identify if it is a useful leachate indicator.

Recommendation #2

- Develop a "short list" of critical contaminants for surface water that includes, but is not limited to cobalt, zinc and cresols.
- Test all surface water locations for PAHs (Polynuclear Aromatic Hydrocarbons) annually.
- Reduce the leachate testing for pesticides and herbicides from monthly to annually.

Groundwater Monitoring Results

The Humberstone Landfill Site is underlain by about 30 metres of clay. Groundwater movement is limited to the fractured zone which extends to depths of up to 6 metres.

The most significant area of groundwater impacts is near the PCB Containment Cell. However, the impacts are not from the PCB Cell but from historic refuse buried in this area.

The southwest corner of the landfill property is the most vulnerable to outward movement of leachate into the shallow groundwater. This is where both the leachate collection system and the surface water ditches are at their shallowest. The existing wells are too deep into the clay. There is a lack of groundwater monitoring wells both in number and in shallow depth in this area.

Recommendation #3

- The southwest corner of the site should be an immediate focus of further shallow groundwater monitoring.
- New shallow monitoring wells should be installed in this area using techniques to minimize the smearing of clay so that the fractures in the clay stay open.
- The new wells should be included in the regular groundwater monitoring program and sampled at least twice in 2008.

Recommendation #4

- Carry out field investigations to determine if groundwater in the northeast corner of the site is seeping out of the bank of the Brown Tap Drain.

Surface Water Monitoring Results

Surface water drainage from the landfill is conveyed in a perimeter ditch system to 4 major stormwater detention ponds. The pond water is only released to the Brown Tap Drain if discharge criteria are met.

Pond water quality is generally quite good, and the water quality results attest to a reasonably well run landfill with few leachate seepage issues. The possible exception is Pond 3 (which has the highest levels of indicator parameters and critical contaminants). It is worth checking upstream of Pond 3 to see if there are any issues pertaining to exposed waste or leachate seeps which need correcting.

There is no clear sign of any landfill impacts on downstream surface water quality.

Recommendation #5

- The discharge criteria for the landfill storm ponds should be reviewed by Niagara Region and the Ministry of the Environment, with a view to tightening the existing criteria where appropriate and also to adding criteria for the landfill's critical contaminants (cobalt, zinc, and cresols).

Recommendation #6

- Off-site surface water should be tested at least once per year at a time that the landfill ponds are being discharged. At that time PAHs should be tested at all ponds and off-site surface water monitoring locations.
- Station SW10, which monitors storm water discharge from George Street, could be dropped from the program.

- Consideration could be given to shifting to bimonthly or quarterly monitoring for off-site stations.

The Brown Tap Drain is a man-made, urban surface water channel whose water quality reflects the residential, commercial, industrial, railway, and agricultural land uses of its watershed. There is evidence of some degradation of surface water quality due to other sources, but little evidence that the landfill is the cause of any significant impacts at this time.

Discussion on Wilf Ruland's Presentation

Mike Dickman commented that the leachate collection system does not extend around the PCB Containment Cell and asked if it should be extended around the cell. Wilf Ruland indicated that it is not an issue as the integrity of the PCB Cell is maintained.

A question was asked as to what would be a source of boron in the leachate. Wilf Ruland said that asbestos from construction/ demolition waste is one source for boron.

There was some discussion on the depth of the water table and the depth of the fractures. Wilf Ruland indicated that historically the fractures may have gone down to a depth of 4 m to 6 m, but now may be deeper than 6 m due to the effects of climate change. This will mean that the groundwater table may be deeper than it was 20 - 30 years ago and could mean that the water table is deeper at 8 m to 10 m below ground.

There was some discussion as to how to install monitoring wells so that the fractures stay open, as the normal drilling process using augers smears the fractures closed. Jamie Kristjanson commented that there are drilling methods that do not rotate augers, but push into the ground and thus keep the fractures open. Wilf Ruland commented that the drilling should be done in the dry season to reduce the likelihood that that the clay will smear.

Jamie Kristjanson commented that the pond discharge trigger levels are approved by the MOE, and although Wilf Ruland has recommended that the trigger levels be revised, Niagara Region would require an amendment to the Certificate of Approval to change the trigger levels. Jamie also indicated that the trigger level for iron has recently been exceeded in the stormwater ponds, but only because ponds were recently excavated and have little or no vegetation. The iron is coming from the disturbed clay. Wilf Ruland agreed.

Mike Dickman commented that the PLC should consider sending an endorsement of Wilf Ruland's comments to Niagara Region.

Mike Dickman thanked Wilf Ruland for his very thorough comprehensive review.

Jamie Kristjanson has forwarded Wilf Ruland's comments and recommendations to Conestoga Rovers & Associates (CRA) for their response. Any response from

CRA will be passed on to Wilf Ruland who will then have an opportunity to review CRA's comments and provide additional comments to the PLC.

PLC members agreed that the review is an additional cost to the original work plan and authorized Wilf Ruland to undertake the additional work.

5. Correspondence for Information
   The following correspondence was received:
   i. Letter dated April 3, 2008 from Wilf Ruland to Humberstone PLC

6. Other Business
   i. PLC members were invited to attend the Battery Recycling Launch at the Humberstone Landfill Site on Thursday, April 24, 2008 at 2:00 pm.

   ii. Wilf Ruland noted that he had walked the woodlot north of the landfill and noted that a thin strip of the woodlot is dying. He explained the tree mortality in the woodlot is due to natural causes. One effect may be that the construction of the surface water ditch on the north side may have depressed the water table. There was also some damage from Dutch Elm disease. The natural system will adjust to those trees that can survive in a drier area. A question was asked as to who owns the woodlot property. Jamie Kristjanson said that the property is owned by the City of Welland.

Adjournment

Motion: To Adjourn at : 9:12 p.m.
Moved by: Connie Zalwasky
Seconded by: Randy Daly

CARRIED