

## **WASTE MANAGEMENT SERVICES DIVISION**

### **PUBLIC LIAISON COMMITTEE (PLC) HUMBERSTONE LANDFILL SITE**

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Notes of a meeting of the Humberstone Landfill Site Public Liaison Committee held at Welland Waste Water Treatment Plant, 505 River Road, City of Welland, on March 10, 2010 commencing at 6:00 pm.

#### **ATTENDANCE**

Committee: Mike Dickman, Chair; Jim Larouche, Welland Councillor; Cindy Forster, Regional Councillor; Randy Daly; Jay Mitchell

Staff: Silvio Mucciarelli, Associate Director Waste Disposal Operations; Jamie Kristjanson, Program Manager Environmental Monitoring;

Guest: Tony Whelan, Welland River Keepers; Helga Goss - resident

#### **TOUR OF WELLAND WASTEWATER TREATMENT PLANT**

Bill Carrey, Wastewater Operations Manager, provided the Committee members with a tour of the Welland Wastewater Treatment Plant. The tour included a walkabout of the various process operations, with an explanation given by Mr. Carrey for each process. During and after the tour, members were given the opportunity to ask Mr. Carrey questions about the Plant's operations.

The Welland Wastewater Treatment Plant has primary and secondary treatment processes with tertiary treatment. Primary treatment consists of mechanically-raked bar screens and aerated grit channels to initially remove bulky solids, and silt/sand.

Secondary treatment consists of mechanical aeration cells, phosphorus removal using ferric chloride, and settling tanks that remove settling and floating solids. The solids removed are then treated in anaerobic digesters, where bacteria digest the organics into methane and CO<sub>2</sub>. The stabilized humus (biosolids) produced by the digestion process is removed from the facility and transported to the Garner Road Biosolids Storage Facility for further treatment in lagoons.

Tertiary treatment consists of sand and anthracite filter cells.

The Plant effluent disinfection consists of injecting sodium hypochlorite into the flow. The disinfection season is from April 1 to October 31. During the remaining part of the year the temperature is cool enough that fecal coliform and E. coli cannot survive.

During bypass, the inflow exceeding the approved conventional treatment rate of 65,000 m<sup>3</sup>/day (normal conditions) receives primary treatment, with disinfectant injected into the stream prior to discharge to the Welland River.

A member asked if the plant uses Alum to remove phosphorus. Mr. Carrey responded that ferric chloride is easier to work with and more economical.

A resident asked about the testing of the discharge effluent. Mr. Carry explained that there are effluent limits imposed by the MOE, and that the water is tested and meets the limits. A sample of the influent and effluent water is collected every 15 minutes over a 24 hour period, and these daily samples are submitted for testing, each week of the year. The MOE recently lowered the limit for residual chlorine, and a new chlorine removal facility is currently being constructed to meet the new limit (the construction of the new facility was observed during the tour).

A member asked how a protocol would work whereby landfill leachate could be held back at the Humberstone Landfill Site when the treatment Plant was on bypass. Mr. Carrey explained that when the Plant is on bypass, there is a large amount of dilution that occurs from snowmelt/rainwater. As a result, the level of contaminants and solids entering the Plant is lower than normal under bypass conditions. His thought was that it may be better to continue discharging landfill leachate to the Plant under bypass due to this higher dilution potential. Staff stated that there is a risk to turning the pumps off at the landfill. The leachate level in the manholes would have to be carefully monitored to observe the rate at which the levels rise. If a spill of leachate out of a manhole were to occur, then there could be impact to the Brown Tap Drain and the Welland River.

A resident asked about the normal length of time for a bypass event. Mr. Carrey responded that it is normally a day or two, but it can last up to a week during snowmelt/prolonged heavy rain conditions.

A resident asked if Niagara Region has considered constructing a holding tank at the landfill site so leachate does not backup in the LCS and create a spill. Staff explained that holding tanks have been constructed in Niagara Region by Water & Wastewater Services to detain sewage from Combined Sewer Overflows (CSOs). This is where there is an overflow connection from a sanitary sewer into a storm sewer. When the plant is on bypass, water is directed into the holding tank, and when the plant switches back to normal operations, the water in the holding tank is drained back into the sanitary sewer. This has not been contemplated for the Humberstone Landfill Site.

The Plant has an approved conventional treatment rate of 65,000 m<sup>3</sup>/day (normal conditions), with physical treatment up to 118,000 m<sup>3</sup>/day maximum capacity. Staff indicated that the Humberstone landfill leachate volume is about 150,000 m<sup>3</sup>/year which is equivalent to a few days of plant capacity.

A member asked how the Plant treats heavy metals, specifically high levels of nickel.

Mr. Carrey explained that metals generally settle out into the biosolids. Staff stated that the levels of nickel in the Humberstone landfill leachate are low and mostly below the MOE surface water quality criterion. The leachate test results show that the levels of heavy metals in the landfill leachate are low, except for iron.

The following questions were provided to staff just prior to the meeting by the PLC:

- 1) How effective is the Welland Wastewater Treatment Plant in removing harmful chemicals from its receiving water? Can you provide information on BOD, Suspended Solids, total Nitrogen and total Phosphorous?
- 2) What techniques are used at the Welland Wastewater Treatment Plant to improve wastewater effluent quality? What percentage of BOD and heavy metals and nutrient reduction are routinely accomplished?
- 3) What is the average period of time that the Humberstone Landfill would need to retain its leachate to avoid discharging it during a period when the Welland Wastewater Treatment Plant was bypassing wastewater to the Welland River? What method of communication might be adopted by the Humberstone Landfill to stop discharging its leachate during periods of overflow?

Staff will provide information on these questions at the next meeting.

### **ACCEPTANCE OF AGENDA**

Meeting proceeded with the agenda as presented.

### **APPROVAL OF PREVIOUS MINUTES**

Notes of December 2, 2009 were accepted.

### **BUSINESS ARISING FROM PREVIOUS NOTES**

There was no business items brought forward from previous notes.

### **NOTICE FOR NEW MEMBERSHIP**

Staff indicated that an advertisement was placed in the Welland Tribune inviting residents to become members of the PLC. No responses have been received from the public expressing interest in membership. Helga Goss attended the meeting expressing an interest in joining the PLC.

**HYDROGEOLOGIC PEER REVIEW SERVICES**

Wilf Ruland's work plan for 2010 was submitted to the committee. Discussion took place and the members thought that Mr. Ruland had provided good comments on past landfill monitoring reports.

Motion: Members recommended approval of Wilf Ruland's 2010 work plan for hydrogeologic peer review services, in the amount of \$5,000 plus taxes.

Moved by C Forster

Seconded by J. LaRouche

Carried

**OTHER BUSINESS**

No items were brought forward.

**ADJOURNMENT**

Meeting adjourned at 7:20 pm.