



**Highland Creek Treatment Plant
Neighbourhood Liaison Committee
(HCTP NLC)
Meeting # 25
Monday, November 12, 2012
Highland Creek Treatment Plant Meeting Room
51 Beechgrove Drive
7:00 p.m.**

FINAL SUMMARY NOTES

Attendees:

Frank Moir, NLC Co-Chair
Ron Wootton, Ward 43 & 44
Elliotte Boyko
Barbara McElgunn
Allen Elias
K. Fawthrop
Paul Lewkowicz
Victoria Schei, Ward 44
Per Inge Schei, Ward 44
Tom Jones
Bruce Smith, Ward 44
Betty Smith, Ward 44
Karen Buck
Desmond Vandenberg

City of Toronto

Frank Quarisa	Director, Wastewater Treatment
Martin Shigeishi	Acting Manager of Highland Creek Treatment Plant
Anthony Pigaidoulis	Senior Engineer, Highland Creek Treatment Plant
Ying Zheng	EH&S Field Representative, Toronto Water
Nancy Martins	City of Toronto Public Consultation Unit
Antonette Dinovo	Councilor Ainslie's Office, Ward 43

1. Welcome and Introductions

Frank Moir called the meeting to order at 7:00 pm. All participants introduced themselves.

2. Review of Agenda, Summary Notes, Action Items

- **Review of Agenda**

The agenda was approved.

- **April 23, 2012 Summary Notes**

The summary notes from April 23, 2012 were accepted.

- **April 23, 2012 Action Items:**

- *Martin Shigeishi will put an overlay of an aerial photograph onto the map showing odour intensity for the next meeting.*

Martin Shigeishi said that he would provide this map during Plant Updates.

- *Martin Shigeishi will include the chart on stack emissions testing with minutes.*

The chart was attached to the minutes from the April 23, 2012 meeting.

- *Nancy Martins and Frank Moir to revise the Neighbourhood Liaison Committee Terms of Reference.*

Nancy Martins will provide this information at the end of the meeting.

- *Frank Quarisa to look at executive summary in the reports produced by CRA and distribute to the NLC if the information in the summary is suitable for public distribution, and if not he will consolidate and summarize for distribution.*

Frank Quarisa reported that executive summary of the annual Conestoga-Rovers & Association report does not say very much, however the body delves into identifying specific fields used for biosolids land application. The City has a contract with two service providers that work directly with the farmers to do the agricultural land application and it is not up to the City to divulge the details of that information. The 2010/2011 report lists the geographic location of the fields, how much was applied and information with respect to the C of A of individual fields. The report also states that as of 2012, if a field has an existing C of A, land application can continue as long as the 5-year limits are not exceeded. New fields will fall under new regulations and require a Nutrient Management Plan instead of a field specific C of A. **Frank Quarisa** added that a more useful document is the annual Ashbridges Bay Biosolids Report, which summarizes the programs that have been implemented over the past year including land application, pelletization and landfilling. He distributed copies of the report from March 22, 2012 (also available at <http://www.toronto.ca/legdocs/mmis/2012/pw/bgrd/backgroundfile-46242.pdf>)

Frank Moir asked which companies do land application for the City and where. **Frank Quarisa** said that the two service providers responsible for the biosolids

agricultural land application are Third High Farms who apply biosolids on agricultural fields in eastern Ontario and Terratec who apply biosolids on agricultural fields in southwestern Ontario. Under contract with the City of Toronto, CRA consultants do the inspection of both service providers. Since the City does not contract with individual farmers, our consultant CRA carries out inspections for the City as part of the City's due diligence.

Allen Elias asked about how frequently biosolids were applied to the fields. **Frank Quarisa** explained that land application starts in the early spring and continues to late fall; most is applied in the late spring/early summer and then again around mid-September. The fields that are operating under a C of A have an application rate that limits how much can be applied over 5 years.

Allen Elias asked if the groundwater is tested on the sites after land application. **Frank Quarisa** said that the CRA has a long list of criteria based on existing regulations under which one can apply biosolids to fields in terms of proximity to water, property lines, houses, etc. All regulatory requirements must be met before a farm can be a part of the land application program. Agricultural land application is regulated by OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs) who also do site inspections as the regulator. CRA performs due diligence inspections on the City's behalf.

Frank Moir asked how the rules for biosolids land application would change over the next year. **Frank Quarisa** explained that as of this year (2012), the C of A will start to be phased out and farmers will now have to have a Nutrient Management Plan. The regulatory responsibility has been transferred from the MOE to OMAFRA.

Allan Elias inquired as to who would determine if any wells or groundwater get contaminated due to biosolids land application. **Frank Quarisa** explained that the Nutrient Management Act was introduced in 2002/2003 with strict guidelines to prevent pollution and contamination. Land application is regulated under the Nutrient Management Act. Land application contractors and farmers are fully regulated. If regulatory requirements are not met and contamination occurs, then the parties could be charged and fines may apply. The farmers are now responsible for actively managing their land application through a Nutrient Management Plan.

Barbara McElgunn asked if there were any regulations or labeling requirements under the Nutrient Management Act for biosolids used in fertilizers sold to consumers for home use. **Frank Quarisa** said that fertilizers are governed and regulated differently. Fertilizers fall under the CFIA's (Canadian Food Inspection Agency) Federal Fertilizers Act. The Nutrient Management Act, regulated provincially, only governs agricultural land application of biosolids. He added that the pellets from Ashbridges Bay are regulated under the Federal Fertilizers Act

Frank Moir asked about the status of Lystek. **Frank Quarisa** replied that the City

entered into a contract with Lystek in early 2012. Their proposal was given in the fall of 2011 and is subject to the processing facility being constructed. The facility in Dundalk is still under development and they will only be given biosolids materials once the facility is complete and all the permits and approvals are in place. The City's contract with Lystek is for 3 years and will simply expire if Lystek is unable to commence taking material during this period.

3. Next Steps in Biosolids management at the HCTP

Frank Quarisa reported on the status of the Biosolids Master Plan. He said that in the late spring of 2012, the City embarked on a process to update the Biosolids Master Plan and had hoped to complete it over the summer. The City consulted with the MOE (Ministry of the Environment) on how to best deal with certain format issues and how to complete the Biosolids Master Plan. The conclusion reached is that the most appropriate approach is to close out the Biosolids Master Plan with all the additional information produced for Council and the last Public Meeting. The City would then commence a new Schedule "B" Class EA for Highland Creek only. **Frank Quarisa** distributed copies of a Staff Report to Public Works and Infrastructure Committee describing the approach being taken. (Also available at <http://www.toronto.ca/legdocs/mmis/2012/pw/bgrd/backgroundfile-51710.pdf>)

Frank Quarisa explained that the intention had been to work with the MOE to add an addendum or an appendix to the Biosolids Master Plan over the summer of 2012. There were some logistics issues with how to format the document since the original plan is a massive document covering all the Wastewater Plants – assembled over more than nine year- which is not specific to the issues of Highland Creek Treatment Plant. Given the current context of Highland Creek Treatment Plant, it would make sense to isolate the plant and carry out a Schedule "B" Class Environmental Assessment (EA), in order to focus on a Highland Creek specific EA document and solution. This is expected to take a minimum of 8 to 12 months to complete once a Consultant has been retained. A Request for Proposals document is now in the process of being drafted, which should be completed within the next month or two. Toronto Water would like to have a consultant on board by early 2013 to work on this EA. The budget is estimated at half a million dollars.

Conceptual Design:

Frank Quarisa said that in the spring of 2012, there were some questions regarding how the truck loading facility was going to be integrated into the plant. CH2M Hill did the conceptual design for the truck loading facility and recently completed a draft report. The report lists the cost for a truck loading facility, one additional digester and a primary sludge thickening facility at around 151.7 million dollars. Comparatively, one fluidized bed incinerator would be around 71.8 million. Both of these estimates are in 2016 dollars- which is the mid-point of

when construction would take place.

Barbara McElgunn asked if the estimates included operating costs. **Frank Quarisa** replied that the estimates are just for engineering, supply of equipment and construction.

Frank Moir said that he was pleased with these conclusions. He asked if the CH2M Hill report would be available to the NLC. **Frank Quarisa** said that once the document is finalized, it will be part of the EA project file and will be made public.

Ron Wootton asked if there would be enough room on the site to put in a new fluidized bed incinerator and keep the two existing incinerators open. **Frank Quarisa** said that there is room for three incinerators in the current incinerator building and the new one would be built in the space where a third incinerator was going to be constructed in the early 1990s - but never was. The details of how a new incinerator might be constructed would be considered during the EA process.

Frank Quarisa said that the Staff Report just distributed would go to The Public Works and Infrastructure Committee for information on Wednesday November 14th. He added that, as usual, there would be an opportunity for deputations; once it passes Public Works it is assumed it would go to City Council. **Allen Elias** asked if it would be possible for Public Works to vote it down. **Frank Quarisa** said that the recommendation in the Staff Report is to receive the information and so there is nothing to be voted down; it is a recommendation to receive, and he has never seen a recommendation to receive information not be accepted.

Barbara McElgunn pointed out that the recommended approach is backed by the MOE and Council would not be able to override the MOE.

Paul Lewkowicz asked if there were any concerns with the EA in terms of putting in measures to ensure that refurbishment of the facility continues to address the aging infrastructure. **Frank Quarisa** explained that minor repairs done on one unit were completed last year; the stub-stack repairs are now underway; and the minor refurbishments on the other unit have been slightly delayed. All these repairs, and others about to be tendered in the new year, will extend the useful life of the facility and provide an extra 10 years.

Karen Buck asked if the new digester would be a mesophilic digester. **Frank Quarisa** replied that yes, the digester would be the same as what is currently in place. There are a few options in terms of the details, but there will be at least one additional digester under the truck loading option.

Paul Lewkowicz inquired about the kind of public consultation that will take place with the new EA, to address the concerns of the community. **Frank**

Quarisa replied that there will be at least one public meeting before finalizing the report. For guidance, Consultants will be given the existing Biosolids Master Plan and the project plan that was used. The minimum requirements for a Schedule "B" EA are prescribed under the Environmental Assessment Act. More public consultation may be recommended.

Frank Moir said that the NLC would like to be informed of all the options. He asked if this would be an appropriate time to issue a newsletter to the community about the upcoming plans. **Nancy Martins** said that issuing a newsletter or a notice to the public has been discussed. Usually, this would be circulated to the entire community to advertise the public consultation component of the project. She added that updated information about the biosolids study would also be included.

Allen Elias asked if the "preferred solution" would be implemented after the EA process is complete and input has been received from various sources. **Frank Quarisa** clarified that this is the desired outcome of all EAs and the prescribed process must be followed.

Karen Buck stated that it is very important that Toronto Public Health be involved in the process, to make sure the community's health is considered and protected. **Frank Quarisa** said that Toronto Public Health would definitely be included as a stakeholders. **Barbara McElgunn** added that it is also important to have the Medical Officer of Health involved with the EA.

4. Sewer Use By-Law

- Presentation by Vijay Ratnaparkhe, Environmental Monitoring and Protection

Vijay Ratnaparkhe gave a PowerPoint presentation on the Sewer Use By-Law compliance and monitoring. (Available at http://www.toronto.ca/wes/techservices/involved/wws/highnlc/pdf/2012-11-12_presentation.pdf)

Allen Elias asked how excess pollutants were dealt with when an industry exceeds the discharge limits. **Frank Quarisa** explained that once these pollutants are blended in with the rest of the sewage, if it is not normally observable at the plant. The industry responsible for the extra discharge is basically using a larger share of the plant's capacity and is therefore charged for their extra use. **Allen Elias** asked if there was theoretically any potential health impact caused by the extra discharge. **Frank Quarisa** replied that the plant is capable of removing these solids.

Barbara McElgunn asked about regulated substances like styrene and tetrachlorobenzene. **Vijay Ratnaparkhe** explained that there are two parts to the substances being monitored: (1) the hazardous substances (that cannot be

treated at the plant), which are reduced at source by monitoring the industry and enforcing the bylaw through fines and prosecution. (2) Non-toxic substances (that can be treated at the plant), which are controlled by discharge limits, so that the plants do not become overloaded.

Karen Buck asked if all of the City's sewage outfalls were monitored every year. **Vijay Ratnaparkhe** replied that they were not, because there are approximately 5000 outfalls in the city. However, priority outfalls are monitored continuously; once something is measured during routine monitoring, the outfall will become a priority and it is monitored more regularly. **Frank Moir** asked how many outfalls were considered priority outfalls. **Vijay Ratnaparkhe** replied that there were about 60.

Karen Buck asked about how Mercury got into the stub stacks, which is found whenever the stacks are tested. **Vijay Ratnaparkhe** replied that the primary source of Mercury in sewage is from dental offices (dental fillings) and there are regulations in place to keep this level down.

Barbara McElgunn said that the MPRI website lists chemicals that must be reported, including 5 chemicals that are from Tier 1 and considered toxic. The reporting is mostly for air releases. She wondered if any reporting was required for sewage. **Vijay Ratnaparkhe** replied that the City's list of 38 substances from Tier 1 and Tier 2 (as well as biosolids) is monitored. **Barbara McElgunn** asked how the sewage was sampled. **Vijay Ratnaparkhe** explained that the maintenance access holes (manholes) are opened at connection points to test the discharge.

Karen Buck pointed out that the Ashbridges Bay Treatment Plant Neighbourhood Liaison Committee and the ICMC asked for 24 more sewage inspectors a few years ago and the City has finally got them. She added that there is ongoing work with respect to developing stricter sewer use bylaws, especially regarding hexavalent chromium. **Vijay Ratnaparkhe** explained that there are two types of chromium and the more toxic of the two (hexavalent chromium) is part of a new amendment that will be added to the sewer use bylaw.

5. Plant Updates

In response to Action Item #1 from the previous meeting, **Martin Shigeishi** presented a map of the area around the Highland Creek Treatment Plant with an overlay of odour contour lines. He said that he would include a copy of the map with the minutes. He explained that the map is a model of an approximation of the anticipated odour contour lines, post-implementation of the upgrades to the plant.

Frank Moir asked about why the map showed 5 odour units around the plant when the original plan was to try to get down to 1 odour unit. **Martin Shigeishi**

explained that the lines are only an approximation of what is anticipated. The odour units themselves are highly subjective.

Incinerator Ash issue:

Martin Shigeishi reported that there were some concerns from the community about the ash haulage procedure. He explained that once a year, ash from the lagoons has to be cleaned and is hauled out to Green Lane Landfill. The whole process lasts about two to three weeks and is usually done in the late summer or early fall. The community's concern was that the ash being hauled off the site was getting stuck to the truck tires and left along the roads. **Martin Shigeishi** showed some photographs the community had passed along of the ash pile and the roads on which some ash had fallen off tires. The ash is part of the incineration process and the plant is committed to doing a better job at minimizing the amount that gets tracked off of the Highland Creek property. Toronto Water has drafted a new procedure that will change how the ash is loaded into the haulage trucks and how the trucks are cleaned. They are also looking into having a portable wash unit to spray down the wheels of the vehicles. He added that the ash material is not toxic; it passed the Toxicity Characteristic Leaching Procedure (TCLP) test and the results showed that tested parameters were below Leachate Quality Criteria as defined in O.Reg 347.

Barbara McElgunn asked if there were any metals in the ash. **Martin Shigeishi** replied that there were, at very low levels. **Ron Wootton** asked if the NLC could see a copy of the toxicity test report for the ash material. **Martin Shigeishi** said that he would provide a copy of the report to attach to the minutes from the meeting.

Martin Shigeishi explained that prior to being hauled off site, the ash is accumulated in an open lagoon. **Ron Wootton** asked if there was any possibility of the ash drying out and blowing away with the wind. **Martin Shigeishi** said that the ash is kept wet to prevent it from blowing away and then drained before transport. The time during which the ash is dry is kept to a minimum.

Ron Wootton pointed out that the ash pile is located close to a public walkway. He suggested closing the walkway during the 2 or 3 weeks when it is being excavated and hauled off. **Martin Shigeishi** said that they could consider doing that but didn't think it was necessary. **Frank Quarisa** said that the ash material never completely dries out and does not get blown away. He added that the material is not toxic and the metals in the ash are mostly iron.

- Incinerator Repair

Martin Shigeishi reported that the detailed design for the minor repairs to the 2nd incinerator is 95% complete and the application for permits is underway. It is expected to be tendered during the 1st quarter of 2013.

- Stub Stack Repair

Martin Shigeishi reported that incinerator #2 is now out of service as part of the contract to install the new stub stack and cap damper. The schedule was pushed back due to the complexity of designing the cap. The project has now started and the stack cap system will be tested at the end of January 2013. If the project stays on schedule, #2 incinerator will be in service and incinerator #1 will be taken out in March 2013. There will be no leakage from the stub stacks.

- New Headworks and Odour Control Project

Martin Shigeishi reported that the detailed design for the headhouse is progressing and is about 95% complete. It is expected to go to tender in the 2nd quarter of 2013.

- Thickened Waste Activated Sludge Project

Martin Shigeishi reported that construction is ongoing and is now about 50% complete.

- Review Odour Complaints

Martin Shigeishi reported that there has been one formal odour complaint for 2012. The complaint was made on May 14th and was due to failure of a primary clarifier.

- Power Interruptions and Impact on Incineration

Martin Shigeishi reported that there have been eight power outages in 2012, which caused stub stack spills and the emergency bypass damper had to be used. In 2011 there were seventeen of these types of incidents.

- Bypass events reported to MOE

Martin Shigeishi reported that as of November 11th 2012, there has been no sewage bypass events reported to the MOE.

- Stack Emissions Testing

Anthony Pigaidoulis explained that a new contract is being awarded for testing of the incinerator stack emissions in December 2012. They will test incinerator #1, which is currently the only furnace in operation. In response to a question from Barbara McElgunn about particulate matter and the Canadian Council of Ministers of the Environment (CCME) guidelines, **Anthony Pigaidoulis** explained that the CCME has come out with new, more stringent Canadian Ambient Air Quality Standards (CAAQS) for particulate matter (2.5 micron) and

ozone. He said that these are ambient guidelines and are not specifically related to the plant's point source emissions limits. The CAAQS are standards that were developed using a risk-based method that looks at different air sheds and identifies specific parameters and their concentrations. He explained that Highland Creek voluntarily tests for point of impingement concentrations, and the last time these tests were done, the plant was at 1.4% of the standard for suspended particulate matter, which is 100 micrograms per cubic meter according to Ontario Regulation 419 for local air quality.

Barbara McElgunn asked if the stacks were tested for particulates. **Anthony Pigaidoulis** said yes; suspended particulate matter is periodically tested. He added that they conduct a particle size distribution.

Anthony Pigaidoulis explained that testing for dioxins, furans and mercury would be done on the furnace that is currently in operation in December, according to the regulated Canada-Wide Standards (CWS). The results of this test should be available by the next NLC meeting.

6. Other Business

Nancy Martins distributed copies of the Terms of Reference for the NLC. She explained that the first Terms of Reference were established when the Highland Creek NLC was formed in 1997. Some of the language and terms used in the document have now been updated. She asked the members of the NLC to take a look at the updated Terms of Reference and discuss any concerns at the next meeting. She added that the purpose of the NLC is for City staff to bring forward issues and communicate with the community, as well as to listen to any concerns with respect to the plant's operations and its impacts on the community.

7. Next Meeting Agenda items, Adjourn

The meeting was adjourned at 8:50 pm.

Highland Creek Treatment Plant Neighbourhood Liaison Committee Terms of Reference

The Highland Creek Treatment Plant (HCTP) Neighbourhood Liaison Committee (NLC) has been established to provide a forum for the City to communicate with and hear from members of the community and businesses surrounding the HCTP. The NLC helps the City ensure that impacts of the plant on the surrounding community are minimized.

1. Mandate

The mandate of the HCTP NLC is to:

To provide a forum through which and City and the community surrounding the facility are able to communicate regarding plant issues of mutual concern.

2. Membership

Membership on the NLC is open to residents and representatives of businesses surrounding the HCTP and other City of Toronto residents interested in the facility.

3. Administration

- Meetings of the NLC will be Co-Chaired by a community member of the committee and a City of Toronto staff member. The Community Co-Chair will lead meetings. In their absence, the City of Toronto Co-Chair will chair the meeting. The Co-Chairs will work together to coordinate agendas and other NLC activities.
- City of Toronto staff will facilitate meetings of the NLC and provide information updates as needed.
- A minute taker, provided by the City of Toronto, will be present at each meeting.
- Both the City and NLC members can suggest items for the next agenda during NLC meetings, or by contacting the Co-Chair.
- City staff will distribute agendas and minutes to NLC members.
- The NLC will normally meet twice per year, or on an as needed basis. Co-chairs will decide on an appropriate schedule.

4. Additional Community Involvement

To keep the local community informed of HCTP issues and the progress of the NLC, a newsletter may periodically be issued.

5. Committee Reporting

- Input from the NLC will be provided to the Director, Wastewater Management through meeting minutes and by City of Toronto staff.
- City of Toronto staff will provide information and updates to the NLC on plant issues of concern to the community and HCTP related undertakings.

6. Code of Conduct

The purpose of the Code of Conduct is to ensure that Highland Creek Treatment Plant (HCTP) Neighbourhood Liaison Committee (NLC) meetings are conducted in an orderly fashion and to ensure that everyone has an opportunity to participate fairly.

NLC participants (both committee members and City of Toronto staff) shall uphold the following code of conduct during the meeting:

- Be courteous
- Listen to others
- Respect the opinions of others even if they are controversial
- Wait your turn. One person speaks at a time.
- Speak through the Co-Chair
- Back up your facts
- When the meeting is underway, take private discussions outside

If a participant disrupts the meeting, the Chair will give the individual one warning and on any subsequent occurrence, the Chair will ask that person to leave the meeting.

7. Community Co-Chair Appointment Process

- A notice will be sent out to those who have attended a meeting in the previous two years to inform of a call for nominations for Community Co-Chair.
- Committee members may volunteer themselves or nominate another member.
- Nominated or volunteering members must be able to fulfill the "Roles and Responsibilities" in the section below, with integrity.
- Those nominated or volunteering will be asked to make a statement to the committee presenting their interest and involvement in the HCTP community.
- A vote of committee members who have attended meetings in the previous two years will be taken at the NLC meeting. NLC members must be present at the meeting to hear the statement from the nominated members, and to vote for the co-chair.

8. Roles and Responsibilities of the Co-Chair

The Chairperson plays a key role in contributing to a successful meeting. As Chair, that person will work with City of Toronto staff to prepare agendas for the meeting and review the minutes of meetings prior to their distribution. When chairing a meeting:

- Welcome all participants.
- Before the meeting, ensure that you have a clear understanding of the objectives.
- Assign the floor to a committee member who wishes to speak on the agenda topic and see that no one person dominates the discussion.
- Steer discussion away from opinions whenever facts are available. Call on staff to provide clarification on matters of discussion.
- Ensure that all sides of an issue are fully and fairly stated.
- Remain neutral, unless otherwise stated.
- Encourage full participation and balanced contributions by all Highland Creek Treatment Plant Neighbourhood Liaison Committee members.
- Provide a summary of the conclusions reached following discussion.
- Identify points of consensus to document in the minutes
- Move the meeting agenda forward in a timely manner.

9. Roles and Responsibilities of Committee Members

- Come prepared by reading the agenda and reports beforehand and bring them to the meeting.
- Focus on the meeting topics being discussed
- Listen carefully to all ideas. Respect the opinions of others. This does not mean you must agree with each other but simply respect each other's rights to be there and to hold different opinions.
- Ask questions if a statement is unclear.
- Participate fully in discussions but do not dominate or allow others to do so. There should only be one speaker at a time.
- Avoid being defensive if your ideas are criticized.
- Members should inform the chairperson in advance if leaving early, or if they know they will be late.



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Attn.: David L. Whiston

F.E. Job #: 12-4295
Project Name:
Project ID: N/A
Date Sampled: 4-Jul-12
Date Received: 4-Jul-12
Date Reported: 12-Jul-12
Location: 51 Beechgrove Drive
 Toronto, ON

Certificate of Analysis

Analysis Requested:	TCLP
Sample Description:	1 Soil Sample

Parameter	12-4295				Leachate Quality Criteria ¹
	North Lagoon Ash				
Reg. 558 Inorganic Package					
Mercury	<0.01				0.1
Arsenic	<0.1				2.5
Barium	0.34				100
Boron	2.67				500
Cadmium	<0.1				0.5
Chromium	<0.1				5
Lead	<0.1				5
Selenium	<0.1				1
Silver	<0.1				5
Anions					
Fluoride	0.83				150
Nitrate & Nitrite	10.37				1000
Cyanide	<0.1				20
Volatile Organic Compounds (VOCs)					
Benzene	<0.05				0.5
PCBs					
Total PCBs	<0.3				0.3

¹TCLP Ontario Regulation 558/00 (Toxicity Characteristic Leaching Procedure, amendment to Ontario Regulation 347- Waste Management) under the Ontario Environmental Protection Act, March 31,2001.

< result obtained was below MDL (Method Detection Limit).

QA/QC Report

Parameter	Blank	MDL	QC Sample	AR	Duplicate	AR
	(ppm)		Recovery (%)		RPD (%)	
Reg. 558 Inorganic Package						
Mercury	<0.01	0.01	108	75-125	0.0	0-20
Arsenic	<0.1	0.1	99	33-167	0.0	0-20
Barium	<0.1	0.1	101	69-131	0.6	0-20
Boron	<0.1	0.1	94	80-120	8.1	0-20
Cadmium	<0.1	0.1	100	75-125	0.0	0-20
Chromium	<0.1	0.1	100	41-159	0.0	0-20
Lead	<0.1	0.1	100	54-146	0.0	0-20
Selenium	<0.1	0.1	99	75-125	0.0	0-20
Silver	<0.1	0.1	104	80-120	0.0	0-20
Anions						
Fluoride	<0.1	0.1	101	80-120	0.7	0-20
Nitrate & Nitrite	<0.03	0.03	119	80-120	3.6	0-20
Cyanide	<0.1	<0.1	105	80-120	0.0	0-20
Volatile Organic Compounds (VOCs)						
Benzene	<0.05	0.05	109	70-130	3.0	0-20
PCBs						
Total PCBs	<0.02	0.02	93	60-140	0.0	0-20

LEGEND:

< result obtained was below MDL (Method Detection Limit).
 nd - Not Detected or less than Method Detection Limit (<MDL);
 AR - Acceptable Range obtained from historical data.
 RPD - Relative Percent Difference.

ANALYTICAL METHODS:

All work had been done in accordance with normal professional standard using the following Fisher Environmental Lab Methods: Metals by ICP #F-1, Rev.4.3, Mercury by CVAAS #F-2, Rev.1.4, Cyanide by Colorimetric method #F-24, Rev 2.0, Fluoride by colourmetric method #F-11, Rev.2.0, Nitrate/Nitrite by Colorimetric method #F-13, Rev.1.1, Benzene by Purge and Trap/GC-FID #F-6, Rev.4.4, PCBs by GC/ECD Perkin Elmer 8500 / 8410 #F-6, Rev. 4.4. Methods used by Fisher Environmental Lab comply with the Standard Methods for the Examination of Water and Wastewater, 20th Ed.

Authorized by: _____



Roger Lin, Ph. D., C. Chem.
Laboratory Manager

