
Attention: Josie Franch, Public Consultation Coordinator, City of Toronto

RE: Toronto Environmental Alliance's public on-line statements regarding the Highland Creek Treatment Plant Biosolids Class Environmental Assessment: Health Impact Assessment Reports

Dear Josie,

I am submitting this letter on behalf of myself, and the undersigned members of the Highland Creek Treatment Plant Neighbourhood Liaison Committee.

Introduction

Environmental organizations strive to provide accurate information to their membership, to City councillors, the press and the public. We understand that the Toronto Environmental Alliance (TEA) has opposed incineration in any form for many years, and has the right to defend that position with balanced factual evidence. However, the following statements that have appeared on TEA's website recently concerning emissions, and the results of the Highland Creek health studies prepared for the City, in our view are misleading, as they misrepresent factual evidence from the EA. This letter attempts to provide a more balanced assessment, as contained in the City reports.

On January 8th, 2016, TEA posted on its website an article entitled **“Air Pollution from Burning Sewage” (Ref. 1)**. On 12th November 2015 TEA posted an item entitled **“New health report identifies risks of burning sewage waste” (Ref. 2)**. TEA also posted a website blog post on 24th May, 2014 entitled **“Why is Scarborough’s Air Polluted?” (Ref. 3)**.

The subjects of the two most recent website items were reports produced by the City in relation to the Highland Creek Biosolids EA study; the December, namely, the **“Air Quality Impact Assessment” (AQIA) (Ref. 4)**, and the October reports approved by the Medical Officer of Health, entitled **“Health Impact Assessment of Biosolids Management Plan for Highland Creek Treatment Plant” (HIA) (Ref. 5)**, and the **“Human Health Risk Assessment” (Ref. 6)**.

Evaluation of TEA Statements

We present below a comparison between the statements made in the TEA website items, and the **EA study findings**, based on a balanced presentation of the findings of the **AQIA**, the **HIA**, the **HHRA**, and reports available from the City’s **ChemTRAC** website.

We also provide an **NLC commentary** on the issues.

TEA Statements 1:

“Now we know how incineration “stacks up” against pelletization and it is not good news.” (Ref. 1)

“TEA can now more clearly pinpoint how burning sewage pollutes Scarborough in a way that manufacturing fertilizer pellets would not.” (Ref. 1)

“The images show how air pollution travels from the sewage incinerator into your neighbourhoods and even reached local treasures like the Scarborough Bluffs, Highland Creek ravine and nearby parks.” (Ref. 1)

“Compared to the other most likely option, a biosolids pelletizer, burning sewage in an incinerator would contribute far more air pollution (greater concentrations) and impact far more communities. The maps below shows the difference in Nitrogen Oxide air pollution from the two options.” (Ref. 1)

“The greatest concentration of pollution from the pelletizer (0.25 ug/m³) is still three times lower than the concentration from the incinerator (0.75 ug/m³).” (Ref. 1)

“Among the three alternatives, modern fluidized bed incineration (Alternative 1) is anticipated to result in the highest releases of air pollutants. - Toronto Public Health (2015 Report).” (Ref. 2)

NLC Commentary:

It must be understood that the Terms of Reference for the Health Impact Assessment and the Air Quality Impact Assessment limited the study boundaries to City Wards 43 and 44 (Ref. 18). As a result no consideration was given to the air emissions from the biosolids trucks on Highway 401 to and from the final disposal sites, or from the land spreading operations.

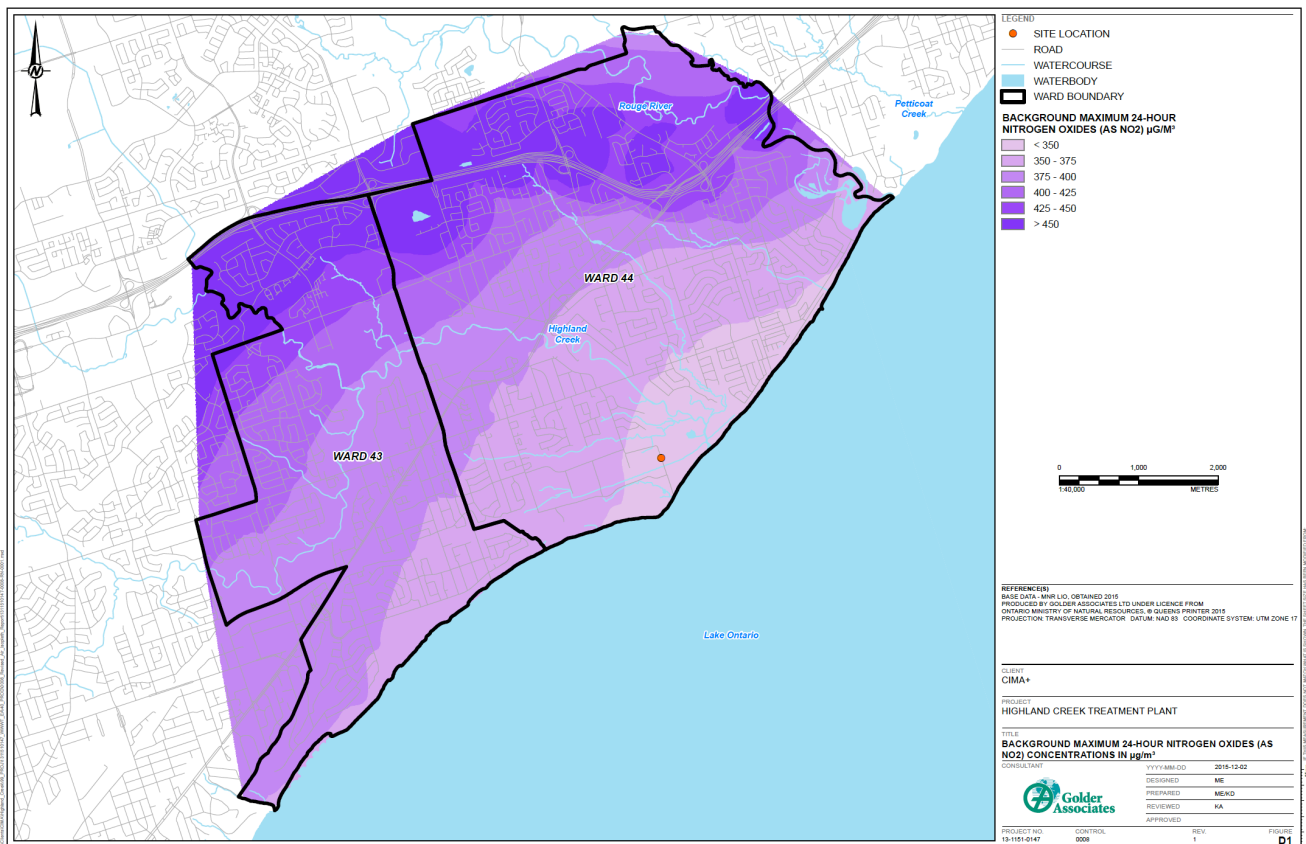
We acknowledge that the proposed new incinerator - Alternative 1 will release air emissions within the study area (Wards 43 and 44), and that there will be somewhat higher releases in Ward 44, as this is where the plant is located. However, it is really important to put these levels of emissions in context, by considering the emissions from all other sources.

Also as shown in Table 6-12 (Ref. 22) from the HHRA, the risks from emissions from a new fluidized bed incinerator on various health outcomes would be between three and four orders of magnitude lower than the risks from local background air quality.

Study Findings:

The AQIA report puts the incinerator emissions in context by including another map (Ref. 7 - AQIA - Figure D1 shown below) that TEA chose not to include in their blog post.

This map shows the maximum background 24-hour NO_x levels in Ward 43 and Ward 44. It will be noted that the lowest level of background NO_x levels is actually around the area of the plant. This is because the pollution from vehicle emissions on Highway 401 dominates the whole area, including the parks, ravines, and the Scarborough Bluffs. The lowest predicted background NO_x level in the area is immediately around the plant, and is shown as between 325 and 350 ug/m³. This compares with the maximum NO_x emissions level from the new incinerators (Ref. 1) that is shown as just greater than 0.75 ug/m³, with most of the study area being less than 0.5 ug/m³. Thus the incinerator impact is so small (less than 1/450th of the background level) as to be insignificant.



(AQIA – Appendix D - Figure D1)

TEA Statements 2:

From an environmental and health perspective, manufacturing pellets is better than burning sewage.” (Ref. 1)

NLC Commentary:

This statement is not corroborated by the Health impact Assessment report.

Study Findings:

“Overall, the health impacts associated with the alternatives are very small and there

are no appreciable differences in health impacts of the three short-listed alternatives.” (Ref. 15)

On the environmental side the GHG emissions for pelletization are three times higher than for incineration. (Ref. 16 and Ref. 20)

“While GHG emissions do not have a direct and local impact on health and the reductions in GHG emissions are very small, all three alternatives are expected to have a positive impact on human health.” (Ref. 17)

TEA Statements 3:

“The Air Quality Impact Assessment report also mapped the potential impact of another substance called Chromium. This is a heavy metal and certain types of Chromium emissions (Chromium 6) can increase cancer risks. Click here to view the Chromium air pollution map for the proposed incinerator.” (Ref. 1 and Ref. 8 - Figure D14)

NLC Commentary:

However, again no attempt is made to put these levels of contamination into context.

Study Findings:

Based on the information shown on Figure D14 (Ref. 8) the area of chromium pollution is very localised within less than 1 km of the plant

Table 9 of the AQIA report (Ref. 9) provides the expected annual levels of emissions for 41 Contaminants of Concern, from the existing incinerators, and the three alternatives. The relevant figures for Chromium are:

Existing Incinerators	3.0 kg per annum
Alternative 1	0.27 kg per annum
Alternative 2	0.005 kg per annum
Alternative 3	0.007 kg per annum
Total City excluding HCTP	545.0 kg per annum

This represents a reduction of more than 90% for Alternative 1.

Table 6.13 of the HHRA Report (Ref. 10) indicates the following:

Relative Percent Contribution to Predicted Non-Cancer Risk from Local Background and Project Sources for Chromium (Total COC background risk = 100%)

Background	0.49%
Existing Incinerators	0.0028%
Alternative 1	0.0013%
Alternative 2	0.00012%
Alternative 3	0.00014%

Thus, the Alternative 1 contribution represents less than 0.3% of the Chromium

background level.

TEA Statements 4:

“New Health Report identifies risks of burning sewage waste” (Ref. 2)

“A new City-funded health report confirms that burning Scarborough sewage poses more health risks than alternatives.” (Ref. 2)

“The incinerator scored the highest for respiratory, cardiovascular and cancer health risk as a result of possible exposure to air pollution as well as soil, dust and backyard contamination.” (Ref. 2)

NLC Commentary:

These general statements imply that Alternative 1 – New Fluidized Bed Incinerators will be a health risk to the local residents. This opinion is not supported by the studies.

The quoted extract only presents part of the report conclusions. The complete report extracts are shown below.

Study Findings:

“There were differences in the potential levels of risk attributable to the various alternatives. While the proposed fluidized bed incineration alternative had higher short term risks than the off-site haulage alternatives, the longer term risks were mixed among the alternatives. Alternative 2 had higher long-term non-carcinogenic risks, and the fluidized bed incinerator alternative had higher risks from exposures to carcinogenic chemicals and respiratory and cardiovascular induced hospitalizations and mortality (CACs). Despite these differences among the alternatives, the levels of exposure associated with all three alternatives were orders of magnitude below health benchmarks indicating that potential health impacts are very small and the differences among the alternatives do not result in any appreciable differences in terms of health impacts. (Ref. 11)

“The HHRA also examined the potential for health risks associated with cumulative exposure; that is, the total risk from existing background concentrations of COCs and emissions from the different alternatives combined. The HHRA found that the air quality in the study area was mostly impacted by other sources in and outside of Toronto. It is estimated that each of the three alternatives provides a small contribution (less than 1%) to the overall worst-case air quality conditions within the study area. Air quality in the Study Area is influenced primarily by vehicle emissions from Highway 401 and other major roadways (Ref. 11)

“Results of the assessment indicated that none of the assessed biosolids management alternatives would result in any unacceptable short or long-term health risks, either

from an inhalation, or soil or vegetation exposure route. Most predicted air concentrations from a new incinerator, with enhanced air pollution controls, would be many orders of magnitude below their corresponding health-based reference benchmarks – that is 3 - 12 orders of magnitude below.” (Ref.12)

“The various proposed biosolids management alternatives provided negligible contributions to the overall worst-case air quality conditions, which are primarily dominated by vehicle emissions from Highway 401 and other major roadways within the study area.” (Ref. 12)

In conclusion, modelling has predicted that all of the short-listed biosolids management alternatives being considered for the HCTP will have negligible impact to air quality within Wards 43 and 44 (the study area). The air quality COCs in the study area airshed primarily come from other sources, including highway and road traffic, rail, industry and residential sources. The emissions from all the short-listed biosolids management alternatives do not significantly change the cumulative concentration levels of COCs in the local airshed. Furthermore, each biosolids management alternative decreases the majority of predicted COC concentrations when compared to the current, base case multiple hearth incinerator operation of the HCTP. (Ref. 21)

TEA Statements 5:

“The Highland Creek Treatment Plant is the only remaining sewage incinerator in Toronto and not only is it a major polluter in Scarborough, it is one of the top polluters in our entire city” (Ref. 2)

“While far better than the old incinerator, the Health Impact Assessment found that a new incinerator would contribute the highest releases of air pollution compared to the other two alternatives.” (Ref. 2)

NLC Commentary:

These statements give a false impression that the Highland Creek Treatment Plant incinerators will be the major source of air pollution in eastern Scarborough. It is worth mentioning that fluidized bed incinerator units, similar to those proposed in Alternative 1, are operating successfully at Duffin Creek in Pickering, and at Lakeview in Peel Region.

Study Findings:

“The COC (Chemicals of Concern) emissions from the HCTP for all alternatives are very small compared to the total emissions from all sources within study airshed.” (Ref. 19)

“However, the predicted contribution from all biosolids management alternatives to these maximum cumulative COC levels are less than 1.0% for all these COCs.”(Ref. 19)

“The single largest contributor of COCs in background air quality in the study area is the Highway 401, which runs west to east, across Wards 43 and 44, at the north end of the study area. The maximum concentrations of these COCs within the study area are near the Highway 401.” (Ref 19)

TEA Statements 6:

“It [the Highland Creek sewage treatment plant] is Toronto's largest source of mercury pollution, which is a very harmful substance that is toxic to human health and aquatic life even in very small amounts.” (Ref. 2)

Unfortunately, one of the 3 alternatives for Highland Creek is to build a new incinerator to replace the old incinerator.” (Ref. 2)

NLC Commentary:

The positioning of these statements implies that the updated incinerator will also be an equally large source of mercury pollution.

Study Findings:

The recent Air Quality Impact Assessment Report compares the expected annual mercury emissions from the existing plant with the proposed new thermal reduction units with improved air emission controls, and the total City of Toronto emissions as follows (Ref. 9):

Existing Highland Creek Thermal Reduction Units	13 kg of Hg per annum
Proposed Highland Creek Thermal Reduction Units	1.2 kg of Hg per annum
Total City of Toronto emissions	29 kg of Hg per annum

This will reduce the Highland Creek mercury emissions by more than 90% from current levels

TEA Statements 7:

The Highland Creek Treatment Plant is the only remaining sewage incinerator in the City of Toronto and it is not only a major polluter in Scarborough, it is one of the top polluters in the entire City. (Ref. 2)

Why is Scarborough's air polluted? (Ref. 3)

The City-owned Highland Creek Wastewater Treatment Plant treats all of Scarborough's sewage and serves nearly 500,000 people. Unfortunately, it is one of the City's largest polluters because the plant burns sewage in an old incinerator.” (Ref. 3)

“The alternative to burning sewage is sometimes referred to as 'beneficial use'. This is how the majority of Toronto's sewage is already managed at the Ashbridges Bay Treatment Plant and it's the reason why their toxic emissions and health risks are far

lower than Highland Creek even though they process three times the sewage. (Ref. 2)

“Toronto’s other sewage plant, Ashbridges Bay Treatment Plant, serves three times the number of people (two million residents) and releases far less pollution into the air.

(Ref. 3)

NLC Commentary:

To support this last statement, TEA provides a Table (Ref. 3) that compares key emissions from the existing out-dated Highland Creek plant with emissions from Ashbridges Bay. This is misleading, as maintaining the current plant is not being considered as an alternative in this EA. The Highland Creek air emission data provided in the TEA blog post of May 25th, 2014 was based on the 2011 ChemTRAC data, and was for the existing Incinerators, which are scheduled for replacement.

A comparison that included emissions data from the proposed new fluidized bed technology would provide the relevant comparison.

Study Findings:

We present below a fairer comparison that includes the expected air emissions from the proposed new fluid bed incinerators units with improved air emission control systems, using data from the now available 2016 AQIA Report (Ref. 9). We also include the 2013 ChemTRAC data (Ref. 13 & 14). It will be noted that the proposed Highland Creek Air emissions are substantially reduced from the TEA figures, and represent a very small amount of the Total City of Toronto emissions.

Comparison of Air Emissions from Highland Creek and Ashbridges Bay Treatment Plants

Toxic Chemical Air Release - kg	2011 Ashbridges Bay (1)	2013 Ashbridges Bay (2)	2011 Existing Highland Creek (1)	2013 Existing Highland Creek (2)	Proposed New Highland Creek (3)	Total City of Toronto (3)	Proposed New HC as % of Total City
Cadmium	0	0	3	3	0.34	86	0.4%
Lead	0	0	32	18	2.1	375	0.6%
Mercury	0	0	11	10	1.2	29	4.1%
Nitrogen Oxides	33,000	37,300	66,000	111,000	1,214	55,004,000	0.0%
Particulate matter - 2.5	627	709	22,800	5,930	720	3,164,000	0.0%
Volatile Organic Compounds	1,820	2,050	703	805	NA	NA	NA

Notes

(1) ChemTRAC - 2011

(2) ChemTRAC - 2013

(3) Alternative 1 - New Incinerators - AQIA -Table 9 - 2015

NA - Data not available

Conclusion:

Our neighbourhood has worked, and waited, for many years to have our functionally

obsolete incinerators replaced with modern equipment. This change to new fluid bed incinerators with advanced air emission controls has been recommended by several scientific and professional reports over the years, but has been blocked by TEA and others who have an ideological stance against incineration of any kind, no matter how safe to human health and the environment, while promoting land application, with landfilling as a back-up, with no regard for the communities' preferences. We are also concerned that the TEA blog posts focus solely on air emissions. We have concerns about other contaminant releases to the soil and watercourses as a result of the land application of biosolids.

I should point out that the executive boards of all five local community associations have declared their support for Alternative 1.

Yours truly,

Frank Moir

Co-Chair Highland Creek Treatment Plant Neighbourhood Liaison Committee

with the support of the following HCTPNLC Committee Members

Barbara McElgunn

Allen Elias

Ron Wootton

Don York

Victoria Schei

Per-Inge Schei

Jennifer McKelvie

Betty Smith

Bruce Smith

Jim Wakefield

List of References (attached separately):

TEA Blog Posts

1. http://www.torontoenvironment.org/air_pollution_from_burning_sewage
2. http://www.torontoenvironment.org/health_report_burning_sewage
3. http://www.torontoenvironment.org/why_is_scarborough_s_air_polluted

Biosolids EA Reports

4. Dec. 2015 HCTP Air Quality Impact Assessment Report.pdf
5. Oct. 2015 HCTP Health Impact Assessment Report.pdf
6. Oct. 2015 HCTP Human Health Risk Assessment Report.pdf
20. GHG Update Final.pdf

Biosolids EA Report References

7. AQIA – Appendix D - Figure D1.pdf
8. AQIA – Appendix D - Figure D14.pdf
9. AQIA - Table 9.pdf
10. HHRA - Table 6-13.pdf
11. HIA page 39.pdf
12. HHRA page xviii.pdf
13. ChemTRAC 2013 ABTP.pdf
14. ChemTRAC 2013 HCTP.pdf
15. HIA page vii.pdf
16. HIA Table 26.pdf
17. HIA page 67.pdf
18. HIA page ii.pdf
19. AQIA page iv.pdf
21. AQIA page vii.pdf
22. HHRA Table 6-12.pdf