COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

EARTH ENGINEERING CENTER

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Dear Editor,

I have read with interest the article by Ms. Gina Damron on the City's examining various options regarding managing its wastes in the future. Columbia University has been engaged for several years in the study of various means of dealing with the ever increasing tonnage of municipal solid wastes (MSW). Also, every two years we conduct a national survey of MSW generation and disposition in the U.S. This survey is published in BioCycle journal and its results are used by EPA in its GreenHouse Gas analysis. (www.seas.columbia.edu/earth/wtert/wpublication.html).

From several graduate research studies of the U.S. and also global picture, it is clear that the controlled combustion of MSW in waste-to-energy plants is environmentally much superior to landfilling. It is true that twenty years ago, not enough was known about the emissions of incinerators; the same was true in earlier years for other high temperature processes, such as steel and copper smelting furnaces. However, in the nineties EPA promulgated its MACT (Maximum Achievable Control Technology) regulations. As a result, the remaining waste-to-energy (WTE) facilities are one of the cleanest sources of energy, much cleaner than the coal-fired power plants that provide 50% of the U.S. electricity.

When I read the article of Ms. Damron, specially her reference to people who complained of its emissions, I wondered whether your Greater Detroit "incinerator" is an exception to the above rule. Therefore, I obtained a monthly record (September 2007) of the emissions of the three combustion units of this plant, such as are submitted regularly to state and federal environmental agencies. I then compared the Greater Detroit WTE emissions to the average emissions of ten of the best WTE facilities in the world that were nominated to the 2006 competition of Columbia University (they included Vienna, Amsterdam, London, etc.)*. The tabulation at the end of my letter shows that the Greater Detroit WTE is as clean as the best WTEs in the world and that its emissions are well below the environmental regulations of the U.S. and also of E.U.

**http://www.seas.columbia.edu/earth/wtert/meet2006/Proceedings/files/index.html*

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In considering other options, the City Council should include in its deliberations the external costs and environmental impacts of the alternatives. In its twenty years of operation, the Greater Detroit WTE disposed of nearly 18 million tons of MSW and provided the grid with about 9 billion kWh. It avoided the mining of about 5 million tons of coal and the conversion of 400 acres of greenfields to landfills.

There is no question that Detroit and Michigan should increase their recycling rate from its current 17% (national average:29%). Yet, even California that has a recycling rate of 39.6% still landfills one ton of MSW per person. Therefore, if Detroit decides to close this WTE, it should prepare to use up to two thousand greenfield acres in the rest of this century.

Yours sincerely,

Nickolas J. Themelis
Director, Earth Engineering Center

Comparison of atmospheric emissions of finalists of the Columbia University's

Emission	**Average of 10 finalists**	**Greater Detroit RRF Unit #11**	**Greater Detroit RRF Unit #12**	**Greater Detroit RRF Unit #13**	**E.U. standard**	**EPA standard**
Particulate matter (PM), mg/DSCM*	3.1	**0.196**	**3.27**	**0.818**	10	11
Hydrogen chloride (HCl), mg/DSCM	8.5	**5.35**	**6.28**	**8.79**	10	29
Mercury (Hg), mg/DSCM	0.01	**0.0007**	**0.002**	**0.0015**	0.05	0.06
Dioxins.furans , ng TEQ/DSCM	0.02	**0.02**	**0.06**	**0.08**	0.10	0.14

**Dry standard cubic meters; mg: milligrams; ng: nanograms*

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