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**From:** Joe Minor  
**Sent:** April 28, 2011 11:34 AM  
**To:** Joe Minor  
**Cc:** City Information; Public Health Services; Web Requests; clerk@hamilton.ca  
**Subject:** Re: To: The Mayor and All Members of Hamilton City Council c/o the Clerk



To: The Mayor and All Members of Hamilton City Council c/o the Clerk

Please include this in the official (and publicly available) correspondence for the next meeting of Council.

Yesterday (April 26, 2011) I was visiting the site (N 43.16274° W 79.94191°) where there is a persistent and ongoing flow of pfos leaving City (airport) property and contaminating surface waters leading to the Welland River. A photograph (101\_239.jpg) is attached, video is also available. I would estimate the flow of pfos contaminated water leaving City property to be a few liters per second. Please also notice that the location where pfos contaminated sediment was sampled is totally inundated with flowing water and so pfos contaminated sediment is being mobilized and moved downstream towards the Welland River and Binbrook Reservoir (Lake Niapenco). I am concerned that I did not see any evidence that action is being taken to stop the ongoing contamination of the Welland River by pfos exiting City property. Please also note the pipe embedded in the creek bed. This would appear to be some form of monitoring station. I would like to know what information exists from previous monitoring at this location.

While the currently available information about this ongoing pollution is sparse, it is possible that the flow of pfos exiting City property has been ongoing for almost 30 years. The fact that this contamination went unreported and unregulated for 30 years should not be used as an excuse to delay action on controlling the ongoing pollution.

I would appreciate it if I could be kept informed of what is being found out about this pfos contamination and what is being done to clean it up. I will endeavor to keep Council informed of what I find out as well.

Since my last communication (April 25, 2011) I have found out the following:

The airport fire fighting practice pad (location: 43.166886°, -79.939753°) was built in 1981. I would very much like to see the building permit for this pad and/or the structures that were placed upon it (as well as any other information about the pad). I am interested in knowing if there was any form of liner installed and if there was any effort to recover the wash water that resulted from spraying pfos containing foam on fires that were lit by burning "what" (petroleum products? Waste oils? PCB tainted waste oils?). If there was no liner or wash recovery system, is it then true that the toxic mess that would result was just allowed to flow across/through the gravel pad and into a tributary of the Welland River? I would like to see any records that might exist regarding what materials were burnt and what materials were sprayed to put out the fires.

4/28/2011

In order to help locate these records, the following information might be helpful:

From 1981-1985 the fire crews that would have been using the site would have been "City" fire crews. From 1985 on the fire crews would have been "federal" fire crews. The point is that the management of the airport fire crews changed in 1985, so the records of the use of the pad might be located in different locations for pre- and post-1985.

Area residents report frequent columns of black smoke from the pad. City records on when these events occurred would be useful. Starting dates (1981?) and ending dates are particularly important. While the scientific literature (e.g., Yeung LWY<sub>1</sub>, Marvin CH<sub>2</sub>, De Silva AO<sub>2</sub>, Lam PKS<sub>3</sub>, Taniyasu S<sub>4</sub>, Yamashita N<sub>4</sub>, Muir DCG<sub>2</sub>, Mabury SA<sub>1</sub>, **PERFLUORINATED COMPOUNDS IN SURFACE SEDIMENTS AND CORES FROM LAKE ONTARIO**) indicates that the bulk of pfos fire fighting foam releases probably occurred in the 1980s, pfos releases at Pearson Airport (Toronto) occurred as late as 2000 and 2002.

The fire suppression materials that were used on this pad did contain pfos (hence the contamination), and the pfos containing formulations changed over time. It is my current understanding that the concentrate was initially in liquid form and later in powder form, but I am seeking clarification that both formulations did contain pfos. Clarification from the City on this point would be helpful. In addition to the obvious environmental contamination, the City needs to consider whether occupational exposure of the fire fighters is also of concern. I suspect this might be more of a problem for powdered formulations via inhalation, however fine sprays and the aerosolization/vaporization that occurs off of hot surfaces (fires tend to be quite hot....) are also likely sources of occupational exposure.

I would like to tour the fire fighting practice pad, and I have made a request to the airport operator to be allowed to visit the site. I would appreciate it if the landlord (City) could speak to the tenant (airport operator) to ask that this visit be allowed. Or, is the landlord allowed access to the property? Could the City take me?

While it is possible that most to all of the pfos leaving the airport leaves through/under the fence at location N 43.16274° W 79.94191°, it is possible that there are other sources as well. In addition to the "tank" described below, other fire fighting exercises took place in the vicinity of the current "federal building" (near where military jets now park when they visit). With respect to pfos, since most of these exercises were probably mostly pre-1981, perhaps pfos was not a component of the foams that were being used.

While pfos contamination of groundwater is likely (for the reasons outlined below), what is not known is just how fast the groundwater contamination is moving. A groundwater expert told me that the rate of movement could be as low as centimeters per year and up to kilometers per year depending on the nature of the underlying materials (e.g., fractured materials could have conduits allowing for faster transport). If we are very lucky no conduits exist and off site groundwater movement could be minimized by cleaning up the most contaminated locations (e.g., the pad) and by removing enough water at shallow wells at the site to keep the area relatively dry. Capping is also possibly useful, such as the cap put on the Rennie landfill.

If any of this is unclear, please feel free to contact me. Also, please let me know about what the City knows when it becomes available.

On 4/25/2011 11:00 AM, Joe Minor wrote:

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To: The Mayor and All Members of Hamilton City Council c/o the Clerk

4/28/2011

This letter is to inform you of an active and ongoing spill of a persistent bioaccumulative toxic pollutant (pfos) exiting City property. I am also formally requesting that the City publicly release all information it has with respect to how this spill occurred and what is being done to end the persistent and continuing pollution of a local creek (a tributary of the Welland River). I am also concerned that the location of the spill (in a designated sensitive groundwater recharge area) makes it possible (even likely) that groundwater is also being contaminated on an ongoing basis.

On April 9<sup>th</sup>, 2011 I collected a sediment sample from a small flowing creek at the fence line of the airport. The location as determined by a WAAS-enabled GPS unit (Lowrance iFINDER H<sub>2</sub>O) was:

N 43.16274° W 79.94191°

This sample was submitted to a certified testing laboratory and the Certificate of Analysis **RESULTS OF ANALYSES OF SEDIMENT** was:

Perfluoro-1-Octanesulfonate (PFOS) 170 µg/kg (ppb)

Perfluoro-n-Octanoic Acid (PFOA) 4.6 µg/kg (ppb)

This is an extraordinarily high level of pfos contamination of sediment, and appears to represent the highest publicly available published value for pfos contamination of sediment. The next highest value in the literature is 51 ppb, which was the single highest value recorded in Lake Ontario sediments amongst 83 samples tested. The level of pfos contamination of sediment immediately downstream of the City owned Hamilton Airport sets a new world record, in that it is more than three times higher than the old record.

This world record concentration of pfos sediment contamination corresponds with the levels of pfos contamination in carp living downstream of the Hamilton Airport contamination site. Data from the Ontario Ministry of the Environment's Guide to Eating Ontario Sport Fish (2011-2012) indicate that all tested carp over 45cm in length living in Lake Niapenco (where the Hamilton Airport ongoing pfos contamination flows to) have muscle tissue (fillets) contaminated in excess of 640 ppb. The next highest value from the publicly available published literature was 297 ppb (Saginaw Bay, Michigan). Carp living downstream of the Hamilton Airport are also world record holders (the most pfos contaminated carp in the world), more than doubling the previous world record.

City staff have referred to the pfos contamination as "historical". This is an imprecise term serves only to confuse (rather than educate) the public. How long ago does "history" start? When was pfos applied to City property? Where was it applied? How much was applied? All of this important information is obscured by the term "historical".

Due to the paucity of information from the City, significant doubt remains about when, where, and how much pfos was applied to City property. In contrast, there is absolutely no doubt that City property continues to contaminate at least one surface stream (a tributary of the Welland River) on an ongoing basis. The sediment sample I collected was a recently deposited, unconsolidated, water saturated (39% moisture) sediment sample collected from the bottom of a

flowing stream. The high level of pfos contamination, in conjunction of what is known about the partitioning of pfos between fresh water and sediment, means that the water and suspended sediment flowing through and under the fence (exiting City property) carry significant levels of pfos on an ongoing basis. To continue to ignore the probability that pfos is also exiting City property in groundwater constitutes a failure to exercise due diligence.

The City should have at its disposal a large quantity of high quality, recent information regarding this area. A large number of City staff and a very large number of outside consultants were paid to prepare a Secondary Plan and three Environmental Assessments for Aerotropolis (aka the "Airport Employment Growth District", AEGD). Considering this project was promoted as a "Green Eco-Industrial Park", certainly the assembled professionals did intensive research and reporting on the past, present, and future sources of pollution from the AEGD's anchor tenant. I am asking that the City release this information to the public, because somehow it did not make it into the publicly released package of information Council considered prior to voting to expand the airport.

In addition to not mentioning pfos, the publicly released portion of the staff/consultants package regarding the expansion of the airport did not mention other ongoing pollution problems such as glycol (de-icing solution), zinc, and salt. I am asking that the City release any information it may have about pollution at the airport, particularly if that information was "provided under separate cover" outside the public process. I find it a bit odd that it is even necessary make such a request, but ever since airport operations were privatized much information about the airport is received by Council (or committee) *in camera*, and the public has no way of knowing what Council has been told.

To repeat, I am requesting that the City investigate when, where, and how much pfos was released at the City airport, and that the City inform the public (and me) of its findings. I pose some more specific questions below, and I provide some information that I have found out that might help focus the City's investigation.

On the morning of Friday April 22<sup>nd</sup> I met with Robert Koroscil (representing airport operations) at the site of the pfos contamination. Mr. Koroscil also expressed concern about the contamination, and offered the following observations (these are not direct quotes, but are my best recollection of his comments):

A) fire fighting exercises at the airport ended "about a decade ago",

B) to the best of his knowledge, any use of pfos at the airport would have been more than 15 years ago,

C) while he will continue to investigate what has happened at the airport in the past 15 years (and report his findings publicly), prior to that any knowledge about what has happened at the airport would have to come from the City. Mr. Koroscil indicated that information about past airport operations was "not available to him" and "was held tightly by the City".

The site where the 170 ppb pfos in sediment was recorded was selected because it is immediately downstream of the fire fighting practice/training pad. Any knowledge about activities at this pad would be invaluable in trying to get a handle on the magnitude and timing of the pfos contamination. I visited the Maps Library in the Mills Library of McMaster University. Examination of the aerial photographs reveals that this pad was constructed between the times aerial photographs were taken in 1978 and 1985. Any information about the construction of this pad will aid in determining the magnitude of groundwater contamination. The area where the pad was built is a "sensitive groundwater recharge area", meaning some groundwater contamination is likely. The magnitude of the contamination would be expected to increase greatly with the depth of the gravel pad that was placed on the site. Perhaps the greatest levels of infiltration would be

expected if there was excavation of the site prior to the placement of the gravel pad. The City needs to see if it has any records on the construction of this pad. In particular, I am requesting that I be sent a copy of the building permit(s) for this pad and the associated structures that are on it. Any information that can be found will decrease the amount of money that will need to be paid to consultants in order to reconstruct what happened at the site if the information is "missing".

The City needs to investigate what records exist regarding what happened with respect to fire fighting exercises that occurred on the site. The equipment (e.g., pumper trucks), materials (e.g., pfos foam), and personnel engaged at the site all cost money and there should be some mechanism of accountability. In particular, any "lost" pfos would have to be replaced, and pfos was never free. How much pfos has been purchased by and/or delivered to the airport? (This type of analysis should be easy for an accountant to perform.) Another key time point for an inventory would be at the time when airport operations were privatized. Assuming there was some professional effort made to protect Hamilton taxpayers in this transaction, there should have been an inventory of assets (including pfos) at the time of transfer. How much pfos did the privatized airport operator "inherit"? And finally, how much pfos is at the airport now? A reasonable first approximation for the total amount of pfos applied to city airport property would be:

(Total pfos delivered to the airport) – (Total existing stocks) = (Total amount "missing")

"Missing" probably means "released" somewhere on airport property, because if significant amounts of pfos were deliberately exported off site, there should be records for this as well. A quick *caveat* - some of these categories have fuzzy edges that change with time, for example: the airport is currently exporting pfos continuously under the fence at N 43.16274° W 79.94191°.

The airport may also be exporting pfos at other locations, and the City needs to investigate what those sites might be and have them tested. It is possible that the fire fighting pad described above is not the only place where pfos was released on airport property. I have been told that there were other places on airport property where fire fighting was practiced. One site that has been described to me was an old tank inside of which fires were lit and then put out. I would like to know where this and any other fire fighting practice sites were, and what materials were used inside of them.

It is time for the airport to come clean and disclose when, where, and how much pfos it has released to the environment. It needs to do this as soon as possible. More importantly, immediate efforts need to be taken to stop the ongoing contamination of the surrounding environment by the badly contaminated airport property.

If any of this is unclear, please do not hesitate to contact me. I eagerly await any information the City may wish to share with me regarding this environmental disaster.