Subject: The Sears Gas Plume Q & A Summary Final, August 2014
Date: Sat, 6 Sep 2014 22:38:21 -0600
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First of all, the HH-BH Community Association thanks Sears and its agent Clifton Associates for releasing the "Q&A Summary Final" dated August 15, 2014, a compendium of answers to questions put forward by the community residents who attended the May 27 Open House. And, of course, you will join me in celebrating the advent of Jim Prentice as our new PC leader-elect and upcoming Premier of this fine Province of ours… Jim has an interesting agenda of "cleaning" the province in the coming months, Short Live our own Plume!

The purpose of this note is to (1) have a closer look at and discuss a number of questions-answers that illustrate ongoing concerns by the Sears Gas Plume Committee (GPC) on the potential heatlth risk to the residents of the Community, and (2) propose recommendations to help alleviate such risks.

The 3 Q&As are Q7, Q8 and Q31, reprinted here:

Q7: During the community meeting it was stated that more gas vapour data is to be gathered to establish how big the plume is. This was done over ten years ago, and it's telling us that nobody knows what we're dealing with. Was the gas vapour data poorly gathered in the past and is this why it is being redone?

A: The original soil vapour gas samples were obtained and evaluated in 2003 – 2005 per the required standards of the time. The data was gathered and assessed appropriately for the state of knowledge at the time; however, over ten years have passed since the original data was collected and technology has advanced as well. The health and safety of the area residents is paramount, so we felt it prudent to sample again, as necessary, and make sure that things have not changed.

Moving forward, soil vapour gas sampling will only be done in locations where it is determined to be necessary and will add value to our overall understanding of the Site.
…

Q8: Why is Intrinsik still involved in Health Risk Assessment (HRA), while we're told in the info package that "the risk assessment determined that there is no health risk to the residents…"?

A: Alberta Environment and Sustainable Resource Development (AESRD) has requested a revised HRA to confirm that health risks are not present at the Site. In addition, since the original HRA, guidelines for determining risk levels have changed. Intrinsik's involvement will include the calculation of revised risk assessment guidelines. It is beneficial to include a firm with a significant history of knowledge on the background of the Site and who is competent in HRAs.

Q31: How deep are the PHC impacts within the Site?

A: The impacts vary across the Site. In the Hounsfield Heights area, the impacts can be found to a maximum depth of at least 18.3 m (BH725).

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1. The GPC disagrees with the answer to Q7. It is not that today's technology has advanced, it's that original soil vapour samples were simply not acquired properly in 2003-2005: proper technology was already well-established and available at the time. Let us explain.

The pre-1970s fuel additives identified in the gas plume clearly show that there has potentially been long term exposure to petroleum substances including known carcinogens in the HH-BH community. To quantify the public health risk of these toxic compounds (i.e. the risk that they have migrated upward from the plume at depth into the shallow soil around residential basements), Sears and their agents have relied solely on surface soil vapour probes (which may have been incorrectly inserted).

That is to say that they have not obtained physical samples of the soil and its contained fluids at depth around residential basements to get in-situ data.

The collective experience of the GPC with soil vapour probes has been that they are not considered a reliable indicator of subsurface hydrocarbons in the petroleum exploration industry, so we are very skeptical as to how they can be taken as a reliable indicator of the presence of carcinogens in a residential neighbourhood from a public health standpoint. If oil companies are generally not willing to spend money drilling oil wells on the basis of soil vapour probe data, how on earth can they be taken as a benchmark of public health risk?

The GPC thus calls for ESRD and AHS to demand a more rigorous investigation on the presence or not of carcinogenic and other hydrocarbons in the shallow soil that could pose a very real health risk to the residents of HH-BH. The only way to do this reliably is to core boreholes through the shallow layers to a depth greater than a typical residential basement and analyze the appropriately preserved core samples in an accredited laboratory.

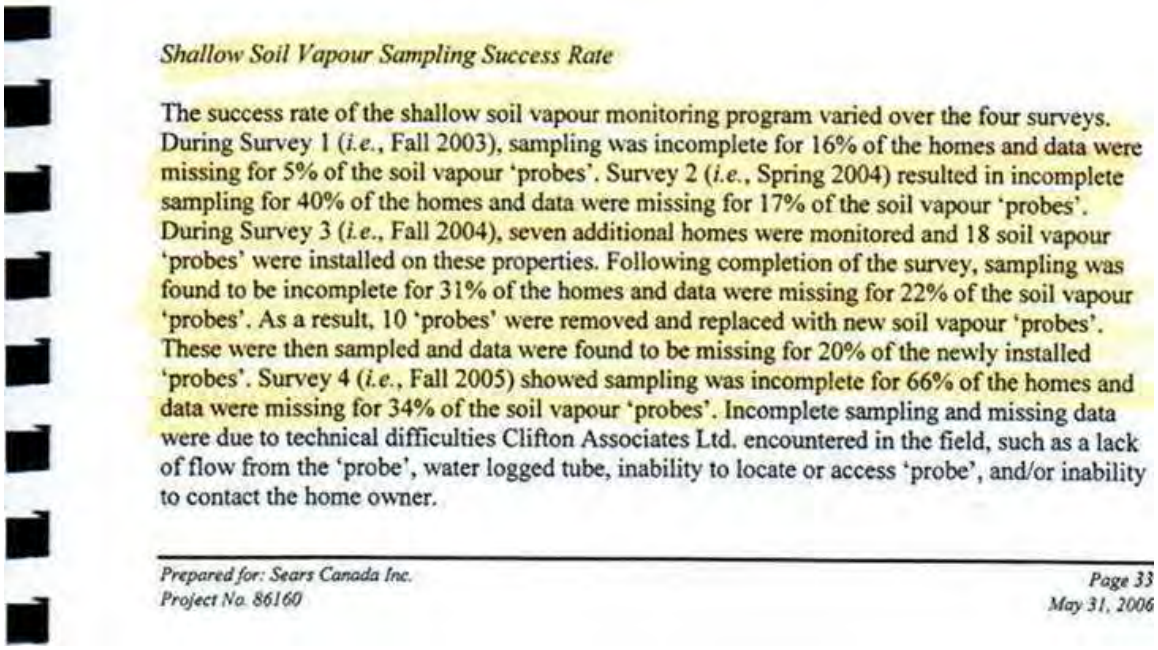
A more correct procedure would be:

- The cores from the shallow soils should be sealed and all headspace and pore space gas analyzed in a laboratory to establish what chemical compounds are present, in what quantities and how they compare to public health and environmental safety guidelines;
- Core samples from the Clay Layer which allegedly acts as a seal to prevent upward movement of hydrocarbons should also be subjected to vertical permeability tests to establish whether or not it is an effective barrier.

Please, let's refrain from using words like “probably”; they have no place in a site management plan that governs the health of residents!

We do not understand how the Q7 statement " soil vapour gas sampling will only be done in locations where it is determined to be necessary" could even be implemented considering that no reliable technology practice has been described in the Updated SMP (2014); we propose the one that we just described above, to be implemented in all locations of the Site, especially those on and south of 11 Avenue NW, where the Clay Layer disappears - more to come on this subject later.

2. It is surprising and interesting to read the answer to Q8 that, despite earlier representation that "the risk assessment determined that there is no health risk to the residents", AESRD is nevertheless requesting a revised HRA (Health Risk Assessment). GPC shares AESRD doubt that all's well in the land… GPC appreciates that "it is beneficial to include a firm - i.e. Intrinsik - with a significant history, etc.", yet let's recall that it is the same firm Cantox, now renamed Intrinsik, that implemented the 2003-2005 soil vapour program, now largely discredited because of poor results. The 2006 Cantox report states:



Shallow Soil Vapour Sampling Success Rate

The success rate of the shallow soil vapour monitoring program varied over the four surveys. During Survey 1 (*i.e.*, Fall 2003), sampling was incomplete for 16% of the homes and data were missing for 5% of the soil vapour 'probes'. Survey 2 (*i.e.*, Spring 2004) resulted in incomplete sampling for 40% of the homes and data were missing for 17% of the soil vapour 'probes'. During Survey 3 (*i.e.*, Fall 2004), seven additional homes were monitored and 18 soil vapour 'probes' were installed on these properties. Following completion of the survey, sampling was found to be incomplete for 31% of the homes and data were missing for 22% of the soil vapour 'probes'. As a result, 10 'probes' were removed and replaced with new soil vapour 'probes'. These were then sampled and data were found to be missing for 20% of the newly installed 'probes'. Survey 4 (*i.e.*, Fall 2005) showed sampling was incomplete for 66% of the homes and data were missing for 34% of the soil vapour 'probes'. Incomplete sampling and missing data were due to technical difficulties Clifton Associates Ltd. encountered in the field, such as a lack of flow from the 'probe', water logged tube, inability to locate or access 'probe', and/or inability to contact the home owner.

GPC explained a procedure - see above in Q7 discussion - how to take vapour samples correctly.

We would thus request Clifton/Intrinsik to explain and describe how they plan to implement this new HRA.

3. Question 31 is correctly answered, i.e. The impacts vary across the Site. In the Hounsfield Heights area, the impacts can be found to a maximum depth of at least 18.3 m (BH725). However, the answer is so incomplete that it lulls residents into a false sense of security believing that the pollution is so deeply buried below their lungs that they could conclude "why all the fuss and need for a new HRA"? Let us explain.

GPC Cross Section 13Ave to 10Ave - attached - shows that the impermeable “protective” Clay Layer does not extend south of 11Ave. The residents south of 11Ave are thus not protected from vapours coming from the contaminated aquifer by this clay layer, there is thus no barrier between the aquifer and the surface. It can be seen that the clayey silt layer is not found across the entire studied Site area; it disappears downslope, as it subcrops just north of 11 Ave, and has beforehand thinned to a minimum thickness that would allow vapours to migrate through the layer, so as to cause risk to the residents living in structures built upon the surface.

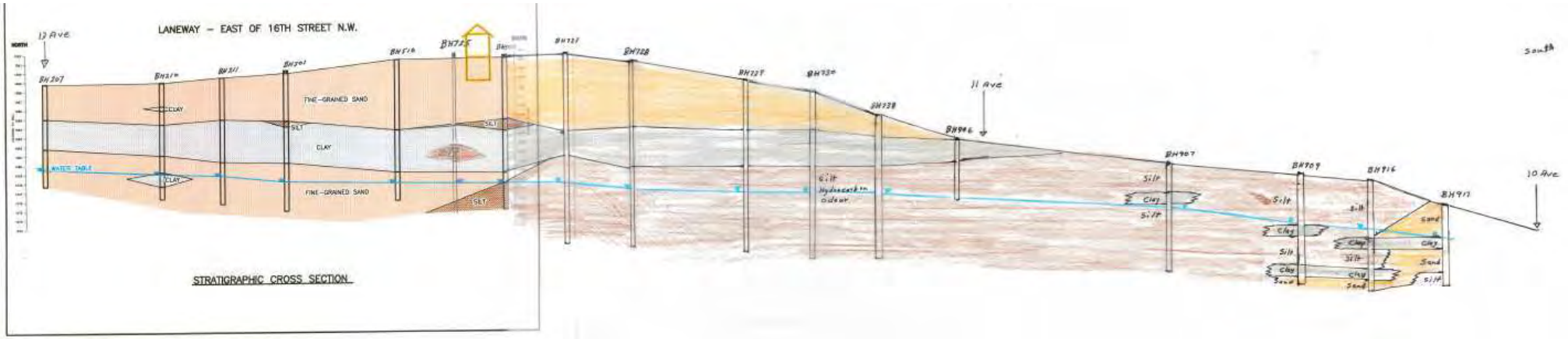
While residents of the Community understand that Sears is acting in its own best interests within the law, it is the responsibility of ESRD and AHS to act in the public interest and, as part of the new HRA, to thoroughly scrutinize the data and its implications for public health, not to rely on assurances from Sears and their agents. Have AHS and ESRD had their own qualified experts thoroughly review the Updated SMP (2014) from a public health standpoint, not simply rubber stamping it? i.e. do their experts believe that the data and interpretation in the SMP guarantees that there is no public health risk to the residents of HH-BH? If they do not have this expertise available, or there is any doubt in the sufficiency of the data or its interpretation, then it would be reassuring to have an independent third party thoroughly review the data.

We conclude the discussion by stating that GPC has proposed a number of constructive and practical recommendations for your consideration; they're all readily implementable; all that is required is the will by Sears and their agents to carry them out. The Q&A Summary Final has given us an opportunity to re-address the potential health questions looming from the long-lasting and migrating gas plume.

Duty-bound to alert the residents of HH-BH, the GPC will continue to bring health and remediation issues to all stakeholders' attention.

Yours truly,

Emmanuel Malterre
Chair, Sears Gas Plume Committee
Hounsfield Heights-Briar Hill Community Assocation
Calgary AB



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