Ms. Judith Grant
Federation of Tiny Township Shoreline Associations
17 Admiral Road
Toronto, Ontario
M5R 2L4

January 27, 2020

Re: Responses to CRH's Letter of January 3, 2020

Dear Ms. Grant,

I am writing to share with you this submission of my comments and responses to information and statements in the January 3, 2020 letter from Ms. Jessica Ferri from CRH Canada Group Inc. (CRH). My comments and responses follow below:

1) Groundwater Resources

The existing Teedon Pit and the proposed Teedon Pit Extension are situated on the flanks of a massive upland area (the Waverley Uplands) composed mainly of sand and gravel. Beneath the ground surface the sand and gravel upland area is storing a vast, abundant groundwater resource.

This groundwater resource extends through the base of the upland and far into the surrounding area. In effect, the upland is capturing and storing abundant amounts of rainfall and filtering that rainfall as it moves through the groundwater flow system. The groundwater resource is very important to local residents of this rural area, who are dependent on groundwater (via their wells) for their domestic water supplies.

Because groundwater is "filtered" by various processes as it moves through sandy materials, the groundwater resources in the area of the Teedon Pit and the proposed Extension are also pristine - some of the purest groundwater ever found, according to research done by Dr. William Shotyk.

2) Permit to Take Water Issues

CRH and its predecessor company have been operating a gravel pit (the Teedon Pit) which includes a leaky aggregate washing operation. During the original application/ approval process the proposed aggregate washing operation was described to the Ministry of the Environment, Conservation and Parks (MECP) and neighbours as being "closed loop" - one with minimal water losses.

Instead of the promised water-minimizing "closed loop", the aggregate washing operation in the Teedon Pit has lost vast amounts of water. Even CRH representatives are now characterizing their aggregate washing operation as being "closed loop, with leaky ponds".

By definition, "closed loop" implies no significant leaks. But CRH's aggregate washing operation is characterized by very leaky ponds. When the aggregate is washed, the wash water is very silty. Vast quantities of this silt-laden wash water have leaked into the pristine groundwater system whenever CRH (or its predecessor) have been washing aggregate, and this has been ongoing for the past 10+ years. Moreover the pit floor is sloped to allow drainage of surface runoff from the pit floor into the leaky wash pond, and this may be exacerbating the problem.

Coincident with the start of construction of the wash ponds and the commencement of aggregate washing operations at the Teedon Pit, residents at the bottom of the upland on which the Teedon Pit is situated started noting unusual effects - in some cases it was dramatic increases in groundwater levels and spring flows (eg. Steve Ogden's property and well), in others (most notably the Pauze/Pigeon family) it was silt contamination of their wells.

All of the homes and farms at the base of the upland on which the Teedon Pit is situated are dependent upon water from their wells for drinking water and domestic water supplies. When their wells started becoming affected, they did their best to let the operators of the Teedon Pit know.

The pit operators' response was inadequate, and the families raising concerns were told that the problem was that they had poorly constructed/maintained wells. An alternative way of looking at the situation would be to say that CRH has poorly designed and constructed wash ponds, which are leaking vast quantities of silt-contaminated water into the surrounding groundwater flow system.

But instead of listening to their neighbours and taking a precautionary and proactive approach and doing what was needed to end the losses of silt-laden water in their operations (for example, by lining their ponds), CRH and its predecessor company have taken a different approach. Consultants were hired and eventually 3 domestic well surveys were carried out - in 2015, 2017, and 2018. Those surveys are not persuasive.

CRH's predecessor company and the MECP had failed to do any baseline testing of any residents' wells before operations began at the Teedon Pit. So there was no clear way to prove or disprove the residents' complaints and concerns by comparing well water quality prior to the start of operations to water quality afterwards.

The consultant who carried out the 2015 well survey wrote repeatedly about the "closed-loop" system at the Teedon Pit, without mentioning that it was leaking vast amounts of silty water. Overall the approach was to indicate that problems with construction or maintenance of residents' wells were to blame for their problems. No attempt was made in the 2015 well survey to explain why residents started experiencing impacts coincident with the commencement of operations at the Teedon Pit.

The 2017 well survey is provided in Appendix C.4 of the 2018 PTTW Application. It appears to simply consist of a 1-page questionnaire on which five families/residents with concerns outlined those concerns.

The 2018 well survey identified 11 residents reporting silt issues in their wells. As soon as that fact was established, the rest of the 2018 well survey letter consisted of a listing of reasons why the authors believed the Teedon Pit could not be responsible. There was no mention of the wash ponds at the Teedon Pit leaking vast amounts of silty water.

Missing from each of these well surveys was a more scientific approach, for example, that could have involved an ongoing program of monitoring residents' wells, to see if the intermittent episodes of silt contamination of their wells could be linked to things happening at the Teedon Pit.

A comprehensive summary of concerns about the Permit to Take Water (and past impacts of the aggregate washing operations) was provided by Wilf Ruland (P. Geo.) in a report dated April 23, 2018. This report included detailed analysis, conclusions and recommendations - there has been no response from CRH to that report and to the issues it raises.

3) Groundwater Flow Directions

CRH and its predecessor company have no idea where all the disappearing, silt-laden wash water is going. But that water doesn't just disappear. It is going somewhere - and it is moving in a downhill direction, because that's the way groundwater moves.

CRH claims that the groundwater flow system is "well understood". This is incorrect - it would be correct to say that the groundwater flow system is complex, and that as ever more information becomes available our understanding is improved. The owners of the Teedon Pit have had three hydrogeological consultants, and each has offered different opinions on the directions of local groundwater flow.

The most recent interpretation from CRH's current consultants is that groundwater is moving west - which happens to be from the area of the wash ponds, toward the area of the aforementioned impacted Ogden and Pauze/Pigeon wells. But there are really not enough wells installed in this complex groundwater flow system to fully understand the hydrogeological big picture, let alone the specific details. This is one of the reasons for the recommended moratorium on aggregate development, pending a broader hydrogeological study of the Waverley Uplands and surrounding area.

In the meantime, the reality will be that groundwater movement from the area of the Teedon Pit wash ponds will follow complex subsurface pathways, always focussed in the more permeable sand/gravel layers - and groundwater generally will be moving in a downhill direction from the upland toward the surrounding lower-lying areas.

4) ARA Application for Teedon Pit Extension

Contrary to claims by CRH, what is happening at the existing Teedon Pit and its wash ponds is absolutely relevant to the current extension application. This is because CRH has indicated that if the Teedon Pit Extension is approved, then aggregate from the proposed Extension area is going to be washed in the same leaky wash ponds in the Teedon Pit which are currently in dispute.

Licensing the Teedon Pit Extension will add many more years of aggregate washing in the leaking aggregate washing operation being carried out in the Teedon Pit, resulting in many more years of loading the aquifer with silt-laden wash water.

5) Provision of Information

CRH indicates that it has set up a website to improve community access to information. Additions/Improvements are needed, for example:

- The 2018 Annual Monitoring Report (assuming one was prepared) is missing from the website, and should be added.

- Borehole logs for monitoring wells installed in 2018 are provided in a stand-alone section, but the logs for boreholes drilled in 2018 are not to be found there - these should be added.

- Prior test pit and well logs are missing entirely, and should be added to the aforementioned section with 2018 borehole logs.

- Water level data for the wells installed in 2018 is provided, but with no analysis which would make the data accessible or useful - instead, there are 111 pages of columns of water levels from pressure transducers which have taken multiple readings per day.

Hydrographs of water level data and tables/figures showing water levels across the site should be added to this section, or put in a stand-alone section of their own.

- Missing entirely is an updated hydrogeology report which takes data from the new wells installed in 2018 and integrates it with information from prior hydrogeology studies. Such a report is urgently needed - it should be prepared and added to the website.

CRH says that it has continued to meet with the Community Liaison Committee (CLC), however the way in which CLC meetings have been conducted is open to question. A review of the CLC meeting presentations (available on the CRH website) reveals that technical presentations were by experts retained by CRH only, and presented an incomplete picture of water issues related to the Teedon Pit and the proposed Extension.

Moreover, CRH has apparently recently (as of late September 2019) cancelled all further CLC meetings.

6) The Role of the Ministry of Environment, Conservation and Parks (MECP)

CRH has repeated claims made by the MECP that the silt in local residents' wells is not related to the operations at the Teedon Pit, and that the silt issues can be attributed to the silty nature of the shallow aquifer and/or poor well construction or maintenance.

Section 4 of the April 23, 2018 report prepared by Wilf Ruland (P. Geo) lists and addresses the many deficiencies of the MECP's original approval of the Permit to Take Water (PTTW) and its subsequent renewal of that approval. These include:

a) the MECP's failure to ensure compliance by CRH and its predecessor company with the terms and conditions of the PTTW; and
b) the inadequate MECP responses to complaints from local residents.

There has been no response to these concerns from the MECP, however there has also been no approval of the PTTW (which CRH applied for 2 years ago).

7) Recommendations

1) A moratorium should be placed on approvals of aggregate developments (including the Teedon Pit Extension), until a broader hydrogeological study of the Waverley Uplands is carried out which explicitly addresses the cumulative potential impacts of the numerous proposed aggregate operations on the groundwater flow system of the upland and the surrounding area.

2) The recommendations included in the April 23, 2018 report prepared by Wilf Ruland (P. Geo.) should be implemented as part of any renewal/extension of the Permit to Take Water for the Teedon Pit. CRH should voluntarily implement those recommendations as a gesture of good faith to the neighbours of the site, local community groups, and the nearby First Nations.

3) The wash ponds of the existing Teedon Pit should be impermeably lined, in order to eliminate the leakage of silty wash water into the Waverley Upland groundwater flow system.

4) The provision of information to the Community via the CRH website should be improved, by addressing the deficiencies outlined in Section 5 of this report (see above).

5) CLC meetings should resume, and be opened to presentations by outside technical experts - not just experts retained by CRH.

Signed on the 27th day of January, 2020

WRuland

Wilf Ruland (P.Geo.)

766 Sulphur Springs Road
Dundas, Ont.
L9H 5E3
Tel: (905) 648-1296
deerspring1@gmail.com