



15 October 2019

Ms. Faye Langmaid
Municipality of Clarington
40 Temperance Street
Bowmanville, Ontario L1C 3A6

Project No.: 209.40261.00000

Dear Ms.Langmaid:

RE: CLARINGTON TRANSFORMER STATION - PEER REVIEW FINAL REPORT

The purpose of this letter is to report on our activities on your behalf and at your direction in the above noted matter. This report covers the period of May 2018 to September 2019.

In this period few new issues have arisen, others remain ongoing. We speak to each of these in the following paragraphs, and include:

1. Annual Report Review (2018)
2. Deep Well Logistics
3. Liason with residents and private well requests

Over this reporting period, SLR Consulting (Canada) Ltd. (SLR) have attended Planning and Development Committee on June 4, 2018. There have been no further Community Liaison Committee meetings mandated since 2017. The Clarinton Transformer station has been on line for several years. The Enfield Transformer Station was put in service in May of 2019. As the site has been commissioned and is in operation, no further site visits have been requested of, nor conducted by SLR in the reporting period.

1.0 ANNUAL REPORT REVIEW

In the spring of 2019, SLR reviewed the 2018 Annual Monitoring Report prepared by Stantec Consulting on behalf of Hydro One. Consistent with recent years we have found that the monitoring programs were being followed as outlined. The monitoring results continue to reflect our understanding of the site, in that water levels were not affected by the presence of the transformer construction or its subsequent operation, and water quality was consistent with before. Similar to last year, this again includes the presence of bacteria and nitrate in many shallow wells, and also in some deep private wells. These are minor natural or anthropogenic exceedances of some parameters, which as we pointed out in 2018, is not uncommon in Southern Ontario.

2.0 DEEP WELL LOGISTICS

In 2016, Central Lake Ontario Conservation Authority (CLOCA) and Hydro One negotiated an agreement, which included the ability for the G360 group to drill an additional deep well (using roto sonic methods) for the purpose of installation of a multilevel well system. This system is to be used to study the aquitard, as a research opportunity. Clarington has previously committed funds to this project and therefore SLR have been called upon to assist staff by providing technical support.

G360, in collaboration with CLOCA drilled an 88 m deep borehole at the MW5-14 location between July 03 and July 09, 2019. Installation of the Multi-Level System (MLS) was conducted between July 10 and July 22, 2019. Technical reporting on the work is not yet available, however the following details have been ascertained. G360 did not use the Rotosonic technique as originally proposed due to rig unavailability, and opted for a rotary method using a DR12 drilling rig provided by Aardvark Drilling. This method does not provide undisturbed samples, but rather returns a slurry of soil and water. The drilling water and MLS installation water was tagged with bromide in a similar fashion to the 2015 drilling program conducted by Stantec on behalf of Hydro One.

An 8-port mutli-level groundwater monitoring installation was established between depths 50 and 85 m below ground level. The devices are currently recovering from installation, and until a static water pressure is achieved in each, testing will not be underatken. Once ready, they will be tested for hydraulic conductivity, and then initial groundwater samples can be taken. Six of the monitoring intervals are set in the lower portion of the glacial till aquitard where there are numerous sand lenses, and the two deepest ports are set in more permeable horizons corresponding to the underlying Thorncliffe Formation, (as established in the original drilling programs). No monitoring intervals were established in the more competent upper portion of the Newmarket Till. A Hydro One groundwater monitor (MW5-14-I) was previously established in this portion of the aquitard at about 40 m in depth. The intent of the devices is to provide long term monitoring capability of the aquitard, and they will be managed for scientific purposes by CLOCA.

We anticipate that G360 will report on their results and future monitoring results at some point in the future, and it is recommended that the Municipality examine those results at that time to see if they are consistent with the present understanding of the site.

3.0 RESIDENT LIAISON

No outreach from residents to SLR were made in the reporting period. No further requests from residents to review the reported results on their wells were received by SLR from Clarington in this reporting period.

We understand that two request were made of Stantec by a homeowners, one related to water quanity in September 2018, and one related to surface water flow in March 2019. Clarington/SLR were not asked to review the reports or responses.

4.0 IN CONCLUSION

We trust this report adequately covers the activities SLR has performed on Clarington's behalf. It is our opinion that there have been no adverse effects of the Transformer Station construction and operation on private wells for the reasons cited above. The existing groundwater monitoring program will conclude in October of this year (2019). It is our understanding that Hydro One has offered a two year extension of the private well monitoring program for interested residents. One final annual report, for 2019 is expected to be issued by Hydro One in early 2020.

The contract between Clarington and SLR originally set Oct 31, 2019 as it's end date. However, an extension will be required to complete the following areas :

- Review of the Habitat Creation work, once complete
- Review of the 2019 Annual report in 2020
- Review of the G360 results for consistency with the predicted conditions.

Thank you for allowing us to have been of service, please contact the undersigned should you or other reviewers have any questions.

Yours sincerely,
SLR Consulting (Canada) Ltd.



Steven Usher
Project Manager

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