

**re: Hydrogeological Review - Sewage System and Infiltration Pond**

**Proposed Warehouse (Phase 1)  
3713 Borriskoane Road - Ottawa**

**to:** Caivan Greenbank North Inc. - **Mr. Hugo Lalonde** - [Hugo.Lalonde@Caivan.com](mailto:Hugo.Lalonde@Caivan.com)

**date:** April 17, 2020

**file:** PH3959-MEMO.02

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Further to your request, Paterson Group (Paterson) has prepared the following memorandum to provide a hydrogeological review for the onsite sewage system and the proposed storm water infiltration pond in regards to the interaction with the future groundwater elevation. The current memorandum should be read in conjunction with Paterson report PH3959-REP.01 - Groundwater Impact Assessment dated December 12, 2019.

## **Background**

The City of Ottawa (City) provided comments regarding the Paterson groundwater impact assessment for the proposed development at 3713 Borriskane Road. The comments were provided for File No. D01-01-20-0001, D02-02-20-0002 and D07-12-20-0002 and dated March 24, 2020. The general comment to be addressed is related to a review of potential interaction between the construction of the proposed rural services and the Trail Road Landfill facility plume.

## **Sewage System**

The sewage system proposed location is within the east portion of the subject site. The inferred seasonal groundwater high values in proximity to the proposed septic tank is around 99 m elevation and is considered to be a perched condition due to localized native clay areas and fill material containing clay material. With the proposed development of the site requiring the removal of excess fill material, the perched groundwater elevation is anticipated to be lower at the time of construction.

The base of the proposed Anaerobic Digester tankage (consisting of a pre-cast 18,500 L concrete tank) is located at 99.5 m elevation. The secondary tank is located immediately east of the Anaerobic Digester and would have a base elevation of approximately 99.45 m.

Based on a review of the tankage for the sewage system, there is no interaction between the sewage system and the inferred seasonal high values.

## Infiltration Stormwater Management Pond

The infiltration pond is located towards the east end of the subject site. The inferred seasonal high groundwater elevations that were predicted for the area are noted to be above the proposed base of the infiltration pond at 97.5 m. As previously mentioned, the area is considered to have a perched groundwater condition due to underlying clayey fill material and a discontinuous clay layer. The Paterson geotechnical memo PG5155.MEMO.02 dated April 13, 2020 indicates that there will be exfiltration trenches and piping that extend to the east towards native silty sand areas to promote infiltration of clean captured water. As there is a noise berm that is required to be located at the east end of the property, the exfiltration trenches will extend beneath the berm to provide hydraulic access to higher hydraulic conductivity materials with inferred seasonal high groundwater contours of 96.5 m elevation. The area that will be receiving infiltration is inferred to be hydraulically connected to the middle aquifer and will provide recharge to this aquifer.

Due to the natural reduction in the perched groundwater condition, it is not expected that active dewatering will be required for the construction of the infiltration pond. As such, the construction of the infiltration stormwater management pond will not affect the Trail Road Landfill plume and future infiltration will provide further input into the middle aquifer. Considering the above information and the Paterson Groundwater Impact Assessment, the proposed development is considered to satisfy the hydrogeological component of Section 3.8 of the Official Plan.

We trust that this information satisfies your requirements.

Best Regards,

**Paterson Group Inc.**



Michael S. Killam, P.Eng.



David J. Gilbert, P.Eng.



**Paterson Group Inc.**

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