MERK ENGINEERING INC.

January 6, 2022

Good Storage Plus
620 Veteran's Drive
Barrie, ON
L4N 9J4

Attn: Mr. Greg Jackson

Re: **Proposed Addition – 620 Veteran's Drive 22126**

Dear Mr. Jackson,

Merk Engineering Inc. (**MERK**) was contacted by Mr. S. Charron on behalf of Good Storage Plus to assess the potential impact the construction of the building may present to the local groundwater and any wells within a 300 m radius of the site.

In this regard, the following documents were provided to MERK.

> Geospec Engineering (Report) *Geotechnical Investigation, 620 Veteran's Drive, Barrie, Ontario*, dated January 9, 2015.
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> MCL Architects (MCL) (Drawing A1.1) *Site Plan, Three Storey Storage Building, Mapleview Ave. & Veteran's Dr., Barrie, Ontario,* dated November 15, 2021.
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> Pearson Engineering (Pearson) (Drawing SG-1) *Site Grading Plan, Jackson's Toyota, 620 Veteran's Drive, City of Barrie,* dated September 2021.
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> Pearson Engineering (Drawing SS-1) *Site Servicing Plan, Jackson's Toyota, 620 Veteran's Drive, City of Barrie,* dated September 2021.

Background

The Geospec report included eleven boreholes that were extended to depths of approximately 3.5 meters below the ground surface (mbgs) and 5.0 mbgs. Three boreholes included standpipes extended to depths between 3.8 mbgs and 5.2 mbgs. The boreholes identified the soil in the proposed construction zone below surface cover and shallow fill to be compromised of sand at all boreholes and overlying clayey silt and sand at three boreholes. The report estimates the hydraulic conductivity of the sand to be good and all standpipes were found to be dry at the time of drilling and a follow up monitoring visit.

The MCL drawings establish that property includes an existing 1304 sq. m slab on grade, industrial building with Finished Floor Elevation at 309.90 m. A three-storey addition is proposed on the north and east sides of the existing building. The slab on grade floor area of the addition is 1740 sq. m.

The Pearson drawing SG-1 establishes the Finished Floor Elevation of the addition will be set at 309.30m. The addition will require one riser to descend to a slightly altered asphalt grade surface driveway and the parking areas to the north and east of the existing structure will remain. The SS-1 drawing establishes that the majority of the servicing will remain. A new storm sewer will be required along the north parking alignment with lowest invert at 307.06 m, approximately 2 mbgs, and connect to the existing storm service along the east side of the addition. The sanitary service will include a new MH to the northeast of the addition, with invert at 305.90 m, approximately 3 mbgs, that will be connected to an existing sanitary sewer line. Low Impact Development storm tanks or equivalent are to be included in the design near the southeast corner of the property.

Comments

The Ministry of the Environment, Conservation and Parks (MOECP) well records map was reviewed for wells within an approximate 300 m radius of the site. Two historical domestic wells were found beyond but close to the 300 m radius as depicted on the MOECP mapping. The wells identified as Well ID numbers 5701389 and 5701390. Well 5701389 was a 0.86 m diameter, low yield, crock domestic well extended to a depth of 11.3 m and completed November 19, 1963. Well 5701390 was a 0.1 m diameter, low yield, steel cased domestic well extended to a depth of 15.2 m and completed September 20, 1965. Two additional records of observation wells exist but both identified as abandoned.

It must be noted that old well records are often not accurately located on the MOECP maps. The wells described above are shown on the MOECP map to be north of King Street. King Street did not exist when these wells were constructed, and the wells were likely located further from the subject property nearer Salem Road. The closest current domestic properties to the subject site are greater than 750 m distant.

Conclusions

It is understood that the excavations for the foundations and servicing trenches will extend to a maximum depth of less than 4.0 mbgs. Groundwater was not observed to a depth of 5.0 mbgs in the boreholes.

Since no wells are known to exist within 300 m of the site and construction activities are not expected to encounter groundwater, it is unlikely the proposed addition will negatively impact the groundwater provided the development follows good construction practice including appropriate spill control and environmental protection practice.

Should you have any questions or concerns regarding this report, please do not hesitate to contact the undersigned.

Kind regards,

Kent Malcolm, P.Eng.
Senior Geotechnical Engineer