

Technical Review Memorandum



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To Glen McDonald, RPP, MCIP, Department of Science and Planning
From Claire Milloy, P.Geo., Department of Engineering and Regulation
Date April 29, 2021

File Maberly Pines Subdivision (Lakeside Living)
Tay Valley Township, Lanark County

Subject Private servicing

RVCA was asked whether the original hydrogeological investigation (1980s) for the registered but undeveloped Maberly Pines subdivision in Tay Valley Township provides sufficient information and guidance to ensure the suitability of groundwater quality as it now builds-out.

RVCA did not find any information to indicate that the groundwater will meet the current drinking water standards, objectives and guidelines (groundwater chemistry was not analysed). However, information and opinions are provided to indicate that the use of individual septic systems is not suitable on certain terrain units within the subdivision, and that best practices should be used on all other terrain units. As a result, RVCA provides possible approaches for the township to facilitate safer servicing at the site. The approaches are listed at the end of the memorandum before which several considerations are discussed as to better frame the circumstances.

The subdivision was originally planned for seasonal occupancy. This seasonality was one of the main concepts relied on to “guarantee the integrity of the groundwater supply”. However, given the current development climate, it is likely that all lots would now be permanently occupied; all new houses will be much larger than originally foreseen (cottage); and that secondary dwelling units will be permitted on each lot (e.g. AirBnBs). As a result, the aquifer will have **increased demand**. It will both supply more water than originally planned and will be loaded with additional (and only partially treated) septic effluent.

The original hydrogeology report indicates that most **well yields** were **low** in the area and that significant volumes should not be taken from the aquifer. However, no pumping tests were conducted on-site. This indicates that future lot purchasers are not guaranteed sufficient well yield and at minimum may need to rely on additional storage units etc. Further, this may constrain the feasibility/ sustainability of supplemental dwelling units.

The original report also indicates that specific development recommendations should be followed to ensure that wells do not become contaminated with septic effluent nor pond water (although these were not translated into a servicing plan.).

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Possible approaches

The first approach listed below would provide information to current standards and is therefore most technically suitable. Other approaches are provided given that the subdivision is already registered and there may be legal, time, process, and funding considerations for the township that preclude the best option. Options should be considered in light of any relevant planning and legal considerations of which the conservation authority may not be aware.

1) *recommended approach*

- Retain an experienced hydrogeologist to undertake a new investigation. The investigation would produce an addendum report that provides the missing information, a final private servicing plan, and revised/affirmed recommendations.
- The addendum would include the following parts: A summary of the original findings and all missing information; a review of the servicing outcomes at the 4 built-out lots (current groundwater quality, fulfillment of recommendations etc.); additional Procedure D-5-5 testing elsewhere in the subdivision; and confirmation of the available terrain assessment in light of Procedure D-5-4 requirements. (* the lots are predominantly hydrogeologically sensitive, so a detailed D-5-4 assessment would not be suitable. Best practices would have to be used, as originally recommended by WESA.)

2) *alternate approach A (minimum with water chemistry)*

- The township retains a hydrogeologist to obtain groundwater samples from the existing houses for laboratory analysis. The information is provided to future residents for their reference (without reference to specific addresses and names)
- The township establishes a private servicing plan to implement, as best as possible, WESA's recommendations, which include several best practices to address significant terrain constraints, including: **50 m** (and at least 30 m) separation distances between services (which should pertain to lot boundaries as well); and locating wells up-gradient from septic systems.
 - RVCA would also suggest increased casing depths, if the driller's think the yield is sufficient to facilitate this.
- The township informs each lot purchaser of the following. (or equivalent)
 - The well and septic systems should be constructed as per WESA's recommendations, which are above the minimums prescribed by the Ontario Building Code and the Wells Regulation. The recommendations were considered mandatory to protect drinking water quality and were to supersede preferences for house locations.
 - Well **yield may be marginal**. Additional in-house storage may be required or other measures.



- The drinking water quality was only tested at *township to insert locations here*. Therefore, well water should be tested for all parameters listed in the Lanark County subdivision or severance checklists, and for bacteria in accordance with public health guidance (3 times per year, at minimum)
 - Individual well and septic system owners are responsible for any well interference or contamination that they cause off of their property.
- 3) *alternate approach B (minimum)*
- The township establishes a private servicing plan, as above.
 - Inform each lot purchaser, as above and:
 - The drinking water quality was never tested. Therefore, well water should be tested for all parameters listed in the Lanark County subdivision or severance checklists, and for bacteria in accordance with public health guidance (3 times per year, at minimum).
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