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Attention: Gregg Furtney, Director of Operations

Lotowater Technical Services Inc. (Lotowater) understands that two additional services are being considered to the Municipal water system at Lake Rosalind. Currently there are 62 services and Council is asking if there is enough well capacity to accommodate the two more.

Lotowater is familiar with the two wells that service this system (Well 1 and Well 3) and has performed basic repairs and service on the wells since 2003. Lotowater has recently reviewed historical weekly aquifer levels and monthly pumping totals from each well from 2003-2018 and results of this are summarized with comments in Lotowater's 2018 Lake Rosalind well inspection and rehabilitation report that is attached. Based on the review of this historical information and, Lotowater's knowledge of the wells, Lotowater believes the existing well system can support the proposed two new services. Some of the key points supporting this conclusion are as follows:

- Since 2012, with a flow split with 70% from deep Well 3 and 30% from shallow Well 1, pumping from the wells has been able to support the Lake Rosalind system with levels above the pump inlet elevations. The wells have always had adequate submergence for operation over this time.
- Prior to 2012 levels had reached the pump inlet at Well 3 but this was at times when no pumping was occurring at Well 1. With the flow split between the two wells, like it has been since 2012, the wells appear capable of supporting demands without issue.
- Adding two additional connections, assuming a proportional increase in use, will increase usage by a modest 3%. Such increased pumping will not cause a significant increase in aquifer drawdowns that would cause a pump cavitation issue.

Note that there are several assumptions in this analysis and these are as follows:

- New property owners will use water at the same rate as the existing residences average usage over the last 7 years.
- Both wells remain in good working order and if they become damaged or need repair the repairs will be made promptly (within 2 weeks). Although one well may be able to supply the system for a short period of time there is evidence that one well operating alone will not be able to support normal demands. Both wells are required to support sustained operation.
- It's possible there could be extreme climatic conditions that could affect the availability of the water which isn't captured in the 16 years of records reviewed here. This may lead to reduced water supply in extreme circumstances.
- This analysis makes no assessment of the water treatment capacity, piping, pumping or other engineering limitations that may exist.

Additional information on the analysis is included in the 2018 Lotowater report which includes: strategies to optimize the usage of water between the two wells, recommendations for an automated monitoring systems to improve data collection and allow quicker response to level changes and repairs to improve the reliability of the wells.

If further information is required or if there are any questions please contact the undersigned.

Respectfully submitted,
Lotowater Technical Services Inc.

A handwritten signature in black ink, appearing to read 'Boyd Pendleton', written in a cursive style.

Boyd Pendleton P.Ge.
Vice President

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