

25-029

May 20, 2025

Municipality of West Grey 402813 Grey Road 4 Durham, Ontario N0G 1R0

Attention: David Smith Manager of Planning

Re: Peer Review Comments on Maximum Predicted Water Table and Hydrogeological Assessment Report Proposed Class 'A' Pit Above Water (JT Pit), JT Excavating Ltd. Municipality of West Grey, Grey County

Dear Sir,

As requested, this letter provides peer review comments by GSS Engineering Consultants Ltd. (GSS) on the November 2023 (revised) maximum predicted water table and hydrogeological assessment report prepared by GM BluePlan Engineering Limited (GMBP) for JT Excavating Ltd. for a proposed above the water table pit to be located at 382063 Concession 4 NDR in the Municipality of West Grey.

A copy of the hydrogeological assessment report was provided to GSS by the Municipality of West Grey, together with a copy of the February 26, 2025 summary statement for the proposed pit prepared by GEI Consultants Canada Ltd. GSS made reference to the summary statement only for information that was considered relevant to the peer review of the hydrogeological assessment report.

Comments

The following comments are provided on the hydrogeological assessment report.

 Groundwater levels at the site were reportedly measured on seven occasions in the period from February 23, 2021 to June 25, 2023, including measurements on April 7, 2021, March 24, 2022, and April 10, 2023. The report indicated that the high groundwater table elevation was expected to be consistent with the water levels measured on April 10, 2023, which were made following a period of significant snow melt and precipitation. The report recommended that the monitoring wells continue to be monitored during the pit application process so that direct measurement of the high water level could be confirmed and the pit floor elevation updated accordingly. We considered it likely that single-day measurements in late March/early April over three consecutive years were adequate to indicate the typical high water level at the site. However, a comparison between available precipitation data for the period of monitoring and typical precipitation levels for the area of the site should be provided to support the finding that the identified seasonal high water table was reasonably representative of typical conditions. The MNRF August 2020 Aggregate Resources of Ontario (ARO) standards for a maximum predicted water table report (updated in August 2023) defined the maximum predicted water table as the maximum groundwater elevation predicted by a qualified person who has considered conditions at the site and mean annual precipitation levels.

- 2. The approximate boundary of proposed extraction was shown on Figure 3 in the report, together with inferred contours for the surface of the estimated high water table. Two separate, irregularly shaped extraction areas were shown north and south of the central divide. The limits of extraction and the property boundaries were not shown on the crosssections on Figures 4A and 4B; the only references were two monitoring wells. In the last paragraph in Section 5. and a similar section in the Section 7. summary, approximate high water elevations were identified for the northeastern and southwestern portions of the property, whereas the corresponding minimum pit elevations, based on a 1.5 m separation from the high water table, were identified for the northeast portion of the area of extraction and the expected southwestern-most portion of the proposed extraction area. The water table surface defined by the contours shown on Figure 3 indicated a high water elevation of 292.4 m at the northeast corner of the proposed extraction area in the north half of the site, and a high water elevation of 289.3 m or higher along the western limit of the proposed extraction area in the south half of the site. Based on the minimum 1.5 m separation from the high water table identified in the report, the corresponding minimum pit floor elevations would be 0.4 and 0.3 m higher, respectively, than the minimum elevations indicated in the report. GMBP should explain that variance and confirm that the minimum separation distance identified in the ARO standards for an above water pit will be maintained for the water table surface defined by the contours shown on Figure 3 and depicted on the sections on Figures 4A and 4B over the entire extraction area as shown on the site plans.
- 3. The report noted that based on field observations and groundwater elevation data collected, the occurrence of surface water on the site (i.e., in the central saturated area) was expected to be consistent with the occurrence of the groundwater elevation. Surface water level monitoring data collected for the central ravine and wetland feature should be provided.
- 4. The report noted that since there are no proposed interactions with the water table or surface water features, the overall water budget, pre- to post-development, is expected to remain unchanged, and stated that equal infiltration to the subsurface will continue post-development. A water budget for the site was not presented. The main components of a

water budget are precipitation, losses from evapotranspiration, runoff, and infiltration. The proposed limits of extraction were not shown on the cross-sections in the report, and we did not see the site plans. However, the information provided in the report suggested to us that there would be no surface runoff from the pit created in the north half of the site and reduced or no runoff from the pit created in the south half of the site. A reduction in the existing runoff would change the water budget and result in a corresponding increase in infiltration. GMBP should provide additional information to support the conclusion that the water budget for the site will not be changed by the proposed development. If there is a potential for a change in the water budget, then the associated implications should be evaluated.

5. The report indicated that to maintain surface water flows to the same low-lying locations, the restored grades shall be sloped to maintain similar pre- and post-development catchment areas. The pre-development catchment areas were not identified, and it was not apparent how similar post-development catchment areas would be maintained for the proposed area of extraction. Additional information should be provided to indicate how that recommendation would be implemented.

We trust that these comments adequately respond to the Municipality's request.

Yours truly,

GSS Engineering Consultants Ltd.

W. Brad Benson, P.Eng. Senior Hydrogeologist

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