GSS ENGINEERING CONSULTANTS LTD

25-056

October 8, 2025

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

Attention: David Smith
Manager of Planning

Re: **Peer Review Comments on**
Combined Level 1 and 2 Hydrogeological Assessment
Redford Pit Expansion, Walker Aggregates Inc.
Municipality of West Grey, Grey County

Dear Sir,

As requested, this letter provides peer review comments by GSS Engineering Consultants Ltd. (GSS) on the July 2025 combined Level 1 and 2 hydrogeological assessment report prepared by Tatham Engineering Limited (Tatham) for Walker Aggregates Inc. for a proposed above the water table expansion of the Redford Pit to be located in the north half of Lot 20, Concession 5 NDR, Geographic Township of Bentinck, now 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 August 2025 site plans prepared by Skelton, Brumwell & Associates Inc. and the August 2025 Natural Environment Report – Level 1 and 2 prepared by Skelton, Brumwell. The site plans were examined primarily for information on the existing ground surface topography on the site and the natural environment report was examined primarily for information on existing wetlands located on and immediately adjacent to the site.

Comments

The hydrogeological assessment report was considered to be reasonably comprehensive. The following comments are provided for consideration and response as necessary.

1. Review of the report would be facilitated if details on the existing ground surface topography on the site were provided. Section 2.3 noted that topography and drainage contours of the

site were presented on Figure 3; however, that was a regional-scale plan with contours that were difficult to discern and no identified elevations. The concept plan included in Appendix A did not show existing topography for the proposed extraction area. The cross-sections shown on Figures 9 and 10 only connected the observation wells and did not show the existing ground surface profile. GSS referred to the August 2025 Existing Features plan (Drawing 1) for information on the ground surface topography on and adjacent to the site. No response is necessary.

2. Section 2.4.2 on MECP water wells noted that the identified domestic wells were anticipated to be screened within the sand and gravel aquifer. Section 6.2 on assessment of impacts noted that domestic wells located within 500 m of the site were situated within the overburden unit. The available water well records indicated that 6 of the 7 domestic wells identified in Appendix B of the report were cased into the bedrock and completed as open holes in the rock. The reported water found zones for the wells were in the bedrock. Tatham should indicate if this would have any implications for their assessment.

3. The seasonal high groundwater table was identified from continuous water level monitoring from March 2023 to March 2024 at five observation wells installed on the site. It is recommended that Tatham use available precipitation data to compare conditions in the vicinity of the site during the monitoring period with long-term normal precipitation data and comment on whether the identified seasonal high water table was likely to be representative of typical conditions. The MNR August 2023 Aggregate Resources of Ontario (ARO) standards for a maximum predicted water table report 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. A reference should also be provided for the daily precipitation data shown on the hydrographs.

4. In our opinion, installation and monitoring of shallow, drive point piezometers in the two on-site wetlands was warranted. Data from surface water and groundwater level monitoring at those piezometers could have been used in estimating the seasonal high groundwater contours for March 2023 shown on Figure 11. The cross-sections on Drawing 4 of the Skelton, Brumwell site plans indicated that a maximum predicted water table elevation of 289.76 m over the entire proposed area of extraction was used in identifying the minimum pit floor elevation, which was reasonably conservative. That water table elevation appeared to have been based on the highest recorded groundwater elevation at OW4, located near the northwest corner of the site. Under those circumstances, GSS considered it unlikely that the absence of water level monitoring data for the on-site surface water features would affect the proposed pit floor elevation. Nevertheless, it is recommended that a shallow, drive point piezometer be installed at a suitable location in each of the on-site wetlands and that groundwater and surface water level measurements at those piezometers in conjunction with the observation wells be included in the monitoring plan.

5. Section 5 of the report described a water balance that was completed for the site to compare existing infiltration rates to future infiltration rates. Details of the analysis shown in Appendix G indicated that the water budget was carried out for the 13.8 ha proposed extraction area.

The water balance summary shown in Table 7 indicated that runoff from the extraction area during the extraction and rehabilitation conditions would be reduced to 13,507 m^3 annually from the estimated existing runoff of 20,060 m^3. A corresponding increase was shown for the estimated infiltration. The Operational Plan (Drawing 2) indicated that drainage of extracted areas shall be contained on site and will infiltrate into the pit floor. Similarly, the Final Rehabilitation Plan (Drawing 5) indicated that drainage shall be contained within the rehabilitated pit and will infiltrate into the pit floor. That indicated to us that there would be no runoff from the completed pit. That interpretation seemed to be consistent with Section 6.3 of the report on potential interference with surface water features which indicated that there would be no drainage from the 0.14 km^2 extraction area. The water balance should be reviewed and updated as necessary, or details should be provided on how two-thirds of the existing runoff from the extraction area will be maintained. Predicted changes to the water budget on the site should be considered for potential effects on nearby surface water features.

6. Ground surface contours and drainage arrows shown on the Existing Features plan suggested that there would currently be no runoff from the area of a relatively large, enclosed depression in the west-central portion of the proposed extraction area. Tatham should indicate if that was considered in the water balance.

7. Section 6 noted that the site was situated between several licensed and/or proposed aggregate operations and therefore cumulative impacts of the proposed extraction and the surrounding operations on the local groundwater and/or surface regimes were considered as part of the assessment. The report did not indicate how potential cumulative impacts were considered. Information should be provided on how potential cumulative impacts were considered, particularly with respect to the linkage with the existing pit to the west.

8. Section 6.3 of the report noted that under existing conditions, the majority of the proposed expansion area drains east to the Saugeen River as sheet flow. The same section indicated that approximately 1.3 ha of the proposed expansion area currently drains south to a tributary of the Saugeen River, with four online, unevaluated wetland features. No details were provided on how that 1.3 ha drainage area was derived. The report identified the total catchment area of the tributary to be 87.4 ha and indicated that the effects on the tributary from a 1.3-ha reduction would be minimal. GSS inferred that Tatham identified the drainage area for the tributary using the MNR Ontario Watershed Information Tool (OWIT). A drainage area generated for the tributary by GSS using the OWIT indicated that the majority of the proposed extraction area drained south to the tributary and not east to the Saugeen River as indicated in the report. An explanation of the apparent inconsistency in drainage direction, and any associated implications for the assessment, should be provided.

9. In addition to an assessment of potential effects on the tributary as a whole, in our view the potential effects on the wetland located immediately south of the site should have also been considered. Using the MNR OWIT, GSS identified a drainage area of approximately 39 ha for the watercourse south of the site at a location where it flowed from the two closest wetlands to the site. More than a quarter of that drainage area was shown to be located

within the proposed extraction area. A substantial portion of the remaining drainage area was shown to be located on the adjacent property to the west that is currently being developed with a pit. Tatham should comment on the potential positive or negative effects on the wetlands from any substantial reduction in runoff and related increase in infiltration associated with the proposed and existing pits.

10. Section 2.3 of the report on topography, drainage, and surface water features noted the presence of an unevaluated wetland south of the site that receives a portion of the site runoff. The report did not mention the presence of the wetland located immediately north of the site or the two on-site wetlands. Those features were shown on the concept plan in Appendix A and described in the natural environment report. Ground surface contours and drainage arrows shown on the Existing Features plan indicated that runoff from a portion of the proposed extraction area currently drains to the north wetland. Comments should be provided on the potential positive or negative effects on the wetland north of the Site and the on-site wetlands from a reduction in runoff and related increase in infiltration.

11. Section 9 of the report on the recommended compliance monitoring program indicated that the results of the groundwater level monitoring program will be summarized in the annual compliance report prepared for the existing Redford Pit and submitted to the MNR on an annual basis. Section 11 on site plan recommendations did not indicate that the data would be evaluated and reported annually, nor did the recommendation on the site plans. The recommendations on the site plan should indicate that water level monitoring data will be evaluated and summarized in an annual report for submission to the MNR.

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

WBB/bb