F O R C E
Friends of Rural Communities and the Environment

OMISSIONS/GAPS/INCONSISTENCIES RE: PROPONENT'S PLANNING REPORT, APPENDIX 5 – WATER BUDGET AND APPENDIX 7 – PRELIMINARY HYDROGEOLOGICAL REPORT

1. No site water budget is provided for pre-operational, operational and post-extraction conditions.
2. The Preliminary Hydro-geological Report (PHR) is very preliminary given the significance of the issue of water quality and quantity. The PHR concludes that quarry extraction is feasible without completion of summer field studies, groundwater modeling, and despite the APPENDIX 6 observation that pump test stresses did not extend to the perimeters of the site, among other omissions and gaps.
3. The Planning Report and the PHR do not provide case histories for other deep Greenfield quarries located totally beneath the water table for comparison and contrast.
4. The PHR does not reference other local hydrogeology studies and communal wells.
5. Copies of well driller logs are not provided.
6. Figure 2 is apparently based on the MNR OBM DEM. The authors apparently did not utilize City of Hamilton DEM data. The well water locations are unedited and apparently do not include unlocated 999s. Domestic wells are underrepresented in the vicinity of the quarry despite accurate locations of residences and drinking water wells being critical to impact analysis. The number of water well users (120 records) plotted within 1 km of the site (p54) is not complete and information sources are undocumented. FORCE information, to date, indicates 122 well records within approximately 500m of the proposed quarry lands).
7. No information is provided on the source of well elevations used for static level contour generation in Figure 3. Are these MOE file elevations? Will well water locations and elevations be updated prior to groundwater modeling? Again, the authors apparently did not utilize City of Hamilton DEM data.
8. There is no evidence provided that the proponent obtained a temporary Permit to Take Water from the Ministry of the Environment for the test period.
9. Permanent off-site monitoring wells with data loggers were not established.
10. In Figure 4, no dates are provided for static level observations. The omission of Monitor Wells 2 and 5 and Production Wells TW 10, TW 11, TW 12 and TW 13 from the logs and report discussion is unexplained.
11. The authors have not considered the impact of the Carlisle pumping wells on the downgradient drawdowns.
12. No predictions of water quantity to be extracted from the quarry during Lift 1 or Lift 2 are provided.
13. The proponent has not provided assessment of quarry dewatering, quarry operations, quarry discharge, or haul routes on water quality.
14. The Planning Report and the PHR do not provide any technical support for the quarry rehabilitation water levels proposed in the Planning Report and Extraction Site Plans. Nor do they indicate how these water levels will be maintained under

increased surface evaporation conditions versus the pre-extraction recharge regime.

15. The PHR does not address the significance of the site recharge to Bronte Creek headwater streams.
16. The PHR does not address the hydro-geological impacts on the now Stonebrook Estates and whether removal of servicing development conditions would be impaired by approval of the proposed quarry.
17. In Appendix A, copies of the original drillers' logs and tabular print-out of the digital record are not provided.
18. In Appendix B, the relationship between APPENDIX 5 and APPENDIX 7 borehole log recoveries and RQDs is unexplained. Logs are missing for a number of monitoring and production wells illustrated on Figures 4, 5, and 6. Observations of fracture staining and clay coatings have been omitted.
19. In Appendices C and D, the source and benchmark references for borehole and piezometer elevations have not been provided.
20. In Appendix F, the pump test results at more distant monitoring stations appear to have been complicated by other factors, i.e. precipitation/recharge events, during the tests. There is no discussion of same in the report.