FREEFIELD LTD.
Ottawa, Ontario, Canada

MEMO

To: **Lanark County**
99 Christie Lake Road,
Perth, Ontario

Attn: **Mike Dwyer,**
Planning Manager, Lanark County

Cc: **Phil White** PWhite@thomascavanagh.ca
Thomas Cavanagh Construction Limited

From: **Michael Wells** michael@freefieldacoustics.com
Director | Freefield Ltd.

Date: 5th September 2025 No. Pages: 8 (including this page)

RESPONSE TO THE PEER REVIEW OF THE ACOUSTIC ASSESSMENT FOR THE PROPOSED HIGHLAND LINE PIT LANARK HIGHLAND TOWNSHIP, ONTARIO

Dear Mr. Dwyer,

Please find below our response to the Peer Review by Jade Acoustics, dated 14 April 2025 of the "Acoustic Assessment for the Proposed Highland Line Pit, Lanark Highland Township, Ontario", dated 23 September 2022, prepared by Freefield Ltd. (Freefield) on behalf of Thomas Cavanagh Construction Limited.

Referenced Documents:

- Freefield Ltd., *"Acoustic Assessment for the Proposed Highland Line Pit Lanark Highland Township, Ontario",* 23 September 2022 (AAR) – previously circulated.

- Jade Acoustics, *"Acoustic Assessment Peer Review Highland Line Pit, Part of Lot 5, Concession 10, Lanark Highland Township, Lanark County, Ontario, Pit Licence Number 626599, (Jade) File: 25-016",* 14 April 2025 (Peer Review 1).

- Freefield Ltd., *"Acoustic Assessment for the Proposed Highland Line Pit Lanark Highland Township, Ontario", 5th September 2025* (Updated AAR) – forwarded separately.

This Memo addresses the comments raised in Peer Review 1 and where applicable provides a summary of how the comments are addressed in the Updated AAR.

Generally, the comments raised in the Peer Review 1 are summarised in the thirteen points presented in the "Noise Comments" section, Pg. 2 and 3, hence, this response addresses these thirteen points.

In addition, this response addresses the additional comment raised in Peer Review 1, "Conclusions and Recommendations", section, pg. 4, as regards an analysis of the off-site haul route. Refer to Item 14 below.

For all responses, the Peer Review 1 comments are shown in *italics* and numbered for ease of reference.

Additional changes incorporated in the Updated AAR are noted as additional changes following the Peer Review Response. Refer to Item 15 below.

To address the comments raised in Peer Review 1 and additional changes noted in Item 15, the acoustic modelling was adjusted and re-run. Generally, the difference in calculated sound levels were small, however, the importance of addressing the issues raised is acknowledged.

As a result of the updated acoustic modelling, the AAR has also been updated as contained in the Updated AAR.

Peer Review 1 – Noise Comments - Item 1:

1. *On page 6 of the report, there are references to 24-hour excavation activities. Based on the analysis and report, the excavation activities are expected to occur only during the daytime hours between 7:00 a.m. and 7:00 p.m. The time when excavation activities take place should be confirmed.*

Freefield Response:

1.1 Excavation (extraction) activities shall occur only during the daytime period (07:00 – 19:00).
1.2 The AAR has been updated to address this comment. Refer Updated AAR, Section 2.0, pg. 6.
1.3 See also "Additional Changes", Item 15.3 below.

Peer Review 1 – Noise Comments - Item 2:

2. *It seems that an Extraction Area 1 crushing and screening operations concurrently with extraction occurring close to POR 2 scenario may need to be assessed in addition to the nine (9) operation scenarios analyzed in the report. The acoustic consultant should advise if the current report is sufficient to ensure that the applicable sound level limits are achieved at the affected noise sensitive receptors at all times during the operation activities.*

Freefield Response 2:

2.1 Freefield confirm extraction closest to POR 2 is not a worst case given the height of the lift face; however, the AAR has been updated to include this additional scenario.
2.2 The AAR has been updated to address this comment. Refer to Updated AAR, Scenario 10 and 11, Section 6.0, pg. 11 - 12 and corresponding Figures and Tables.

Peer Review 1 – Noise Comments - Item 3:

3. *Many sound pressure levels included in Table 6 are not consistent with the sound pressure levels predicted in the CadnaA acoustic model. Additional information regarding the discrepancies would be appreciated.*

Freefield Response 3:

3.1 This relates to the additional modelling carried out to address public comments.
3.2 The AAR has been updated to address this comment. Refer Updated AAR, Table 6.1 and 6.2, pg. 22 - 25.

Peer Review 1 – Noise Comments - Item 4:

4. *Based on Table 7 and Table A2.4, the required sound barrier heights for Barrier SP1 and Barrier CP1 are 4 m and 10 m, respectively. In the CadnaA acoustic model Scenario 1, Barrier SP1 is shown to be an 8 m high sound barrier. Barrier CP1 is shown to be a 12 m high sound barrier in the acoustic model. The sound barrier requirements should be clarified. The 4 m and 10 m high sound barriers are also shown on the Operations Plan. Once the height of the sound barriers is clarified the Operations Plan should be updated as necessary.*

Freefield Response:

4.1 Freefield confirms the required sound barrier heights for Barrier SP1 and Barrier CP1 are 4 m and 10 m, respectively.
4.2 The acoustic model, accompanying this response, has been updated to address this inconsistency.

Peer Review 1 – Noise Comments - Item 5:

5. *Similar to the information shown on Figure 23, we would suggest that Figures 22, 24 and 25 include the required sound barrier heights.*

Freefield Response:

5.1 The AAR has been updated to address this comment. Refer Updated AAR, Figures 23 – 27, pg. 53 - 57.

Peer Review 1 – Noise Comments - Item 6:

6. *The number of daytime trucks shown for some line sources in Table A2.3 is not consistent with the number of daytime trucks included in the CadnaA acoustic model. The information should be clarified.*

Freefield Response 6:

6.1 This relates to the additional modelling carried out to address public comments.
6.2 The AAR has been updated to address this comment. Refer Updated AAR, Table A2.3, pg. 63.

Peer Review 1 – Noise Comments - Item 7:

7. *Based on Appendix 4, the generator 1/1 octave band sound power levels are A-weighted. The same sound power level magnitudes are considered to be linear (not A-weighted) in Table A2.5 and as such used in the CadnaA acoustic model. The potential impact on the predicted sound levels should be assessed and, if needed, the noise calculations should be updated.*

Freefield Response 7:

7.1 The acoustic model and AAR have been updated to address this comment. Refer Updated AAR, Table 6.1 and 6.2, pg. 22 - 25, and accompanying acoustic modelling file.

Peer Review 1 – Noise Comments - Item 8:

8. *In Tables A2.7.1 to A2.7.9, some sound pressure levels shown are not consistent with the sound pressure levels predicted in the CadnaA acoustic model. Even though, the differences are not significant we would ask the acoustical consultant to clarify the predicted sound pressure levels.*

Freefield Response 8:

8.1 The AAR has been updated to address this comment. Refer Updated AAR, Table A2.7.1 to A2.7.10, pg. 66 - 70, and accompanying acoustic modelling file.

Peer Review 1 – Noise Comments - Item 9:

9. The analysis does not include reflections. While we do not anticipate that including reflections will alter the results, we recommend that at least one order of reflections be included in the analysis.

Freefield Response 9:

9.1 The acoustic model and AAR have been updated, to include three orders of reflection, to address this comment. Refer Updated AAR, Table 6.1 and 6.2, pg. 22 - 25, and accompanying acoustic modelling file.

Peer Review 1 – Noise Comments - Item 10:

10. The report incorporates attenuation due to intervening trees/foliage. Applying this correction should also take into consideration the times of the year when the deciduous trees do not have any foliage. The analysis and noise report should be updated accordingly.

Freefield Response 10:

10.1 ISO 9613.2 provides for the attenuation of sound during propagation through foliage where the foliage is sufficiently dense to block the view (line of sight) along the propagation path. The foliage surrounding the proposed Highland Line Pit is a mix of deciduous and evergreen trees. Photo 1 below, shows a view, taken from Google Street view, of the surrounding foliage during a period when the trees have generally lost their foliage. It can be seen that even at this time of year, the line of sight is blocked over a relatively short distance. In all cases the path of sound propagation through foliage included in the acoustic modelling for the highland line Pit far exceeds this i.e. generally 70 m or greater.

10.2 **Photo 1: View northwest at intersection of Highland Line and Anderson Lane**

Peer Review 1 – Noise Comments - Item 11:

11. There are several receptors assessed adjacent to Barbers Lake. The analysis has correctly accounted for the reflective nature of the water surface. It should be noted that the acoustic modelling and the guidelines do not require that any other effects (e.g. amplification) of sound propagation over water bodies be accounted for in the noise assessments.

Freefield Response 11:

11.1 Noted.

Peer Review 1 – Noise Comments - Item 12:

12. One of the receptors assessed in the analysis is Wheelers Pancake House and Sugar Camp (receptor POR 7). The building and an area of 30 m around the building is required to be assessed as per the guidelines. This has been appropriately assessed.

Freefield Response 12:

12.1 Noted.

Peer Review 1 – Noise Comments - Item 13:

13. For completeness, we request that the updated report include the unmitigated sound levels at each receptor.

Freefield Response 13:

13.1 The AAR has been updated to address this comment. Refer to Updated AAR, Table 6.1, pg. 22, showing the predicted unmitigated sound levels at each receptor.

Peer Review 1 – Conclusions and Recommendations – (Item 14) Re: Analysis of off-site haul routes:

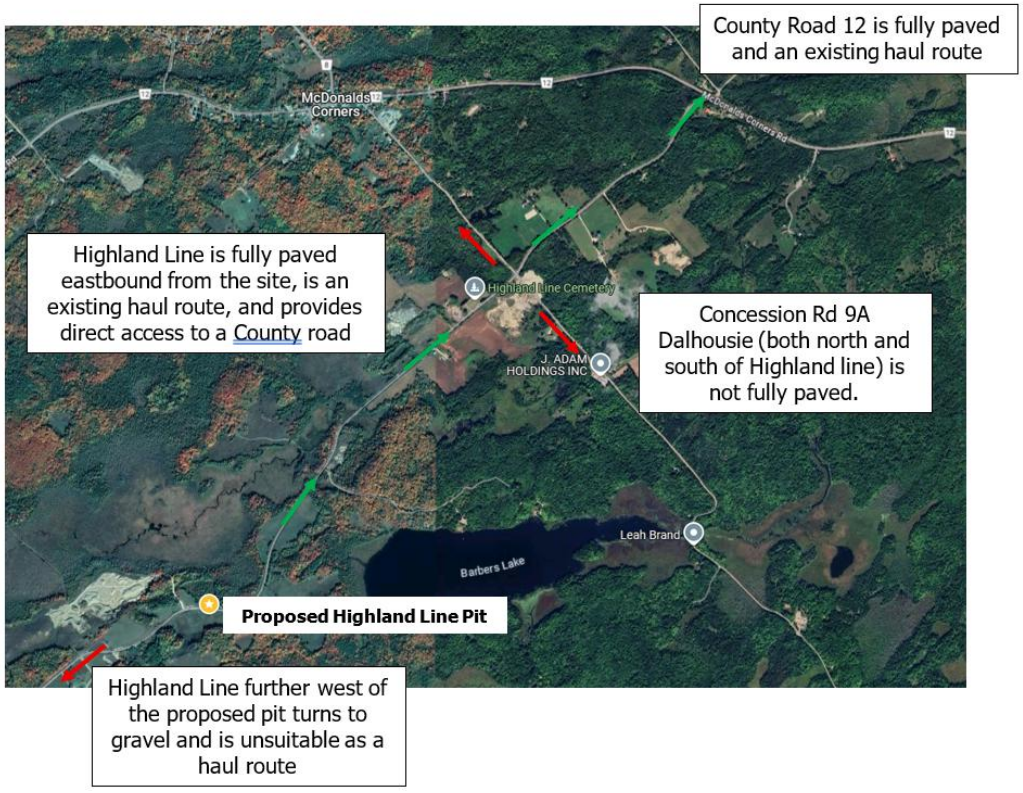
14. As discussed with the municipality, for completeness, an analysis of the off-site haul routes should also be included in the updated noise report.

Freefield Response 14:

14.1 An analysis of the off-site haul routes is typically carried out for new sites not on an existing haul route in order to analyse alternative routes to determine the haul route with least impact. The proposed Highland Line Pit is located on an existing haul route.

14.2 Irrespective of this, the proposed off-site truck traffic (off-site haul route) will travel east on Highland Line for approximately 2.7 km before connecting onto County Road 12. This is a significantly shorter haul route with far fewer residences, potentially impacted, compared to the alternative options. Given that the residential dwellings, in both east and westerly directions from the site, are at similar setbacks from Highland Line, the proposed haul route represents the haul route with the least impact. The proposed off-site Haul Route is shown on Figure 1 below.

14.3 Figure 1: Showing proposed haul route and Analysis of Alternative Routes (Source: MHBC)



14.4 To further address the public concerns related to truck traffic on Highland Line, the proposed hours of operations have been reduced to daytime hours only (07:00 – 19:00), and the maximum number of trucks (loads) leaving the site per hour has been reduced from thirty (30) to fifteen (15) per hour in total. Refer to Updated AAR, Section 2, pg. 6.

Additional Changes – Item 15:

15. Additional Changes:

15.1 The wording in Section 7, Item 7.3.1.3, has been updated to address MNR comments. This change was included in a previous update to the AAR that was submitted for the MNR in support of the license application. Refer to Updated AAR, Section 7, Item 7.3.1.3, pg. 13.

15.2 Additional receptors, POR 14 and POR 15, located on the opposite shore of Barbers Lake, have been included in the Updated AAR to address public comments. In addition, the results presented in Table 6.1 and 6.2 include the effects of Barbers Lake being modelled as one hundred percent reflective with an absorption co-efficient of 0.0. These changes were incorporated in the previously circulated acoustic model, however, where not reflected in the results presented in the AAR. Refer Updated AAR, Table 1, 6.1, 6.2, Figures and Appendix 2. pg. 18, 22 – 25, 30 – 52, 61, 66 - 72.

15.3 The proposed hours of operation have been changed to the MECP defined daytime period only (07:00 – 19:00) to address public concerns related to truck traffic. Refer Updated AAR, Section 2.0, pg. 6.

It is our understanding that we have addressed all the comments raised in the Peer Review 1. Nevertheless, please contact us if any questions arise.

Yours sincerely,

Professional Engineers Ontario 5th September 2025

Limited Engineering Licensee

Name: M. A. WELLS
Number: 100542557
Limitations: Environmental acoustic assessments and recommendations to mitigate noise and vibration; acoustical engineering services for land-use planning, architectural and building acoustics, industrial acoustics, and occupational health and safety audits.

Association of Professional Engineers of Ontario

Michael Wells,
Limited Engineering Licensee, Professional Engineers Ontario, Registered Architect of NSW,
B. Architecture (Hons), B.Sc. Arch.,
Member, Canadian Acoustical Society, Member, Australian Acoustical Society (M.A.A.S.)