May 27, 2025 Project No. CA0052471.8726

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BENTINCK GRAVEL PIT – NOISE IMPACT STUDY PEER REVIEW

WSP Canada Inc. (WSP) was retained by the Municipality of West Grey (the Municipality) to conduct a peer review of the Noise Impact Study (NIS) prepared by Valcoustics Canada Inc. (Valcoustics), dated August 17, 2023 for a proposed gravel pit at 382063 Concession Road 4 NDR, in the Municipality of West Grey, Ontario (the Site). This letter summarizes WSP's peer review comments.

1 BACKGROUND

WSP understands that the Site as per Operations Plan provided by GM BluePlan Engineering dated September 3, 2022, will include 35.72-hectare area to be licenced and the area of extraction will be approximately 20.7 hectares. It Is understood that the applicant is seeking a Class "A", Category 3 licence. The Site is located approximately 1.2 kilometres west of Mulock Road, 0.4 kilometres east of Allan Park Road, 1.2 kilometres south of Concession Road 6 NDR and immediately along Concession Road 4 NDR.

The Site is currently zoned Agriculture (A1) and Natural Environment (NE) as per West Grey municipal zoning by-law 2006-37. As per Grey County Property Report, the current use is a farm without residence and with secondary structures (farm outbuildings). On-site vacant agricultural buildings are proposed to be removed prior to commencement of extractions, and no new buildings or other structures are proposed as part of aggregate operations.

The applicant is seeking to license the Site to be able to extract and ship up to 200,000 tonnes annual, utilizing the existing entrance/exit as a haul route with an extension into the Phase 1A area as needed. No extraction below the water table is proposed.

As per the Operational Plan, the proposed gravel pit operations will be from 07:00 am to 7:00 pm, Monday to Friday and 9:00 am to 2:00 pm on Saturday with no Sunday operations. Potential portable equipment to be used on-site for daily operations as per Operational Plan may include: hydraulic excavators, hydraulic hammer, dozers, loaders, skid steers, grader, crusher, screener, generators, air compressors, and trucks. Valcoustics completed a NIS to support this proposed development.

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2 VERSION HISTORY

The history of the reports submitted to the municipality and the Peer Review on the submitted studies are noted in Table 1 below.

Table 1: Version History

Date	Title	Company
August 17, 2023	Bentinck Gravel Pit – Noise Impact Study	Valcoustics Canada Inc.
May 23, 2025	Bentinck Gravel Pit – Noise Impact Study Peer Review	WSP Canada Inc.

3 PEER REVIEW COMMENTS AND RESPONSES

WSP's comments on the Noise Impact Report (NIS) are the following:

Section 1.0 Introduction

1) The NIS mentions that the purpose of the NIS is to identify potential noise sources, predict resulting sound levels of the proposed pit at noise sensitive receptors and recommend mitigation measures to meet Ministry of the Environment, Conservation and Parks (MECP) environmental noise guideline limits, where required. WSP agrees with that statement and that the applicable noise guideline for Ontario, the MECP NPC-300 was used. *No response required.*

2) WSP notes the NIS does not mention it reviewed and considered the West Grey Noise Control Bylaw No. 55-2016. *Please confirm this Bylaw was considered and how it could impact site construction or operation activities.*

3) The NIS correctly defines a noise sensitive land use, a noise sensitive commercial building, noise sensitive institutional building, noise sensitive zoned vacant lot as per MECP NPC-300. *No response required.*

4) WSP agrees with the closest noise sensitive receptors chosen for the NIS: existing single-family dwellings to the east, south and west, Camp McGovern to the north, and vacant noise sensitive lands to the east and west. *Please provide justification as to why outdoor points of reception were not used in the modeling analysis.*

Section 2.0 Programme of Operation

5) The NIS accurately reflects the Operational Plan provided GM BluePlan Engineering regarding the aggregate extraction phases and the direction it will proceed. *No response required.*

6) The NIS mentions that equipment to be used on site including a processing plant (crusher, screen and stacker(s)), front end loader and shipping trucks, however the Operational plan mentions the following equipment: hydraulic excavators, hydraulic hammer, dozers, loaders, skid steers, grader, crusher, screener, generators, air compressors and trucks. *Please provide a rational for not including all equipment listed on the Operation Plan. All sources that could operate on site should be considered in the NIS.*

7) The NIS based the truck traffic from a traffic study prepared by Paradigm and was included as Reference 9 in the NIS, however not included in an Appendix to verify numbers used in the NIS. *Please provide copy of the Traffic Study or pertinent sections should be included as an attachment to the NIS.*

8) WSP notes that the NIS did not address the noise impact of the truck traffic on public roadways. *Please update provide haul route analysis or provide justification why it was not conducted within this NIS.*

9) The NIS mentions that all extraction, processing and shipping activities will occur at the bottom of the extraction face with a lift height of 5 m, this aligns with the Operational Plan provided where it mentions that extraction is to be completed in one lift, except where excavation depths exceed 5 metres, then they will be completed in two lifts. *No response required.*

Section 3.0 Environmental Noise Guidelines

10) WSP notes that the criteria listed in the NIS is the correct noise guideline for land use planning for Ontario, the Ministry of the Environment, Conservation and Parks (MECP) NPC-300. *No response required.*

11) WSP agrees that the predictable worst-case impacts should be determined and assessed to evaluate and recommend mitigation if required. *No response required.*

12) The NIS modelled all noise sensitive receptors at a height of 4.5 m, representing the upper floor of a two-storey dwelling/cabin. *Please confirm that the outdoor area (i.e. located within 30 m of the structure) were reviewed and the elevated receptor was the worst-case scenario.*

13) The NIS correctly defines what a Class 3 area is, and WSP agrees that classifying the identified receptors as being in a Class 3 area is appropriate. *No response required.*

14) WSP notes that the sound level limits listed in Table 2 of the Noise Report were correctly taken from NPC-300 for steady-state noise sources for Class 1, 2, and 3 for plane of window or outdoor points of reception. *No response required.*

15) WSP notes that the sound level limits listed in Table 1, 3, 4 and Figures 3A, 3B, 4A, 4B, 4C, 5A, 5B and 5C of the Noise Report were correctly taken from NPC-300 for steady-state noise sources for Class 3 for plane of window or outdoor points of reception. *No response required.*

16) The NIS also correctly identifies that if background levels exceed the exclusionary limits, then that background sound level becomes the criteria. However, for this assessment the MECP exclusionary limits (Class 3 as shown in Table 1) were applied. *No response required.*

17) The NIS correct defines construction and stationary source as defined by NPC-300, and that as per NPC-300 temporary construction activities are not considered stationary sources when MECP approvals are required or when land use approvals are required. *No response required.*

18) The NIS correctly lists typical temporary construction activities that can occur at pits such as site preparation, construction of access roads and infrastructure, construction of noise mitigation features and rehabilitation as being excluded from stationary noise source assessment for land use planning. The NIS correctly points to MECP Publication NPC-115, of which any equipment used for those activities must comply with the sound level limits outlined in the document. WSP agrees with the recommendations that these types of construction activities (i.e. site preparation and rehabilitation) should satisfy the noise emission requirements of the MECP document NPC-115 and that the work activities should be restricted to daytime hours (i.e. 07:00 – 19:00) only. *No response required.*

19) WSP notes that the West Grey Noise Control Bylaw No. 55-2016 includes restrictions on the times during which construction activities may occur construction is prohibited between 2300 an 0600. The NIS recommended that the construction activities should be restricted to daytime hours which would align with these strictions. *No response required.*

Section 4.0 Assessment

20) WSP agrees with the statement that the NIS assessment can exclude construction activities (i.e. site preparation and rehabilitation) in accordance with the MECP noise guidelines. *No response required.*

21) The NIS accurately reflects the proposed operational hours based on the Operational Plan provided. *No response required.*

22) As per the assessment the worst-case operations at the pit include: one (1) front end loader operating at the bottom of the working face, one (1) front end loader operating at the processing area, crushing and screening plants and associated equipment (i.e., conveyors, stacker, etc.) in the processing area, truck traffic which includes a haul route between the working face and the processing area, and then shipping trucks between the processing area and offsite. *As noted above, please provide reasons for not including all equipment listed on Operation Plan.*

23) The reference sound power levels that were listed in Table 2 of the NIS for the front end loader and processing plant were based on measurements of similar equipment. *No response required.*

24) The NIS refers to Reference 9 for the sound level data for the Shipping Trucks. Reference 9 refers to *""Transportation Study: Proposed Burnstead Pit, Concession 4 NDR, Grey County" prepared by Paradigm Transportation Solutions, dated December 16, 2021". Please confirm the reference is correct. Does the Transportation Study provide sound level data for the Shipping Trucks?*

25) The NIS considered a single worst-case location for all the processing plan equipment with a combined sum sound power level of all equipment. *Please confirm that includes the equipment as noted on the Operational Plans provided in the Appendix such as the generator, air compressors and hydraulic hammer*

26) For the results presented in the NIS to be representative, the sound emissions of the processing plant will need to meet the levels presented in Table 2 of the NIS. WSP agrees that an acoustic audit should be preformed to confirm that the equipment sound levels as outlined in Table 2 are not exceed. *No response required.*

27) The location of each piece of equipment varied on which Phase of extraction was being assessed as displayed in Figures 3A to 5C. *Please confirm that various iterations of locations were assed for each Phase to determine the worst-case location was used in that analysis, as the modelling is not available, WSP cannot confirm the actual locations assessed corelated to the worst-case location. WSP notes that only Phases 2, 4 and 5 were assessed. Please provide justification as to why Phases 1 and 3 analyses were not conducted or shown within the NIS.*

28) The heights above grade of which were used for the loaders and the processing plant was 2.5 metres and 3.5 metres, respectively as shown in the Appendix B. *No response required.*

29) The speed considered in the NIS was 20 km/hr as per provided in Appendix B of the NIS. *Please confirm this will be the noted speed limit onsite and consistent with what was used in other assessments (i.e. air quality) and that a lower speed limit is not posted as a means of dust control.*

30) WSP reviewed the number of haul trucks used in the analysis (Appendix B, ID: TRKS_P1, P2, P4, P5), the number of haul trucks going from the working face to the processing plant vary between phases. As per Section 4.0 in the report, it was mentioned that there was only up to 5 loads of aggregate that could be hauled to the processing area in an hour, which would mean 10 haul truck pass bys, however the analysis shows 20 haul truck pass bys during Phase 1, 2 and 4, however only 10 during Phase 5. *Please confirm the number of haul trucks.*

31) WSP reviewed the number of shipping trucks used in the analysis (Appendix B, ID: TRKS_ALL), the number of shipping trucks going entering the site, loaded with aggregate, then leaving the site in the same hour is 5 trucks, with 10 pass bys which aligns with what is mentioned in Section 2 and Section 4 of the NIS. *No response required.*

32) Calculations were performed using the predictive computer model CADNA/A software (version V2023 MR1) which uses the implementation of International Standards Organization (ISO) Standard 9613-2:1996. WSP notes that the noise prediction model used in the assessment is consistent with industry practice. *No response required.*

33) The NIS noted that topography (for site was taken from Operation Plan and surrounding area taken from Grey County interactive map), ground attenuation absorption parameters (hard ground (pit, river, paved areas/roadways) as 0 and soft ground (everywhere else) as 1) were taken into account. *Please provide confirmation on what order of reflection was used in the analysis.*

34) The NIS mentions that it used the CadnaA feature “foliage” for existing woodlots at a height of 12 m. WSP notes this was not shown in any figure which woodlots this feature was used for. WSP also notes that in past discussions with the MECP noise review engineers regarding the use of the foliage feature in CadnaA, that this feature needs to be used with caution. It should only be used if the consultant can confirm the noise model represents the actual expected performance of the predictable worst-case conditions (i.e. when foliage is minimized). *Please provide a map illustrating the extent of the woodlots considered. Please provide technical justification for the height of 12 meters, location and size of the woodlot and for using the foliage feature in CadnaA to be representative of conditions that could occur throughout the year.*

35) The noise emissions as noted above were modelled as either; a stationary point source (e.g. loaders, processing plants) or as a line source (e.g. haul routes). As the processing plant includes multiple pieces of equipment, and considering a barrier installed local to the processing plant is required to mitigate noise levels at various receptors. *Please provide justification on the appropriateness of modelling the processing plant as a point source. What is the distance of the barriers to the processing plant?*

Section 5.0 Results

36) The NIS provides the predicted worst-case noise impact from the proposed facility operations during Phase 2, 4 and 5 due to stationary steady state sources on the nearby sensitive receptors as shown in Table 3. WSP notes that modelling files for all Phases and receptors were not provided for verification, however a sample partial level calculation was provided in the back and based on information provided in the report that seem to reflect the levels for R1. *No response required.*

37) WSP agrees that the results shown in Table 3 for Phase 2, 4 and 5 are in excess above the MECP NPC-300 Class 3 daytime (as noted in Operational Plan only proposed to operate during the day) limit at four (4) existing receptors R5 to R8, and both vacant lot receptors R10 and R11 thus requiring mitigation recommendations. It is noted that modelling results were not provided for Phase 1 and 3. *Please provide.*

38) Figure 4A in the NIS is to reflect facility operations during Phase 2 with the two (2) noise barriers as recommended in Section 5 of the report while operating in Phase 1 or 2 for the existing receptors, however it also shows the additional 4 m barrier along Phase 5. *Please confirm that this barrier along Phase 5 is not included in the analysis for Phase 1 or 2 and is only needed while conducting operations Phase 5.*

39) Figure 4B and Figure 4C display the predicted sound levels during facility operations during Phase 4 and 5, and it includes all three (3) noise barriers recommended in Section 5 for the existing receptors. The interpretation is that the first two (2) barriers along Phases 1 and 2 remain during all phases and that the barrier along the west side of Phase 5 is added to the start of any work in Phases 3 to 5. *Please confirm.*

40) Figures 5A to Figures 5C display the predicted sound levels during facility operations during Phase 2, 4 and 5 and it includes five (5) noise barriers recommended in Section 5 for the vacant lot receptors, however it also includes the additional 4 m barrier along west side of Phase 5 and 17 m high barrier along east side of Phase 3 and 4. *Please confirm that these barriers are necessary as indicated in Section 5 of the NIS while conducting operations in all Phases if a noise sensitive use is built on either of these lots, and please indicate which barriers are required for each individual lot.*

41) Barriers of 10m and 17m in height are referenced I the NIS. These are extensive barriers. *As requested above, at what distance from the equipment are these barriers required? In Section 5.1.1 it is stated that earth berms can be used. Can earth berms be installed within the required distance such that the crest is located within the required distance? If the author identifies certain barrier construction are not practical for certain required barriers, it should be identified in the NIS.*

42) *Please confirm if the extraction face was used as a shielding feature in the noise modelling. If it was, please provide the distance considered between the source and working face. Will this need to be maintained for the entirety of the life of the Pit? How will it be ensured that these operating distances to the working face will be maintained?*

43) The NIS provides the predicted worst-case noise impact from the proposed facility operations during Phase 2, 4 and 5 due to mitigated stationary steady state sources on the nearby sensitive receptors as shown in Table 4. WSP notes that modelling files for all Phases and receptors were not provided to verify, however noise levels were provided on Figures 4A to 5C for the various receptors (existing/vacant) mitigation scenarios. *No response required.*

44) The NIS recommended several barriers in Section 5 providing location and heights and Phase of operation and are displayed in Figures 4A to 5C. WSP recommends that barrier heights and lengths should be reviewed if there is a change in the design or grade elevations. *Please clarity during what Phase of the development the barrier should be installed and for which receptors it is required. This would be helpful perhaps in a table format, as currently; the figures and report do not align.*

45) The NIS accurately defines an acoustic barrier as per MECP guidance, and what it should be comprised of. *Beyond the request made above, no further response required.*

46) WSP notes that the recommendations laid out in Section 5 are to be included into final Site Plans. *No response required.*

47) WSP agrees that back-up beepers can be a source of nuisance complaints and agrees with the suggestions provided within the NIS as a way to reduce complaints. *No response required.*

48) WSP agrees that if haul-routes are designed to minimize the need for reversing, it will minimize the use of back-up alarms which are also a source of nuisance complaints. *No response required.*

49) WSP suggests a policy be implemented onsite that minimizes tailgate banging when unloading dump trucks onsite. *Recommendation to be included.*

50) There could be other effective noise controls that could replace or revise those put forth in the NIS, however prior to implementation of any changes to the recommended noise controls, that appropriate studies should be undertaken to demonstrate compliance with MECP sound level limits. WSP agrees that any changes to the noise mitigation and/or equipment should be reviewed by a qualified acoustical consultant, and WSP further recommends that prior to any modification, the licensee shall provide MNRF with written notice. *No response required.*

Section 6.0 Recommendations

51) WSP agrees with the noise control recommendations which are provided in Section 6 of the NIS (i.e. hours of operation, equipment operating, equipment shall satisfy the noise level emissions specified in Table 5, construction equipment shall comply with NPC-115, etc.) and that they should be included on final Site Plans. *WSP notes that noise barrier recommendations from Section 5 were not included within Section 6 and should be included on final site plans.*

4 CONCLUSIONS

As defined above, the overall study was completed in accordance with the typical MECP procedures and standard practices for Ontario.

WSP notes that the NIS did not address the noise impact of the truck traffic on public roadways. It is WSP's opinion that it should have been considered, which will require an update to the NIS.

WSP recommends that a review of the final site plan with noise recommendations incorporated should be completed to verify the recommendations were correctly transcribed incorporated into the final site plan.

Overall, the results of the study indicate that predicted worst case levels of the sensitive receptors surrounding the facility are expected to be below the relevant noise criteria provided the noise controls mentioned in Section 5 and Section 6 are implemented and strictly adhered to. The noise controls recommended should be implemented in the final site plan. Once WSP receives the requested information and has the opportunity to review, we will be able to confirm if we agree with the findings of the assessment.

Valcoustics is requested to provide a response addressing WSP's concerns and clarifications in order to complete the peer review process of the Noise Report.

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