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David Smith, RPP, Manager of Planning
Municipality of West Grey
Municipality of West Grey
402813 Grey Road 4
Durham, ON N0G 1R0

WATSON MOUNT FOREST 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 Aercoustics Engineering Ltd. (Aercoustics), dated January 11, 2024 for a proposed gravel pit at 311804 Highway 6, Mount Forest 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 April 19, 2024, will include 93.3-hectare area to be licenced and the area of extraction will be approximately 77.45 hectares. It is understood the applicant is seeking a Class "A" licence, for a pit above the groundwater table.

The applicant is seeking to license the Site to be able to extract and ship up to 750,000 tonnes annually, in six (6) phases. No extraction below the water table is proposed.

The Site is located approximately 0.7 kilometres north of Road 49, 1.3 kilometres east of Concession Road 2 WGR, along south of Grey Road 9 (County Road), and west of Highway 6.

The Site is currently zoned Highway Commercial – Space Extensive Commercial and Space Extensive Industrial (C2-115), with the southernmost portion of the property associated with the Letterbreen Bog zoned Wetland and Natural Environment 2 (NE2) under West Grey municipal zoning by-law 2006-37. The western portion of the property is zoned Extractive Industrial, which is reflective of the existing ARA licenced area (ALPS 5110).

The proposed licenced boundary of the aggregate pit falls within the Highway Commercial zone. As per Schedule B of the Grey Country Official Plan, the majority of the proposed licenced boundary of the aggregate pit is within the Aggregate Resources Area designation. An amendment to the zoning bylaw would be required. The properties surrounding Site also include Agricultural, Rural and Natural Environment Zones.

An on-site existing house, barns and sheds are proposed to be removed, and no new buildings or other structures are proposed as part of aggregate operations.

WSP Canada Inc.
126 Don Hillock Drive, Unit 2, Aurora, ON
L4G 0G9 Canada
T: (905) 750-3080

As per the Operational Plan, the proposed gravel pit operations will be from 7:00 am to 7:00 pm, Monday to Friday, with loading and shipping permitted between 6:00 am to 7:00 pm, Monday to Friday and shipping permitted between 7:00 am to 3:00 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, dozers, loaders, skid steers, grader, crusher, screener, generators, air compressors, conveyor belts, trucks and washing/classifying equipment. Aercoustics completed a NIS to support this proposed development

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
January 11, 2024	Watson Mount Forest Pit – Noise Impact Study	Aercoustics Engineering Ltd.
March 18, 2025	Teeswater Watson Mount Forest Pit – Potential Future Concrete Plan Noise	Aercoustics Engineering Ltd.
May 23, 2025	Watson Mount Forest Pit – Noise Impact Study Peer Review	WSP Canada Inc.

3 PEER REVIEW COMMENTS AND RESPONSES

3.1 Watson Mount Forest Pit – Noise Impact Study

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 provide noise control recommendations for the aggregate operations to satisfy the Ministry of the Environment, Conservation and Parks (MECP) noise guidelines and West Grey Noise Control Bylaw No. 55-2016. WSP agrees that the applicable noise guidelines and criteria were used. *No response required.*

2) Figure 1 of the NIS showing the proposed location of the aggregate pit, aligns with the Operational Plans provided. *No response required.*

3) Based on available information, WSP agrees with the existing and vacant lot noise sensitive receptors chosen for the noise impact study as shown in Figure 2 of the report. The closest noise sensitive receptors that were chosen surround the Site. *No response required.*

Section 2.0 Site Description

4) The NIS accurately reflects the location of where the Site is located within the municipality of West Gray Ontario as per Operational Plan provided. *No response required.*

5) WSP agrees that ambient background sound levels at locations along Hwy. 6 could be dominated by road traffic, and to a lesser extent Grey Road 9. *No response required.*

Section 3.0 Noise Criteria3.1 Acoustical Classification

6) 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.*

7) The NIS correctly defines what a Class 2 and 3 area is as per MECP NPC-300. *No response required.*

8) The Noise Report Table 3 lists the following receptors as being in areas classified as being in either Class 2, or Class 3:

   a. Class 2 – R01 to R08 (along Highway 6), R08 – R18 and VL36 (along Grey Road 9), dominate source of background noise for receptors in the area during the day and evening, and natural sounds during the nighttime. Based on site visit observations.

   b. Class 3 – R19 – R21 (Concession Rd. 2 WGR) including VL37 and VL38, R22 – R35 (Road 49) including VL39 are on less travelled roadways and areas dominated by natural sounds, and thus a rural designation.

   WSP agrees with the receptors and the respective class designation chosen for each receptor. *Please provide justification as to why outdoor points of reception were not used in the modeling analysis*

3.2 MECP Sound Level Limits

9) 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 2, and 3 for plane of window or outdoor points of reception. *No response required.*

10) The NIS also correctly identifies that if background levels exceed the exclusionary limits, then that background sound level becomes the criteria. *No response required.*

11) Calculations were performed using the predictive computer model CADNA/A software, which uses the implementation of the U.S. Department of Transportation's Traffic Noise Model (TNM) Version 2.5 to predict ambient noise levels within the vicinity of the noise sensitive receptors. WSP notes that the noise prediction model used in the assessment is considered acceptable, however typically an Ornament verification model run completed to verify the use of CADNA/A and TNM and provided in the noise study. *Please provide a validation file and configuration file CADNA/A for review.*

12) Traffic data used in the analysis for Highway 6 was provided in the Appendix of the report for the year 2019 for an AADT volume of 6,350 provided by the MTO. WSP agrees with the value used. *No response required.*

13) An AADT volume of 930 was used in the analysis for Grey Road 9 as shown in Appendix of the NIS, Section 6.1 of the NIS indicates this AADT value was calculated based on the higher of the AM/PM peak traffic volumes included in the Transportation Impact Study (TIS) multiplied by 10. WSP agrees with this approach based on information provided. *No response required.*

14) WSP agrees with the following used in the analysis: ITE hourly road traffic distribution, the lowest daytime and nighttime hourly distribution volumes, and a 50/50 heavy medium ratio with an assumption of 3% of total traffic representing all trucks. *No response required.*

15) There are receptors in Table 2 that are along Highway 6 but did not have elevated sound levels due to road traffic (i.e. R01 and R08), and R05 was only an elevated at night but not during the day. There are sample calculations provided in Appendix A of the NIS, but not for those receptors=. *Please provide justification as to why not all receptors along Highway 6 receptors were included in the analysis and shown Appendix A.*

3.3 Vacant Lot Receptors

16) The NIS accurately reflects that NPC-300 provides guidance and consideration regarding vacant lot receptors and the location and heights of where vacant lot receptors were placed were done so in accordance with NPC-300 and using the most up-to-date zoning by-laws. *No response required.*

Section 4.0 Aggregate Pit Operations

4.1 Hours of Operation

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

4.2 Site Preparation and Rehabilitation

18) 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.*

19) The NIS correctly points to MECP Publication NPC-115, of which any equipment used for construction activities (i.e. site preparation and rehabilitation) should satisfy the noise emission requirements of the MECP document NPC-115. *No response required.*

20) The NIS also recommends that the work activities should be restricted to daytime hours (i.e. 07:00 – 19:00) only which would align with the Municipality of West Grey Noise Control By-law No. 55-2016 which includes restrictions on the times during which construction activities may occur. WSP agrees with these recommendations and the correct guidance was referenced and provided. *No response required.*

21) WSP agrees with the recommendation, when possible, construction activities such as site preparation be conducted during the fall winter or spring months when there is a reduced level extraction and when residential windows are more likely to be remained closed. *No response required.*

4.3 Extraction, Processing, and Transportation

22) The NIS accurately reflects the proposed maximum annual tonnage of 750,000 tonnes per year based on the Operational Plan provided. *No response required.*

23) The NIS reflects the equipment listed on Operational Plans provided and the aligns with typical extraction, processing, and transportation operations you see at other pits. *No response required.*

4.4 Equipment

24) As per the assessment the worst-case operations at the pit include:

    c. Working face - two (2) extraction loaders, one (1) portable processing plant (i.e. crusher), one (1) conveyor shipping material to central processing area.

    d. Central Processing Area (pit floor within Phase 1B) – one (1) permanent processing plant, two (2) shipping loaders

e. Truck traffic – fifteen (15) shipping trucks between the processing area and off-site (30 passes per hour).

The equipment list, quantity and assessed emissions need to be included in the Operational Site Plans. WSP notes as per Figure 3 provided for Phase 1A extraction, that no conveyor or central processing area are included. This is included in the appendix of the NIS as noise control recommendations. *No response required.*

25) The NIS considered fifteen (15) shipping trucks in a worst-case hour. The Traffic Impact Study – Table 3.1: Trip Generation Estimates provided from Paradigm in the appendix of the NIS indicates the average number of trucks per hour is ten (10). *Please confirm the number of shipping trucks in a worst-case hour.* It is noted that fifteen is a more conservative value than ten.

26) 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 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.*

27) The speed considered in the NIS was 25 km/hr. RWDI Air Quality Report considered a speed limit of 20 km/hr should be posted near the site entrance and that hall trucks and highway trucks operators will be directed to observe the speed limit. *Please confirm that 25 km/hr will be the noted speed limit on site and used in other assessments (i.e. air quality) and that a lower speed limit is not posted as a means of dust control.*

28) The heights above grade of which were used for the equipment are consistent with other pits. WSP agrees with the heights used in the analysis. *No response required.*

Section 5.0 Noise Predictions and Controls

5.1 Noise Prediction Methodology

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

30) WSP agrees that the worst-case operations associated with process and extraction, and the locations of the equipment needed to be used which were used as shown in Figure 3 through to 10 for Phase 1A to Phase 6. The NIS mentions that worst-case locations were used for each extraction phases. WSP agrees with this approach. Sample calculations for all receptors were provided in Appendix C of the NIS when pit processing is occurring in Phase 1B. *No response required.*

31) The NIS noted that existing topography was used (taken from Operation Plan), downwind propagation, ground attenuation absorption parameters where hard ground (pit area) and soft ground (everywhere else) were taken into account. WSP agrees with the parameters used in the modelling. *Please provide Cadna configurations such as reflections ground absorption values used and if foliage feature was used in the analysis.*

32) WSP notes that the NIS study mentions that hard ground was modelled in the pit area. *Please provide what ground absorption was used for the roads in the area.*

33) 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, conveyors). WSP agrees with this modelling approach. *No response required.*

5.2 Aggregate Pit Noise Sources

34) The reference sound power levels that were listed in Table 4 of the NIS for the various equipment were based on measurements of similar equipment at other aggregate facilities. WSP agrees with the reference sound power levels that were listed in Table 4 and are similar to equipment at other aggregate pit operations. *No response required.*

35) Confirmation of face height used in the analysis for the various phases of and confirmation how close the equipment was modeled to the working face. *Provide further information.*

36) To verify the correct noise source heights were used in the modeling analysis, a table of the point or line sources with heights attributed to each source provided. *Please provide aggregate pit noise sources heights used in the model*.

5.3 Recommended Noise Controls

37) 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. *No response required. WSP recommends that an off-site audit should be conducted within 6 months of the start of extraction while processing operations are being doen on the site to confirm MECP noise guideline limits are not exceed, and that the acoustic audit should be done by a qualified acoustical engineer.*

38) The NIS indicates that no additional noise controls are required to address potential future dwellings on vacant lots, as per results provided WSP agrees. *No response required.*

39) The NIS accurately defines an acoustic barrier as per MECP guidance, and what it should be comprised of. WSP does question how the barriers around the plants are going to be constructed out of. If it were to be stockpiles the following questions come to mind:

    a. How is the pit owner to ensure a 10-meter stockpile (barrier) will be maintained at that height

    b. Stockpile at that height would have a large slope, the distance between the stockpile (barrier) and plant modelled appear to not leave a lot of room for the slope.

    c. In some phases the proposed barriers are almost entirely surrounding the plants and are very close to it, is this particle for maintenance and accessibility. *Please provide more information.*

40) WSP notes that back-up beepers can be a source of nuisance complaints and therefore recommends alternative technologies such as broadband alarm should be used on the equipment operating at the site in addition the internal haul routes be designed to minimize the need for reversing to reduce the use of backup arms as well. *Recommendation to be included.*

41) WSP also notes that tailgate banging can be a source of nuisance complaints, and recommends a policy be implemented onsite that minimizes tailgate banging when unloading dump trucks onsite is also included. *Recommendation to be included.*

42) The NIS recommends several barriers which are illustrated in Figures 3 to 10 providing location and heights during Phase 1 through 6. WSP recommends that barrier locations, heights and length should be reviewed if there's a change in the design or grade elevations and in addition, these recommendations should be included in final site plans. *No response required at this time however WSP will review once source heights are provided.*

43) The NIS recommend and indicate indicates on all figures for each Phase where the Permanent Processing Plant located and at 394 MASL. WSP recommends this should be included in final site plans. *No response required.*

44) WSP agrees with the Noise Control Recommendations in Appendix A. WSP notes that Table A-38, should be just Table A-3. *No response required.*

5.4 Predicted Sound Levels with Controls

45) The NIS provides the predicted worst-case noise impact from the proposed facility operations during Phase 1 though 6 due to simultaneous processing extraction noise sources on the nearby sensitive receptors as shown in Table 5. WSP notes that modelling files for all Phases and receptors were not provided to verify. WSP can not confirm that the worst-case results were used. Within the appendix of the NIS, Aercoustics provides sample calculations for all receptors when Pit Processing is occurring in Phase 1B. *Please provide tables that shows the worst-case predicted for each phase of extraction that aligns with the numbers shown in Table 5.*

Section 6.0 Truck Traffic Noise on Haul Route

46) WSP agrees that the MECP noise guidelines does not directly address noise impact of truck traffic on public roadways, however it does require the consideration of noise impacts in choosing the off-property halt route in consideration of noise sensitive receptors in the area. WSP agrees that the MECP document used for landfills is a good guidance for evaluating the noise impact of truck traffic associated with external haul routes. *No response required.*

47) Future truck volumes of 20 trucks (10 in/10 out) mentioned in the NIS and used in the analysis was found in the Appendix of the NIS and was based on the TIS prepared by Paradigm Transportation Solutions Ltd. dated December 2023. *No response required.*

48) Calculations were performed using the predictive computer model CADNA/A software, which uses the implementation of the U.S. Department of Transportation's Traffic Noise Model (TNM) Version 2.5 to predict ambient noise levels within the vicinity of the noise sensitive receptors. WSP notes that the noise prediction model used in the assessment is considered acceptable. *No response required.*

49) WSP agrees with the receptor locations that were selected and shown in Figures B1 to B3 in the appendix of the NIS. *No response required.*

6.1 Existing Noise Environment

50) WSP agrees that the worst case predicted increase in truck traffic noise would be when the peak haul truck traffic is occurring during an hour with the lowest existing road traffic. *No response required.*

51) Traffic data used in the analysis was found in the Appendix of the NIS as mentioned previously. *No response required.*

52) WSP agrees with the numbers used and presented in Table 6 of the NIS. *No response required.*

6.2 Noise Impact of Truck Traffic on Haul

53) Based on sample calculations of road traffic predictions provided in Appendix B of the NIS, numbers summarized in Table 7 and Figures B1 to B3 of the NIS are deemed acceptable for the proposed pit operations. *No response required with respect to pit operations.*

54) As per Table 7 in the NIS, the average or worst case predicted increase in noise impact from haul truck traffic directly associated with pit operations on all roads is 1 dB up to 2 dB and is mentioned to be considered insignificant by the MECP. WSP notes as per MECP Noise Guidelines for Landfill Sites (October 1998) An increase of up to 3 dB is considered insignificant. *No response required.*

55) The NIS concludes that based on a review of the noise impact associated with the future hall route traffic, associated with pit operations, the proposed hall route can be considered the preferred option. WSP agrees. *No response required.*

3.2 Teeswater Watson Mount Forest Pit – Potential Future Concrete Plant Noise

WSP's comments on the Addendum are the following:

1) The addendum letter identifies that Teeswater concrete included a provision on the Watson Mount Forest pit operational plans for the future addition of a concrete plant. It is noted that noise modelling of the proposed Concrete Plant has not yet been completed. *The Potential Future Concrete Plant should not be added to the operational plans without a noise impact study demonstrating the cumulative impacts from the aggregate pit extraction and processing operations with the potential concrete plant meets MECP limits.*

2) The addendum letter points out that the previous NIS (January 18, 2024) did not assess the concrete plant equipment and that a potential concrete plant operation on the Watson pit site will require an Environmental Compliance Approval (ECA) prior to operation, which will need to include a detailed Acoustic Assessment Report (AAR). WSP agrees with that statement and recommendation for the ECA permitting process. *No response required with respect to the ECA permitting requirements.*

3) The addendum letter points out that the AAR would consider the cumulative predictable worst-case noise impacts from the aggregate pit extraction and processing operations which was assessed in the NIS (January 18, 2024) with the proposed concrete plant. *WSP agrees that an ECA is and will be required, however modeling analysis should be conducted at this stage if there is the intent to include the propose concrete plant within the final site plans.*

4) In addition, the addendum letter also points out that predicted noise impacts could indicate additional noise controls may be required to be implemented on the concrete plant and or aggregate pit extraction or processing sources. WSP agrees that additional noise controls may be required in order to meet MECP limits. *No response required.*

5) *WSP notes that, if the Potential Concrete Plant is to be considered in the Site Plans, the Haul Route analysis within the NIS will need to be updated to include the cumulative noise impacts from truck traffic along haul routs as this would likely increase the number of trucks (i.e. concrete trucks and additives) using local roadways then what was already considered in the NIS.*

4 CONCLUSIONS

As defined above the overall NIS 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 future concrete plant. It is WSP's opinion that it should have been considered if it is to be included as a provision on Operational Plans, 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. If including the concrete plant as a potential operation on site, an updated Noise Impact Study should be reviewed by an acoustical engineer prior to the inclusion in the final site plan.

Overall, the results of the study indicate that predicted worst case levels from pit operations, on the sensitive receptors surrounding the facility, are expected to be below the relevant noise criteria provided the noise controls mentioned in Appendix A 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.

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

WSP Canada Inc.

Carolyn Ropp, BSc.
Acoustics, Noise and Vibration Specialist

Joe Tomaselli, M.Eng., P.Eng.
Senior Principal Acoustics, Noise and Vibration Engineer

CR/JT