

October 31, 2023

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Re: Stationary Noise Assessment Peer Review Comments
Response Letter
515 Thousand Islands Parkway, Lansdowne
GW File No.: 22-234 – Response Letter

This letter describes how we have addressed the peer review comments by Valcoustics Canada Ltd., dated October 6, 2023, on the Stationary Noise Assessment provided by Gradient Wind, dated May 1, 2023, for the proposed development located at 515 Thousand Islands Parkway, Lansdowne, Ontario.

Most operations were observed and measured during the on-site measurements. These values were then incorporated into the noise model.

- *The email stated the operations at the repair shop consist of: "Typical vehicle maintenance operations like tire changes, oil changes, minor repairs etc. to our fleet of trucks, excavators and workboats.". The repairs are done using air tools, powered hand tools, portable welders, etc.*
 - *The model does not account for any tool/repair noise associated with the repair shop building. How has the repair shop noise been accounted for in the noise assessment?*

Gradient Wind Response: This area is mostly noise-free as the loader and excavators are kept on the water. Only when maintenance is required on the equipment would an excavator or loader move slowly toward the repair shop. Therefore, noise from around the repair shop was assumed to be dominated by idling equipment parked just outside the shop. This idling equipment noise is expected to mask other sources of noise such as air and power tools. Source S5 (Loader) represents noise from this area.

➤ *How often are these repairs completed?*

Gradient Wind Response: Repairs are completed on an as-needed basis, but typically 1 or 2 vehicles per day are serviced. A typical service would involve tire removal and replacement (air tools for 60 seconds) and an oil change and inspection which does not generate noise. A welder occasionally is used for a total of 10-15 minutes per day. The occasional hammer strike to remove a rusted bolt may occur a few times daily but is not a constant occurrence. As explained above these lower and infrequent noise occurrences are masked by the idling equipment noise.

- *Table 2 shows that noise associated with the fabrication shop doors has been modelled with a sound power level of 84 dBA, operating for 100% of the worst-case daytime, evening and nighttime hour. What does the 84 dBA sound level in the table represent and how was it calculated?*

Gradient Wind Response: An on-site visit was held to review the conditions as well as get on-site measurements on April 14, 2023. The sound sources were determined based on the results of those measurements. Measurements were taken from a distance outside the fabrication shop doors. These measurement results were correlated with test receptors in the acoustic model at the same location and the sound power levels of sources were then adjusted so the test receptors would match those values measured onsite.

- *The truck route noise source has been modelled at a height of 1.5 m. The height of the engine exhaust on a tractor trailer is typically higher. What does the 1.5 m height represent?*

Gradient Wind Response: Typically, radiated noise from the engine cowling is the dominant source which is why it was assumed at 1.5 m. However, the truck route height is changed to 2 metres in the revised assessment to be approximately at the centre of a typical truck height. Testing was also carried out at 4 m which resulted in lower values than at 2 m truck route height.

- *Regarding the outdoor open storage areas, the email states: "The East side of the boat ramp typically sees more construction related items like excavators, rock, fabricated steel beams etc." With the exception of a loader moving near the boat launch ramp, the model does not appear to include any noise sources associated with moving to the goods to/from the east open storage area. Why is activity across the whole east open storage area not modelled?*

Gradient Wind Response: Activities on the east side of the loading ramp were taken into account by represented noise sources, S6, S7, and S9. The sound power level of these sources was based on on-site measurements (P4). The noise of moving products around the Open North area is represented by S8 (Forklift and Skyjack), which represents the movement of the equipment around the perimeter of the storage area. The far east side of the site is reserved for employee parking.

- *The model shows a loader idling at the south side of the repair shop. There is no loader movement shown in this area. What does a loader idling at this location for an entire hour represent?*

Gradient Wind Response: The loader is related to the repair activities outside the repair shop. As noted above, the dominant source is expected to be an idling piece of equipment that is under maintenance.

- *Regarding the types of material stored in the outdoor areas, the email states, "Steel and wood are dropped off on the west side of the fabrication shop (Bldg. 3) Granular material and armour stone are dropped off closer to the water at the seawall, also typically on the east side of the Fabrication shop."*
 - *The model appears to show material drop off near the site entrance (S14 on Figure 2) and near the water (S13 on Figure 2). The drop off location shown in the model (S14, near the site entrance) does not seem to be consistent with description of the material drop off location provided in the email (at the west side of the fabrication shop).*

Gradient Wind Response: S13 and S14 were placed in the center of each storage area to represent impulses from materials being dropped off. In the revised report, S14 is referred to as S12.

- *The truck route does not appear to extend down to the drop off site near the water (S13).*

Gradient Wind Response: The truck route is extended down to the shoreline in the revised model.

- *Regarding the impulsive noise sources, the email states, "On a very busy day our facility could receive as many as 4 trucks per hour dropping off materials. This is a peak, and not an average number. A peak one-hour block might look like two dump trucks dropping gravel to go to an island, with another transport delivering steel pipe and perhaps a 4th transport bringing steel beams to us. Sometimes setting the steel product down on racks produces an impulse sound. However, operators are trained to set down raw materials gently to prevent damaging materials and minimize noise impacts."*

- *Figure 6 appears to show an equal number of impulses at S13 and S14. Does this represent 2 impulses associated with the dump trucks at S13 (near the water) and 2 impulses associated with setting the products down at S14 (near the entrance)?*

Gradient Wind Response: There were no more than 4 impulses expected during any one-hour period in each location. The highest impulses produced on site are from the dump truck gate slams and dropping-off materials. The modeled sound power for both S12 (former S14) and S13 were based on average impulse of the dump truck gate slams and dropping-off materials as a conservative assumption. While materials are generally dropped off as indicated in the email, the assumptions in the model accounts for possibility of materials being dropped off in both locations.

- *The location of S14 does not appear to be consistent with steel being dropped off at the west side of the fabrication shop.*

Gradient Wind Response: Although the majority of the time, noise generation such as materials drop-off occurs further south (east of the fabrication shop) closer to the shoreline, the location was chosen more conservatively closer to the noise-sensitive dwellings to the north of Thousand Islands Parkway to represent material being dropped off at the outdoor storage area located on the north side of the site.

- *Please provide details regarding how the steel beams are unloaded to clarify how the process generates no more than 2 impulses.*

Gradient Wind Response: The impulse numbers are based on our observations on-site. As also mentioned in the email, “operators are trained to set down raw materials gently to prevent damaging materials and minimize noise impacts.” Please also refer to the explanation above.

- *All of the receptors appear to have been modelled at a height of 1.5 m. This height would typically represent a ground-floor plane of window or outdoor point of reception. Google Streetview imagery of the areas shows that some of the dwellings appear to have second storeys. Please clarify how the worst-case receptor height was chosen for the plane of window receptors.*

Gradient Wind Response: The receptor heights were revised in the study.

- *Was topography included in the model? From Google Streetview imagery, the grade level at the dwelling to the west of the site (represented by R7) appears to be elevated relative to the grade level at the facility.*

Gradient Wind Response: Yes, topography was considered in the model. The site slopes down to the river and the facility is lower than the parkway.

- *The guideline limits for the outdoor points of reception were calculated using the ambient sound levels due to road traffic. The traffic data used to calculate the ambient sound levels do not include data for the 0700 hour. If the 0700 hour has the lowest daytime traffic volumes, the guideline limits for the outdoor points of reception may be lower than those used in the report. (It is noted that the predicted sound levels meet the minimum exclusion limits regardless.)*

Gradient Wind Response: As acknowledged above, the noise levels are below NPC-300 criteria regardless of the background noise levels. Nevertheless, the NPC0300 levels are applied in the revised report.

This concludes our response letter to address the round of comments prepared for the Township of Leeds and the Thousand Islands by Valcoustics Canada Ltd., dated October 6, 2023, for the proposed development located at 515 Thousand Islands Parkway, Lansdowne, Ontario. If you have any questions or wish to discuss our findings, please contact the undersigned.

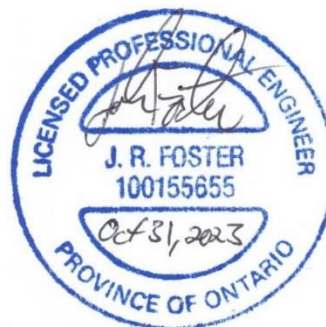
Sincerely,

Gradient Wind Engineering Inc.



Efser Kara, MSc, LEED GA
Acoustic Scientist

Gradient Wind File 23-091 – Response Letter



Joshua Foster, P.Eng.
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