

20 January 2016

**Tri-County Aggregates Ltd.**

92 Kenhar Drive  
North York, Ontario, Canada  
M9L 1N2

Attn: Mr. Larry Pevato, Tri-County Aggregates

CC: Mr. Bob Long, Long Environmental

Re: **Noise Impact Study for the Proposed Tri-County Pit**  
Response to Valcoustics Peer Review December 9, 2015

Aercoustics Engineering Limited (Aercoustics) has reviewed the peer review letter prepared by Valcoustics Canada Ltd. (Valcoustics) dated December 9, 2015.

A summarized version of the comments is presented below along with our responses. We submit the following itemized responses to Valcoustics' peer review comments. The numbering below aligns with the numbering used in the Valcoustics letter. Note that numbers that are missing represent items that did not require a response.

2. *Receptor R11 can only be considered as non-noise sensitive if it is occupied by the owner of the pit lands or is kept vacant.*

R11 is and will continue to be owned and occupied by the owner of the pit property.

3. *Aercoustics should confirm*
  - *the upper storey of the dwellings were used as the point of reception,*
  - *hard ground was used for the extracted areas of the pit as well as other pits,*
  - *all of the noise mitigation recommendations are in the site plans*
  - a. Aercoustics confirms the upper storey windows were used as the point of reception.
  - b. Hard ground was used for the extracted areas of the proposed pit and soft ground for other areas. The existing pits were not modelled as hard ground. Modelling the existing pits with hard ground would not affect the results of our study as; i) there are no existing aggregate pits positioned between the proposed pit and the noise receptors that dictate the noise controls and ii) the

receptors with gravel pits positioned between them and the proposed pit are R04, R07 and R08. They are positioned at far distances and the predicted noise impacts are more than 10 dB below the MOECC sound level limits.

- c. Aercoustics confirms that all of the recommendations have been implemented on the site plans (November 2, 2015)

4. *Valcoustics requests a copy of Aercoustics' CadnaA model be provided*

Aercoustics does not agree that this level of review is necessary to confirm conclusions of the study. The noise predictions can easily be duplicated given the information provided. If there is a concern that the sound level limits won't be met at a specific calculation scenario, please advise and more detail can be provided.

5. *Table 2 and Table A should be revised to indicated that Loading and Shipping operations are permitted 06:00-07:00 Monday to Friday and 07:00-12:00 on Saturdays*

Tables 2 and A of our report as well as the hours of operation described on the site plans do reflect these shipping operating hours. Note that shipping operations include the use of loaders to load trucks for shipment.

6. *Construction activities should be restricted to 07:00-19:00 on weekdays and not on weekends or statutory holidays*

As noted in our report, construction activities are exempt from the MOECC sound level limits and an operational restriction beyond any applicable municipal by-laws is not appropriate. As a general policy to minimize noise impact, the following note will be added to the site plans:

When possible, construction operations should be restricted to the daytime hours and site preparation should be conducted during the fall, winter, or spring months. During this time of year there is generally a reduced level of extraction and residential windows are more likely to remain closed.

7. *Aercoustics used a 50% duty cycle for shipment loader operation, a 100% duty cycle should be used to reflect a worst case predictable condition of a busy operation*

From Aercoustics' experience, a 50% duty cycle for loaders being used in the shipping operation is appropriate.

The average duration of loading a single truck and the allowed number of trucks in a worst case hour prevent a full 100 % duty cycle. Also, in the shipment operation cycle, a loader will rev its engine when it loads its bucket of aggregate from the stockpile, while the rest of its operation cycle, moving towards and delivering its

load to the truck and returning to the stockpile, it operates with a significantly lower engine rev. Its effective noise emission for this load cycle and limited number of trucks is generally represented by a 50% duty cycle.

8. *Valcoustics requests specific details of the processing plant noise enclosure to be provided on the site plans*

In Tables 3 and B, the report provides the required noise emission levels to be satisfied for the enclosed processing plant; 83 dBA and 72 dBA in the loud side and quiet side respectively. In the recommended noise controls, the orientation of the enclosure, with the quiet side facing R02, is provided. This is also reflected in the Operational Plan notes and clearly shown on the drawing. These form the noise performance requirements and are independent of construction details.

9. *Valcoustics requests that the boundary of the pit Stages be clearly shown in the report Figures 3 to 8.*

Although the report figures do not label the Stage areas, the locations and extents of the Stages are clear in the figures based on the drawing titles and the illustrated disturbed area. Also, the Operational Plan drawing correctly illustrates the Stages and directions of extraction.

10. *Valcoustics requests that the recommended berms be shown in different colours.*

Aercoustics does not agree that this is necessary to distinguish between different berms. The report text and figures clearly provide the extents of the berms, the berm label and the required top of berm elevations. The Operational Plan drawing also appropriately reflects the correct recommended berming including the elevations and the footprint.

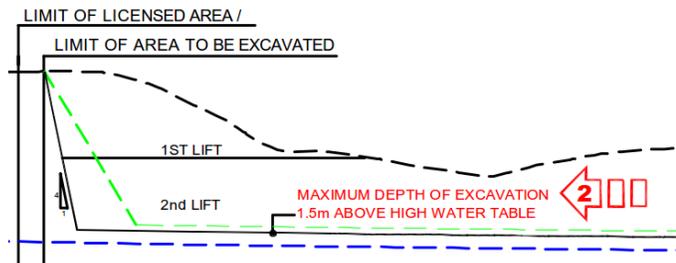
11. *Valcoustics requests additional detail on how the shipment truck 3 m deep cut out for Stage 1 will be created and noise impacts mitigated*

The shipment truck cut out will be part of the initial site preparation construction work and as such is exempt from the MOECC sound limits and is not included in the noise study.

The on-site haul route will be constructed from Stage 1 westerly through Stage 4 to the 17<sup>th</sup> line. Shipping and processing would not commence until the haul route cut is complete.

12. *Clarification is requested for Stage 2 operation. The recommended extraction direction is towards R06 but the figures appear to show extraction progressing away from R06.*

Stage 2 will be extracted in two lifts. As the topography rises significantly on the south side, the first lift only includes a small south side portion. The report figures provide this; Figure 4 illustrates the extraction of Stage 2 1<sup>st</sup> Lift, and Figure 5 illustrates an extraction operation on Stage 2 2<sup>nd</sup> Lift. A section illustrating the topography and extraction lifts is provided below. This illustration is part of the Operational Plan drawing.



13. Clarification is requested for Stage 3 operation. The recommended extraction direction is towards R02 but the figures appear to show extraction progressing towards R07.

Similar to Stage 2, Stage 3 will be extracted in two lifts. As the topography rises significantly on the south side, the first lift only includes a small south side portion. The report figures provide this; Figure 6 illustrates the extraction of Stage 3 1<sup>st</sup> Lift, and Figure 7 illustrates an extraction operation on Stage 3 2<sup>nd</sup> Lift.

14. Stage 3 and Stage 4 require that the extraction loaders are to operate no more than 30 m from the working face. The direction of this requirement should be provided.

In Stage 3, the noise control recommendation 13 (N11 in the Operational Plan drawing) states “Extraction to proceed in the direction of R02 with extraction loaders within 30 m of the working face...” This appears to be sufficient to define the direction. However, if additional description is wanted, the word “northwest” could be added to define the direction.

Similarly in Stage 4, the requirement for the direction of the working face and the loader 30 m operating condition is towards R09 (note 14 in the report and N12 in the Operation Plan drawing). However, if additional description is wanted, the word “southeast” could be added to define the direction.

Furthermore, the direction of extraction for each Stage is illustrated correctly on the Operational Plan drawing.

15. Additional detail on concrete recycling is needed.

As noted in the report, Concrete Recycling may occur on this site.

All of the noise control measures required of the pit operations apply to the recycling operation. The concrete recycling operations are planned to be located in the Stage 2 area, but may be located anywhere the normal processing plant is permitted. Also, the requirement is that the equipment will not introduce any increase of equipment. No additional loaders or truck volumes are allowed. With this, the recycling operation will not introduce any change to the pit noise impact predictions.

16. *Additional detail of potential noise impacts of off-site haul route noise is required,*

As the determination of preferred haul route with respect to noise is based on noise level change, the lower the change the better, with an existing truck haul route generally being the preferred route. As noted in the report, the proposed haul route is an existing tuck haul route that is used by the existing pits in the area. As such, the addition of Tri-County pit trucks will increase the road traffic noise by a smaller amount compared to other potential haul routes. The draft MOE Noise Guidelines for Landfill Sites is typically used to determine the relative noise impact of several choices when it is not clear which potential haul route has the lowest impact.

17. *To address the Official Plan for the Township of East Garafraxa, a cumulative noise assessment is needed.*

Any increase in noise levels from contribution of multiple pit operations would not be significant.

As each pit operation is required to satisfy the MOECC sound level limits, the cumulative effect of multiple pits operating together is minimal. As per the MOECC noise guidelines, each operation is required to satisfy the sound level limits under “worst case” conditions. This is when a pit or quarry is running at capacity with all of the equipment operating simultaneously with the equipment located at positions corresponding to their highest noise level for each receptor. The likelihood of two pits having their equipment at the “worst case” locations for a receptor at the same time is very low. Note that in this unlikely event, the noise impact would only increase by up to 3 dB. The MOECC provides a qualitative description of a 1-3 dB increase as insignificant.

18. *Valcoustics recommends a noise monitoring program.*

Aercoustics does not agree that a regular periodic noise monitoring program is required for this site. In our opinion, a noise complaint response procedure can be more effective in addressing concerns or complaints of neighbours.

19. *Valcoustics recommends a noise complaint procedure.*

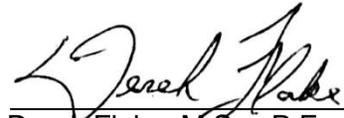
We recommend the following note be added to the Operational Plans:

The licensee will institute a complaint procedure. As part of this procedure, complainants will be requested to identify the location of the incident, as well as the time of the day that the incident occurred and any other information that they feel is relevant. The licensee will keep a complaints log book containing a record of all complaints as well as all complaint responses, which log book shall be accessible to the MNRF and Township on request. A noise consultant may be retained to address complaints, if required.

Please do not hesitate to contact us if any further clarifications are required.

Yours Truly,

**AERCOUSTICS ENGINEERING LIMITED**

  
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Derek Flake, M.Sc., P.Eng.

  
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Bob Rimrott, M.A.Sc., P.Eng.