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# Proposed Reid Road Reservoir Quarry JART COMMENT SUMMARY TABLE RESPONSE #2

Please accept the following as feedback from the Reid Road Reservoir Quarry Joint Agency Review Team (JART). Fully addressing each comment below will help expedite the potential for resolutions of the consolidated JART comments and individual agency objections. **Additional comments may be provided once a response has been prepared by JDCL to the comments raised below and additional information provided.**

Initial JART Comments (July 2019)	Page / Section	Applicant Response (December 2019)	JART Response (May 2020)	Applicant Response (October 2020)
<b>Report: Noise Impact Study – Project 16424, Reid Road Reservoir Quarry – December 2017</b>				
<b>Author: Aercoustics Engineering Ltd. (“AEL”)</b>				
<p>1. Noise Criteria: Section 4 of the AEL Report discusses the applicable noise criteria for the project. Ambient sound levels at the modelled residences are predicted using STAMSON v5 road traffic noise prediction model. Model results are provided in Appendix B.</p> <p>The report states that “consistent with the ORNAMENT prediction procedure, the traffic volumes were taken to be the same throughout the day or night”. This is incorrect. The ORNAMENT document is simply a noise propagation algorithm and does not specify what traffic volumes should be used in assessment. Historically, when assessing transportation noise impacts from 400-series highways, and in the absence of additional information, the MTO has recommended using an even split between daytime and night-time traffic volumes, i.e., that “the traffic volumes were taken to be the same throughout the day or night”. However, this is for assessing longer-term sound levels (16 hour <math>L_{eq}</math> Day sound levels, and 8-hour <math>L_{eq}</math> Night sound levels), and <u>not</u> for determining <math>L_{eq}</math> (1 hr) sound level limits for stationary noise assessments.</p> <p>Based on our experience in the area, traffic on Highway 401 in this area is not evenly distributed over the day. There is a definite diurnal pattern. In addition, high traffic volumes on the highway will contribute to slow-downs during peak periods (morning and evening rush hours), which can result in lowered ambient sound levels during key periods (e.g., the 6 am hour when shipping and receiving from the quarry are occurring, and the 7am hour when operations begin).</p> <p>In addition, a review of the STAMSON modelling inputs provided in Appendix C indicates that attenuation from woods has not been included in the predictions of ambient road traffic noise levels. There are significant woodlots in the area, which between Highway 401 and the affected residences, which will substantially reduce ambient sound levels. Parenthetically, from the noise model outputs provided in Appendix C, AEL <u>included</u> attenuation from woods when evaluating the impacts from the quarry, making their assessment inconsistent and non-conservative.</p> <p>The effect of the ambient modelling issues identified above are that the guideline limits identified in Section 4 and used in the assessment for</p>	<p>Pg. 4-8 Section 4.2</p>	<p>Aercoustics used Average Annual Daily Traffic (AADT) count information to predict the road traffic generated noise levels. This assumes that the traffic volumes are the same throughout the day and night. With the assumption that the actual daytime traffic is higher than during the night-time, the predicted levels will underestimate the daytime noise and overestimate the night-time noise. Although trees can provide some attenuation, it is Aercoustics’ experience that it is generally low, in the order of 0-2 dBA.</p> <p>With the operation of the quarry limited to the daytime period, with only shipping operations occurring as early as 6am, using the predictions as the basis for the MECP sound level limits, the sound level limits are considered conservative.</p>	<p>The ambient noise monitoring and the corresponding changes to the noise mitigation plan (noise barrier/berm locations and heights) outlined in the Aercoustics memorandum “Reid Road Quarry, Noise Monitoring Results and Updated Noise Control Recommendations, Aercoustics Project #: 16424.00”, dated December 4, 2019, address our final technical concerns.</p> <p>The updated noise control measures shown in this memorandum will need to be transferred onto the Site Plans for the quarry, specifically the Operational Plan and Monitoring and Mitigation Notes Plan.</p> <p>The current Monitoring and Mitigation Notes Plan references the December 2017 Aercoustics report. This reference will need to be updated:</p> <ul style="list-style-type: none"> <li>• Ideally, a final revised noise study incorporating the information from the December 2019 memorandum would be produced and referenced here.</li> <li>• Alternatively, the December 2019 memorandum should also be referenced.</li> </ul>	<p>Resolved subject to completion of updated site plans.</p>

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<p>the design of noise mitigation measures are not accurate; the ambient sound level limits in the area should have been confirmed through noise monitoring; the actual limits are likely to be substantially lower; as a result, the mitigation measures outlined in the report are unlikely to be sufficient; and the noise guideline limits are likely to be exceeded at some residences.</p>				
<p>2. Table 2 provides a list of the receptors considered in the assessment. Eleven existing residences and 8 zone-for-sensitive use vacant lot receptors were identified. The report does not note that this is not every residence in the area – rather, it is a subset. For example, there are additional residences along 1<sup>st</sup> Line which were not specifically assessed. Given the complexity of the site and the requirement for noise mitigation, all existing receptors near the site should have been included in the noise modelling. [Also raised in the Summary Statement section.]</p>	<p>Pg. 4-8 Section 4.3</p>	<p>Aercoustics followed generally accepted protocols of addressing noise impact at representative noise receptor locations in all directions around the proposed quarry. In some instances the noise receptors represent individual dwellings, while in others represent dwelling groups. With the sound level limits satisfied at the representative receptors, it is our opinion that the sound level limits will be satisfied at all of the dwellings near the quarry.</p> <p>To satisfy JART, noise receptors were added as shown in Figure 1. Tables 1 and 2 present the predicted noise impact of the operations, with the recommended noise controls, at the noise receptors. The sound level limits are predicted to be satisfied at all receptors. Although not an MECP noise receptor, an additional receptor location was added at the Storage Solutions property representing the expected location where a night watchman may sleep (NW-01).</p>	<p>See Item # 1.</p>	<p>Resolved subject to completion of updated site plans.</p>
<p>3. The modelled receptor heights for the stationary noise assessment are not provided. The existing residences in the area range in height from 1 to 2-storeys tall. Under NPC-300 guidelines, the worst-case point of reception would be the upper storey windows typically assumed to be at 1.5 m above ground for a 1-storey home, and 4.5 m above ground for a 2-storey home. If an incorrect lower receptor height were to be used, it would over-estimate the effectiveness of noise barriers and therefore underestimate potential noise impacts.</p>	<p>Pg. 5-9 Section 5.1</p>	<p>Aercoustics used a receptor height of 4.5m for all MECP noise receptors.</p>	<p>See Item # 1.</p>	<p>Resolved subject to completion of updated site plans.</p>
<p>4. Aggregate Quarry Noise Sources: Table 1 provides the reference sound power levels used in the assessment. Based on our review:</p> <ul style="list-style-type: none"> <li>• Rock Drill - the value of 74 dBA at 30 m is on the low end of typical values and suggests that the rock drill would need to incorporate source-based noise mitigation to achieve these levels. If this is the case, it should be noted as a mitigation requirement.</li> <li>• Extraction Loader – The AEL report uses the same noise emission level of 69 dBA at 30 m for both extraction and shipment loaders. However, for noise assessments at other</li> </ul>	<p>Pg. 5-9 Section 5.2</p>	<p>The equipment noise emission used in Aercoustics report is representative of the noise emission of actual equipment measured by Aercoustics. It should also be noted that the equipment noise emission is part of the noise control design of the quarry operation. The equipment operating on the site is required to satisfy the listed noise emission levels.</p>	<p>In the October 31, 2019, JART meeting, JDCL agreed to further develop a Noise Complaint protocol, including a reference on the Site Plan. This document has not been provided at this time.</p>	<p>The complaint protocol provided to JART on February 20 2020 was intended to address this comment.</p>

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<p>sites AEL has used a value of 74 dBA at 30 m for extraction loaders, which is representative/ typical of larger loaders which would likely be required for extraction here (removing the material from under the water).</p> <ul style="list-style-type: none"> <li>• Dragline – in our experience we would expect the sound power level for a dragline to be similar to a larger excavator, in the 74 dBA at 30 m range, as opposed to the modelled level of 69 dBA.</li> </ul> <p>The effect of the noise modelling issues identified above are that the off-site sound levels from facility operations may be underpredicted. As a result the noise mitigation requirements will not be adequate. This issue conflates with the previously identified issue concerning the guideline limits.</p> <p>The mitigation measures outlined in the report are unlikely to be sufficient; and the noise guideline limits are likely to be exceeded at some residences.</p>				
<p>5. Recommended Noise Controls: As discussed above, the recommended noise controls are unlikely to be sufficient, to ensure compliance with the noise guidelines, given the issues identified with the noise modelling.</p>	<p>Pg. 5-10 Section 5.3</p>	<p>With the responses provided by Aercoustics, the recommended noise controls are considered sufficient and appropriate.</p>	<p>See Item # 1.</p>	<p>Resolved subject to completion of updated site plans.</p>
<p>6. Given that the noise control measures require limitations on noise emissions from specific items of equipment, and the installation of significant noise barriers, a noise monitoring program is warranted.</p>	<p>n/a</p>	<p>Aercoustics’ opinion is that a noise complaint response procedure can be more effective in addressing concerns or complaints of neighbours.</p> <p>We recommend the following note be added to the Operational Plans:</p> <p>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 complaint 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.</p>	<p>In the October 31, 2019, JART meeting, JDCL agreed to further develop a Noise Complaint protocol, including a reference on the Site Plan, similar to the Best Management Practices Plan for dust. This document has not been provided at this time.</p>	<p>The complaint protocol provided to JART on February 20 2020 was intended to address this comment.</p>