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**Re: Letter of Opinion to Support a Minor Variance – Dust and Noise
Pt Lt 41 Con Bayside N Marysburgh Pt 1 47R5784; Prince Edward
RWDI Reference No. 2104250**

Dear Shannon,

RWDI was retained to provide a letter of opinion in support of a Minor Variance application for the lot located at 00 County Road 7 in Prince Edward County, Ontario, officially referred to as Pt Lt 41 Con Bayside N Marysburgh Pt 1 47R5784 (Subject Lot). RWDI reviewed available information about the neighbouring Cressy Quarry (The Quarry), including communications provided between Mrs. Binder and the quarry operator, to comment on air quality, noise and vibration impacts from the quarry on the Subject Lot. The Minor Variance application is in support of a building permit application to place a dwelling on the Subject Lot.

Information Reviewed

RWDI has received and reviewed the following information in relation to the assessment of potential air quality and noise/vibration issues related to the application:

- Site Plan of Part 1 of Lots 41 and 42, Concession Bayside, Township of North Marysburgh (Subject Lot), dated August 9, 1993;
- Inspection Report under the Aggregate Resource Act for Cressy Quarry, dated July 27, 2016;
- Site Environs / Existing Features Plan, dated February 8, 2002;
- Cressy Quarry Operational / Rehabilitation Plan, dated February 8, 2002;
- E-mail correspondence from Cei Champagne to Shannon Binder, dated May 25, 2021; and,
- Aerial imagery from Google Maps / Google Earth Pro, up to and including June 21, 2021.

The quarry operator did not have any dust or noise/vibration complaint logs to provide.



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Applicable Guidelines

The following guidelines that relate to assessing the potential for adverse air quality and noise/vibration impacts from industry and road on sensitive land uses have been reviewed:

- Ministry of the Environment, Conservation and Parks (MECP) Land Use Compatibility D-Series Guidelines (MECP, 1995);
- Ontario Environmental Protection Act (EPA);
- Ontario Regulation 419/05: Local Air Quality (O. Reg. 419/05);
- MECP Publication NPC-300 – Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning;
- MECP Model Municipal Noise Control By-Law, which includes Publication NPC-119 – Noise from Blasting;
- MTO Provincial Standard Specification OPSS 120: General Specification for the Use of Explosives;
- MECP Guideline A10: Procedure for Preparing an Emission Summary and Dispersion Modelling Report; and,
- MECP Guideline A11: Air Dispersion Modelling Guideline for Ontario.

The operations at The Quarry are subject to both the EPA and O. Reg. 419/05.

All air emissions from The Quarry must meet the air quality standards contained in the regulation at the quarry property line and beyond. There are air quality standards for particulate matter (dust) and combustion by-products (nitrogen oxides) that are relevant to the quarry operations and impacts from the quarry operation's emissions must not exceed these standards at or beyond the property line. It is expected that impacts due to the quarry operation at the proposed residence would therefore also be in compliance with those standards, as air quality impacts drop off with distance.

All noise/vibration emissions from The Quarry must meet the applicable noise guidelines and sound level limits at the surrounding existing and future zoned noise sensitive points of reception. The noise/vibration generated by quarry operations must not exceed those applicable guidelines and sound level limits at existing residential building to the west (Closest Existing Residence), approximately 120 m from the quarry's operating area as indicated in Figure 1 below. The location of the proposed residence on the Subject Lot is not yet known. Conservatively, it has been assumed that the residence will be built approximately the same distance from County Road 7 as the two adjacent properties. Assuming this, the proposed residence will be located approximately 240 m northwest of The Quarry, which is significantly further away than the Closest Existing Residence is to The Quarry. Based on the neighbouring lots' use of property, it is assumed that the outdoor living area / outdoor amenity space will be located behind the proposed building, extending the separation distance from The Quarry. It is expected that impacts would therefore also be in compliance with those applicable guidelines and sound level limits at the proposed residence, as noise/vibration impacts drop off with distance.



Figure 1: Quarry and Residences Locations

Furthermore, there is a notable change in topography which also helps shield the proposed residence from the noise/vibration impacts.

Air Quality Impacts

The primary air quality concern related to aggregate extraction operations is the generation and transport of particulate matter from extraction, processing and shipping activities at the site. Emissions of combustion by-products from heavy equipment and shipping traffic are also a concern.

The estimation of emissions and prediction of potential impacts at nearby residences is covered under O. Reg. 419/05, and within the associated MECP guidelines A10 and A11. RWDI has conducted a high-level air quality assessment for the operations at The Quarry that follows the requirements of the regulation and associated guidelines. The assessment was based on general operational information provided by The Quarry operator (Drew Harrison), and the Operational Plan for the quarry. Emissions of both particulate matter and nitrogen oxides were assessed, as it is RWDI's experience that these are the key contaminants of concern in these circumstances.



Impacts were predicted at the Closest Existing Residence located next to The Quarry, as well as at both proposed residences on the Subject Lot.

Based on our assessment, RWDI's experience with both quarry operations and reasonable dust best management practices, it is expected that predicted impacts at the existing and proposed residence would be within the relevant standards. Furthermore, predicted impacts at the proposed building are similar to those predicted at the Closest Existing Residence.

Noise and Vibration Impacts

The major sources of noise are the operation of combustion engines of various large equipment related to the extraction, processing and shipping activities at the aggregate quarry site. Given the large setback distance and lack of vibrating equipment found at The Quarry, vibration levels should be below the applicable limits at both the Closest Existing Residence and the Subject Lot.

The estimation of sound emissions and prediction of potential impacts at nearby noise sensitive points of reception (mainly residences and vacant land) is covered under MECP Publication NPC-300, Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning. RWDI has conducted a high-level noise assessment for the operations at The Quarry that follows the requirements of the regulation and associated guidelines. The assessment was based on general operational information provided by the quarry operator (Drew Harrison), and the Operational Plan for The Quarry.

Impacts were predicted at the Closest Existing Residence located next to The Quarry, as well as at the Subject Lot across the road from the Closest Existing Residence that is the subject of the Minor Variance. Based on our assessment of all equipment running simultaneously, sound levels generated by the quarry operations would exceed applicable noise guidelines and sound level limits at the Existing Residence. Based on RWDI's experience of quarry operations and the small size of the quarry, it is more reasonable to assume that a limited quantity of equipment may operate simultaneously, in which case, The Quarry operations could comply with the applicable noise guidelines and sound level limits. Assuming that noise from The Quarry currently meet the applicable noise guidelines and sound level limits at the Closest Existing Residence, noise at the proposed residence would also be in compliance given its increased separation distance. The predicted sound level impact at the assumed location of the proposed building is estimated to be approximately 5 dB less than the predicted sound level at the Closest Existing Residence to the west of The Quarry.



Blasting Impacts

Blasting is not frequently conducted at the site based on operational information provided by the quarry operator (Drew Harrison). The key limits for blasting operations can be found in MECP NPC-119 and the use of explosive should follow OPSS 120. Based on this assessment, predicted concussion (air overpressure) impacts at the proposed residence(s) on Subject Lot are within the guideline limits. The ground-borne vibration is mainly dependent on the soil type and bedrock geometry and doesn't always decrease with distance. For this assessment, it is anticipated that as the Closest Existing Residence meets the applicable limits, the Subject Lot across the Closest Existing Residence will also meet the applicable limit as it is further away.

Conclusions

Based on the air quality and noise/vibration assessment conducted by RWDI, predicted impacts due to the quarry operations at the proposed dwelling(s) are within applicable standards/guidelines, and are similar to or lower than those at the Closest Existing Residence. From an air quality and noise/vibration perspective, RWDI believes there is no reason to deny the minor variance application for any buildings to be located on the Subject Lot at a greater distance than that of the Closest Existing Residence.

Yours truly,

RWDI AIR Inc.

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CIF/SVG/BGS/hta