aercoustics

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27 November 2014

St Marys Cement Group (CBM Aggregates)
55 Industrial Street
Toronto, Ontario, Canada
M4G 3W9

Attn: Mr. Colin Evans, Environment and Lands Manager, CBM

CC: Dale Covert, CBM

Re: CBM Aggregates Codrington Pit Acoustical Audit 2014
MNR License # 624984
Part of Lots 32-34, Concession 6, Geographic Township of Brighton, County of Northumberland

1 Introduction

Aercoustics Engineering Limited (Aercoustics) was retained to conduct an acoustic audit of the Codrington Pit to fulfil the annual monitoring condition set by the Ministry of Natural Resources (MNR). The Noise Study for the pit is titled "An assessment of the Potential Noise Associated with Aggregate Extraction & Processing at the Proposed Codrington Pit" (May 14, 2009), prepared by Aercoustics. There is also an accompanying Addendum Letter dated April 5, 2012.

The Codrington Pit is located about 1 km east of the intersection of Highway 30 and Old Wooler Road, about 1.5 km southeast of Codrington, Ontario. The pit is bounded by an Ontario Hydro line to the north.

The audit has been conducted in accordance with the guidelines and procedures of the Ontario Ministry of the Environment and Climate Change (MOE).

2 Site Visit Conditions

During the site visit on November 12, 2014, the processing plant was running and a CAT 972G front-end loader was loading material into the primary crusher from the nearby working face. The equipment was located about 1.6 km east of Highway 30 and 400 m south of the hydro line right of way.

It is a condition of the license that the sound levels from the pit comply with the MOE guidelines for noise from stationary sources. The current MOE criteria for noise from a stationary source are set forth in publication NPC 300, "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning".

The allowable noise levels from the extraction, processing and shipping operations in the pit as established by the MOE and the Noise Study are outlined in Table 1. The equivalent sound level (L_{EQ}) is an average sound level based on acoustical energy. It is a steady sound level that for the specified time period contains the same acoustical energy as the varying sound level which prevails.

Table 1 Applicable MOE Sound Level Limits (Daytime)

Receptor	Sound Level Limit One Hour L_{EQ} (dBA)
R1 to R13	45
R14	50
R15	52

The allowable sound level limits for the pit operations at the residences at R1 to R13 correspond to the Class 3 daytime equivalent sound level exclusion limit of 45 dBA. Receptors R14 and R15, which are closer to Highway 30, are considered Class 2 receptors. As per the Addendum Letter, the extraction and processing operations in the pit are restricted to weekday daytime hours (07:00 19:00). The noise from a stationary source should not in any hour exceed the limits outlined in Table 1.

The surrounding receptors and measurement locations are illustrated in Figure 1.

The average air temperature was 8 degrees Celsius and the winds were from the west at about 15 km/hr, with intermittent stronger gusts. During windy periods, the measurements were paused to inhibit the noise from leaves and foliage. During these times, the pit noise was not audible.

3 Equipment

Measurements were taken with a RION NL-32 Sound Level Meter equipped with windscreen. The equipment was calibrated before the measurements.

4 Measurements

During the site visit, sound level measurements were conducted where appropriate at locations representative of the residences surrounding the pit. The dwelling at receptor R1 was observed to be vacant. Regardless, measurements were performed here to ensure the sound levels at dwellings to the south (R4 to R6) were acceptable.

It should be noted that during the measurements, the sound level meter was paused as required to minimize the contribution from airplane flyovers. Table 2 tabulates the noise measurements and observations at the receptors.

Table 2 Measured Sound Levels at Receptors

Location/ Receptor	Sound Level L_{EQ} (dBA)	Noise Sources
R1	44	Pit activities inaudible; intermittent wind gusts contributed (not inhibited); L90 was approximately 40 dBA; Distant traffic on Highway 30 clearly audible due to west winds.
R2	44	Pit activities inaudible; crickets, intermittent wind gusts contributed (not inhibited); L90 was approximately 40 dBA; Distant traffic on Highway 30 clearly audible due to west winds.
R10	43	Pit activities faintly audible; intermittent wind gusts were inhibited; Distant traffic on Highway 30 faintly audible due to west winds; airplane flyovers partially inhibited.

Measurements of the processing plant were conducted to confirm the assumed reference sound levels used in the noise study. The sound pressure level of the plant was assumed to be 87 dBA at 30 m. The actual plant was measured at the time of the audit to be 76 dBA at 30 m. This corresponds to a sound power level (PWL) of 114 dBA, which is a relatively quiet processing plant.

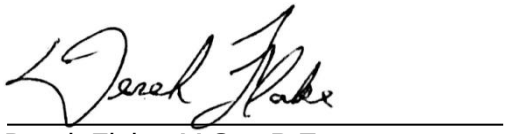
See the attached Figure 1 for an illustration of the measurement locations and the receptor locations.

5 Observations and Conclusions

The measured sound levels include the contribution from the background noise sources with distant road and air traffic minimized. The Codrington Pit operations were faintly audible at downwind receptor locations due to the steady west wind.

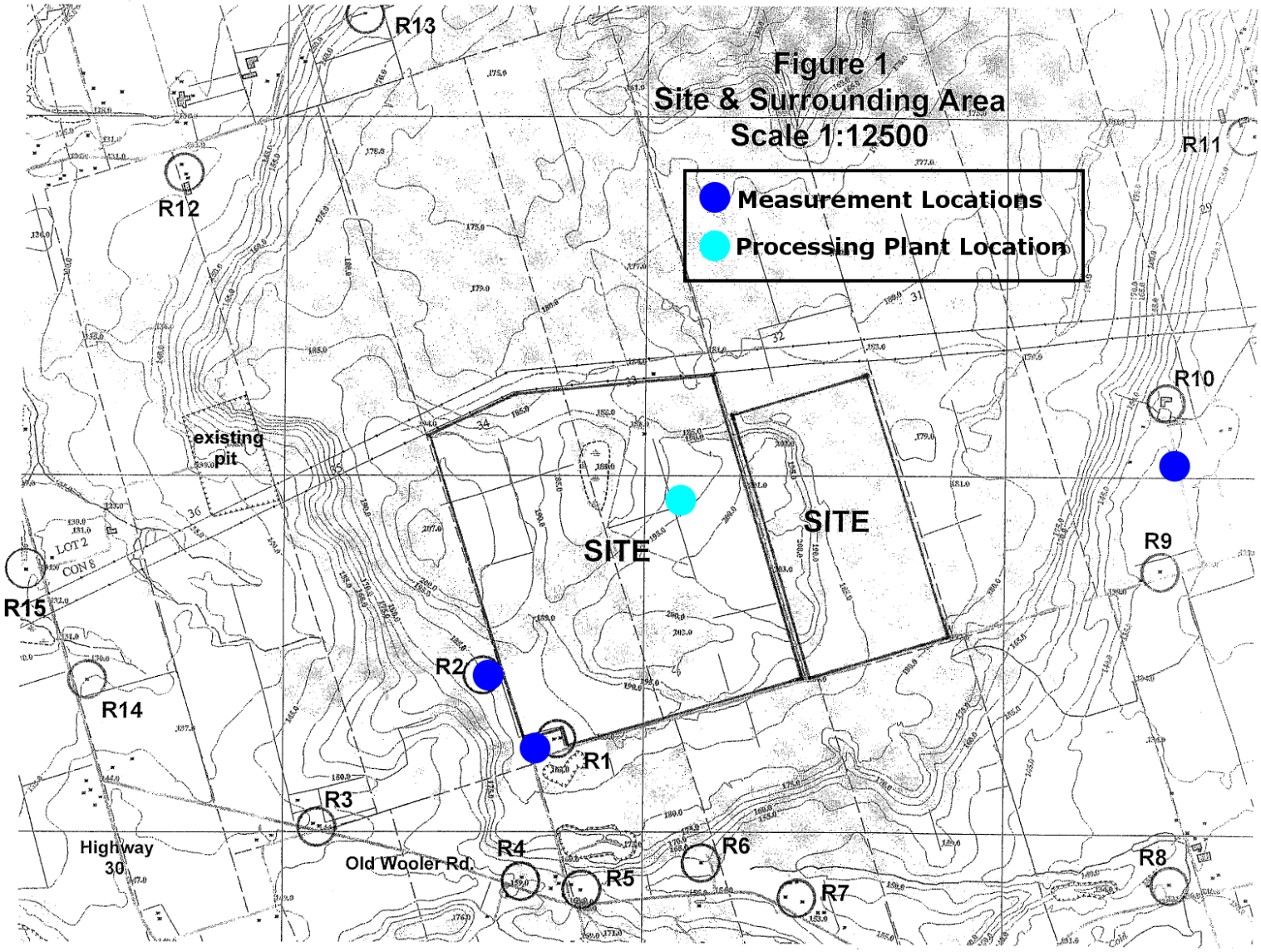
The measurement results indicated that the sound level from the Codrington Pit operations at all applicable receptors was below the allowable limits. It can be concluded from the acoustical audit that, based on the measurements, the Codrington Pit is operating in compliance with the MOE guidelines for stationary sources.

Sincerely,



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

AERCOUSTICS ENGINEERING LTD.



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The scope of the work outlined in this document is limited to the acoustic, noise and/or vibration control aspects of the design. Contractor to verify all dimensions

Scale: N.T.S.
Drawn: DF
Eng: DF
Date: 2014.11.27

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Project Name:

Codrington Pit 2014 Acoustical Audit

AEL File: 05259

Drawing Title:
Key Plan Showing Site Location and Receptors

Figure 1