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Friday 14 October 2016

Elf Farm Supplies Pty Ltd
C/- Compaction and Soil Testing Services P/L
1/78 Owen Street
GLENDENNING NSW 2761

Our Reference 160787-03-03L-DD

For the attention of Mr Tete Awotedu

Construction Noise Monitoring
Mulgrave Substrate Plant
108 Mulgrave Road, Mulgrave

1.0 INTRODUCTION

Acoustic Consulting Engineers Pty Ltd was engaged by Elf Farm Supplies Pty Ltd to conduct a site attended construction noise audit for the preliminary construction works associated with the upgrade works for the existing Mulgrave Substrate Plant.

The purpose of the attended audit was to assess noise emissions from construction activities with reference to the *'Construction Noise & Vibration Management Plant. Substrate Plant. Mulgrave'* Report No. 46.6411.CNVMP_MUL:GD/DT/CF/2016 Rev07 prepared by Atkins Acoustics and compliance with Schedule 3 - Condition 18 of the Project Approval No. 08_0255 that states:

Construction Noise Criteria

18. The Proponent shall ensure that the construction noise generated at the Substrate Plant site does not exceed the criteria in Table 1.

Table 1: Construction Noise impact assessment criteria dB(A)

Receiver/Location	Day $L_{Aeq(15\ minute)}$
R1 – 46 Mulgrave Road, Mulgrave	52
R2 – Mulgrave Industrial area	65
R3 – 2 Railway Road, Mulgrave	52
R4 – 126 Mulgrave Road, Mulgrave	52
R5 – Chisholm Place, South Windsor	51

Notes:

- *Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.*

2.0 SITE ATTENDED NOISE AUDIT

This report presents the results and findings of site attended noise audits conducted from approximately 7.40am to 10.55am on Thursday October 2016. Weather conditions during the audits were typically clear and dry with light to strong breeze from the south at times.

The site attended noise measurements were conducted at five (5) reference residential receivers identified outlined in Project Approval No. 08_0255 as follows:

R1 46 Mulgrave Road (north)

R2 Mulgrave Industrial Area (east)

R3 2 Railway Road (south-east)

R4 126 Mulgrave Road (south-east)

R5 Chisholm Place (west)

The reference receiver locations are identified in *Figure 1*.

Figure 1 Reference Receiver Locations

Measurement instrumentation consisted of a Type 1 SVAN959 sound and vibration analyser and a Type 1 GRAS 40-AE prepolarised condenser microphone. The instrumentation was checked before and after the measurements with a SVAN SV30A acoustic calibrator and no drift in calibration was detected.

Measurements at each reference receiver location were conducted over two (2) fifteen (15) minute periods, instantaneous noise levels observed during the audit where appropriate were used to assess source noise contributions from construction activities.

At the time of the audit, construction activities comprised of concrete truck unloading, concrete pump, a mobile generator, a mobile compressor, a concrete vibrator, hammer drills and nail gun.

It was observed that construction noise from the upgrade works associated with the Mulgrave Substrate Plant was inaudible at all measurement locations, except for R5.

At measurement location R5, noise from the concrete vibrator was audible when operational. Noise from reverse alarms was audible at times at this location. However, due to the influence of background noise, construction noise could not be accurately measured.

Table 1 provides a summary of the site observations and *Table 2* provides the estimated noise from construction. It should be noted that the measured 15-minute statistical noise levels presented in *Table 2* are information only and not due to construction activities.

Table 1 Site Observations

Location	Observation
R1	Construction noise from Elf Farm was inaudible. Noise environment was controlled by construction activities at the measurement location (soil filling and compaction for construction of commercial facility).
R2	Construction noise from Elf Farm was inaudible. Noise environment was controlled by road traffic from Hawkesbury Valley Way).
R3	Construction noise from Elf Farm was inaudible. Noise environment was controlled by intermittent road traffic, birds, roosters, dog barking and natural environment.
R4	Construction noise from Elf Farm was inaudible. Noise environment was controlled by intermittent road traffic, birds, roosters, dog barking, cows and wind in trees.
R5	Construction noise from Elf Farm was audible when the concrete vibrator was operational. Construction noise could not be accurately measured due to the influence of background noise (birds, distant traffic, roosters and intermittent train pass-bys).

Table 2 Noise Audit Measurement Results

Location	15-min Statistical Noise Levels, (dB(A))			Estimated Construction Noise Contribution, $L_{Aeq,15min}$	Construction Noise Limit $L_{Aeq,15min}$	Compliance
	L_{Aeq}	L_{A10}	L_{A90}			
R1	67.9	71.8	56.9	Minimal (inaudible, below background noise level)	52	√
	67.8	71.3	59.9			
R2	64.0	66.9	57.7		65	√
	65.9	67.8	56.2			
R3	60.3	63.4	48.4		52	√
	56.6	56.9	47.2			
R4	54.2	56.3	48.6		52	√
	55.8	57.8	48.3			
R5	55.0	54.3	46.0	<48 (observed during lulls in ambient sound)	51	√
	55.9	53.3	46.8			

The site attended measurements on Thursday 13 October 2016 confirmed that $L_{Aeq,15min}$ noise levels from construction activities associated with Elf Farm Supplies Pty Ltd satisfied the project noise goals in accordance with Schedule 3 -Condition 18 of Project Approval No. 08_0255.

We trust the information in this letter is satisfactory. Please do not hesitate to contact our office should further information or clarification be required.

Yours sincerely,

Dan Dang
Principal Acoustic Engineer
Acoustic Consulting Engineers Pty Ltd