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**Attention: Mark Jackson**

Dear Mark

**Addendum Report #3**  
**Kariong Sand & Soil Supplies Facilities Upgrade**  
**Noise & Vibration Responses to the DPIE Submission**

## **1 Introduction**

Waves Acoustic Consulting Pty Ltd (Waves Consulting) provided a Noise & Vibration Impact Assessment (Document No. 60.00741.05 RPT1R3.DOCX) as part of the EIS for the Kariong Sand & Soil Supplies Facilities Upgrade, 90 Gindurra Road, Somersby, NSW.

Following the EIS exhibition the Department of Planning, Industry & Environment (DPIE) have provided questions from an internal DPIE reviewer regarding noise and vibration impacts from the site. These questions were addressed in Addendum Report #2. In response to the Addendum Report #2 the DPIE reviewer has issued a further series of questions. The additional questions / issues from the DPIE reviewer will be addressed in order in this Addendum Report #3.

## 2 DPIE Addendum Report #2 Questions

### 2.1 Question 1

The DPIE question is reproduced and discussed separately below:

**Issue 5:** please provide the existing and predicted traffic noise emission levels to show the increase caused by the operation of the development at the most affected residential receiver (i.e. 242 Debenham Road South).

Table 7 from the report illustrates the noise emissions of the nearby local roads ie Gindurra Road / Debenham Road South and Acacia Road to the east. Both roads demonstrated noise levels above the RNP criteria during the survey period (snapshot below). Please note that Gindurra Road passes straight into Debenham Road South, so the measured noise levels can be assumed to representative of both roads.

Table 7. Attended Noise Monitoring Results

| Measurement Location                               | Measured Noise Levels<br>(dB re 20 µPa) |        |       | Character of the Ambient Noise  |
|--|---|--------|-------|---|
|  | LAeq                                    | LAFMax | LAF90 |   |
| Logger Location as per Figure 1                    | 48                                      | 61     | 45    | Traffic noise from the Pacific Highway, local industrial noise / reversing beepers and flora and fauna noise. |
| Adjacent to 242 Debenhams Road, Somersby, NSW      | 67                                      | 83     | 45    | Local traffic movements, traffic noise from the Pacific Highway, industrial noise and flora and fauna noise.  |
| Acacia Road opposite Kariong Correctional Facility | 60                                      | 78     | 47    | Local traffic movements, traffic noise from the Pacific Highway, industrial noise and flora and fauna noise.  |

These later two (2) measurements justify the use of the 2 dB increase criteria as per the NSW RNP.

As per Addendum #2 the only road close to residential receivers which may be impacted by the site is Gindurra Road / Debenham Road South (ie same road).

To assess the potential risk of road noise impacts along Gindurra Road / Debenham Road South a generic CoRTN calculation at 13.5 m from the road was undertaken to determine if traffic noise increases due to the additional traffic from the site were possible. This generic calculation showed the noise increases were much less than 2 dB.

Since the only variable that changes is the traffic volumes, then for any section of road a generic CoRTN calculation is sufficient to highlight any adverse risk of noise increases. Direct calculation at each residence is not necessary since the environmental factors between the existing traffic case and new traffic case will not change.

The generic CoRTN calculation is not practical to demonstrate in this Addendum, but the calculation spreadsheet is supplied for review.

## 2.2 Question 2

The DPIE question is reproduced and discussed separately below:

**Issue 6:** Please provide quantitative measures from attended measurements to support the claimed background noise level is indeed representative of those at residential receivers.

Table 7 from the report illustrates the noise environment at the nearest receivers surrounding the site ie 242 Debenham Road South (same road as Gindurra Road) and the residences along Acacia Road.

**Table 7. Attended Noise Monitoring Results**

| Measurement Location                               | Measured Noise Levels (dB re 20 µPa) |        |       | Character of the Ambient Noise  |
|--|--------------------------------------|--------|-------|---|
|  | LAeq                                 | LAFMax | LAF90 |   |
| Logger Location as per Figure 1                    | 48                                   | 61     | 45    | Traffic noise from the Pacific Highway, local industrial noise / reversing beepers and flora and fauna noise. |
| Adjacent to 242 Debenhams Road, Somersby, NSW      | 67                                   | 83     | 45    | Local traffic movements, traffic noise from the Pacific Highway, industrial noise and flora and fauna noise.  |
| Acacia Road opposite Kariong Correctional Facility | 60                                   | 78     | 47    | Local traffic movements, traffic noise from the Pacific Highway, industrial noise and flora and fauna noise.  |

These measurements demonstrate that the selected noise logger location is appropriate as it has lower ambient and maximum noise events and equal lowest background noise levels. The measurements verify the consultant subjective observations on site, that the selected noise logger location is representative and also provides a conservative background noise level and therefore assessment criteria.

## 2.3 Question 3

The DPIE question is reproduced and discussed separately below:

**Issue 7:** impulsive noise is not limited to certain times of the day. Please clearly identify noise mitigation measures specified for each noise emission activity with specific noise characteristics.

The NSW NPI adjustment for impulsive / intermittent noise only applies during the night-time. No impulsive or intermittent sources of noise operate at the site during the night-time. This adjustment does not technically apply. However, we note that as per the NVIA the noise models in the report have used a 5 dB adjustment for the activities inside the processing shed which have impulsive / intermittent noise characteristics, even though these activities only occur during the daytime. This provides a conservative assessment as a result.

The general noise mitigation measures for the site are extensive as documented in the NVIA report. Mitigation measures include 5 m noise barriers along the east boundary, 3 m noise walls around most storage areas and semi-enclosure of the tipping, crusher, and mulcher areas.

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## 2.4 Question 4

The DPIE question is reproduced and discussed separately below:

**Sensitivity Analysis:** *please provide manufacturer data to support the stated sound power level for the wood shredder 2710D. Further, it seems the octave band frequency for the wood shredder 2710D is incorrect, please provide DEFRA noise database reference for the shredder.*

The sensitivity analysis in Addendum #2 was provided to DPIE to demonstrate that even if much louder noise emission levels are assumed, then the site still complies with the PNTLs, provided the recommend noise control measures such as noise walls etc are implemented.

The shredder overall noise levels were derived from Manufacturer's data. In the absence of reference octave band data in DEFRA, a broadband spectrum was used. This spectrum emphasises the lower frequencies when considering an A-weighted assessment such as the NSW NPI and is considered conservative as a result.

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## 2.5 Question 5

The DPIE question is reproduced and discussed separately below:

**Noise wall heights:** *the Department notes that 6 dB safety factor has been applied to all external equipment and plants which are assumed to run for 100% of the time during the 15-minute assessment period. By contrast, the resulting increases in noise levels at residential receivers would be only between 2 dB(A) and 6 dB(A). The noise level increases at residential receivers indicate there is a potential of additional noise mitigation measures including potential increases of noise wall heights. Please clarify if any additional mitigation measures are proposed and increases to the noise walls.*

The sensitivity analysis demonstrated that even with a large (+ 6 dB) increase in noise levels of the loudest outdoor equipment on the site the PNTLs are still satisfied at all receivers.

Analysis of the noise emissions and dominant noise sources at the nearest receivers shows that because of the extensive noise controls on the site, the dominant noise source is the fully enclosed Processing building. Therefore, despite the sensitivity analysis adding 6 dB to the outdoor noise sources the noise levels at the receivers does not increase by the same amount because the noise levels are not dominated by the outdoor sources.

Further, we note that the NVIA and the sensitivity analysis from Addendum #2 only applied a 25 dB  $R_w$  correction to the Processing building facade, when the actual performance is recommended to achieve 35 dB  $R_w$ . Therefore, the NVIA and Addendum #2 assessments can be considered conservative as the noise emissions from the processing building would be approximately 10 dB less if the actual 35 dB  $R_w$  facade were applied in the models.

I trust this addendum provides sufficient detail for your current requirements. If you have any questions, please do not hesitate to contact me.

Yours sincerely



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