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20140910.1/2808A/R1/JL

28/08/2014

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**ATTN: LISA MOBBS**

## **2 Clarence Avenue, Dee Why - Application for Proposed Extension of Trading Hours of Childcare Centre**

### **1 INTRODUCTION**

This letter presents our review for the environmental noise impact by the proposed extension of trading hours of the Dee Why Kindergarten childcare centre at 2 Clarence Avenue, Dee Why.

The currently approved operating hours of the childcare centre are 7am to 6.30pm Mondays to Fridays. The proposal is to extend the trading hours to include operation from 7am to 6.30pm on Saturdays. The proposal does not involve any alterations to the architectural layout of the childcare centre.

### **2 SITE DESCRIPTION**

The childcare centre is a two storey building with four indoor play areas, three outdoor play areas, two cot rooms, kitchens and staff rooms and offices. The centre has an approved capacity of 90 children, which is to remain unchanged.

Based on a site survey that there is residential development in the immediate vicinity of the childcare centre. These include:

- A three storey residential block on the south-western boundary of the project site at 12 Dee Why Parade.
- A three storey residential block on the south-eastern boundary of the project site at 16-18 Dee Why Parade.

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- The Oceangrove retirement village located immediately west of the project site at 8 Dee Why Parade.

See figure 1 below for an aerial photograph of the site.



Figure 1: Site Map

### 3 NOISE DESCRIPTORS

Environmental noise constantly varies. Accordingly, it is not possible to accurately determine prevailing environmental noise conditions by measuring a single, instantaneous noise level.

To accurately determine the environmental noise a 15-20 minute measurement interval is utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters.

In analysing environmental noise, three-principle measurement parameters are used, namely  $L_{10}$ ,  $L_{90}$  and  $L_{eq}$ .

The  $L_{10}$  and  $L_{90}$  measurement parameters are statistical levels that represent the average maximum and average minimum noise levels respectively, over the measurement intervals.

The  $L_{10}$  parameter is commonly used to measure noise produced by a particular intrusive noise source since it represents the average of the loudest noise levels produced by the source.

Conversely, the  $L_{90}$  level (which is commonly referred to as the background noise level) represents the noise level heard in the quieter periods during a measurement interval. The  $L_{90}$  parameter is used to set the allowable noise level for new, potentially intrusive noise sources since the disturbance caused by the new source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the  $L_{90}$  level.

The  $L_{eq}$  parameter represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the 15 minute period.  $L_{eq}$  is important in the assessment of traffic noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of environmental noise.

## 4 BACKGROUND NOISE MONITORING

As part of this assessment, unattended noise monitoring has been conducted in the vicinity of the project to determine the existing background noise levels.

### 4.1 MEASUREMENT LOCATION

A background noise monitor was installed at the north-western boundary of the project site, near the Oceangrove retirement village (see figure 1).

### 4.2 MEASUREMENT PERIOD

The long term monitoring was conducted from the 4<sup>th</sup> to the 11<sup>th</sup> August 2014.

### 4.3 MEASUREMENT EQUIPMENT

Equipment used consisted of an Acoustic Research Laboratories Pty Ltd noise logger. The logger was set to A-weighted fast response and was programmed to store 15-minute statistical noise levels throughout the monitoring period. The monitor was calibrated at the start and end of the monitoring period using a Rion NC-73 calibrator. No significant drift was noted. The noise logger data is provided in Appendix 1.

### 4.4 MEASUREMENT RESULTS-RATING BACKGROUND NOISE LEVELS

The table below presents the assessed background noise levels (dB(A)<sub>L90</sub>) for the day time period (7am-6pm) for all of the days during the week and for Saturday.

The assessed background noise level for each day is calculated by taking the lowest tenth percentile background noise level of each day.

**Table 1 – Measured Rating Background Noise Levels, dB(A) L<sub>90</sub>**

| LOCATION                                  | PERIOD/TIME      | DAY                              | RATING BACKGROUND NOISE LEVEL<br>dB(A) L <sub>90</sub> |
|---|------------------|----------------------------------|--|
| North-Western Boundary<br>of Project Site | Day (7am to 6pm) | Monday 4 <sup>th</sup> August    | 44.0   |
|   |                  | Tuesday 5 <sup>th</sup> August   | 44.5   |
|   |                  | Wednesday 6 <sup>th</sup> August | 44.7   |
|   |                  | Thursday 7 <sup>th</sup> August  | 44.0   |
|   |                  | Friday 8 <sup>th</sup> August    | 44.6   |
|   |                  | <b>Median (Monday-Friday)</b>    | 44.5   |
|   | Day (7am to 6pm) | Saturday 9 <sup>th</sup> August  | 43.9   |
| Difference between Weekdays and Saturday  |                  |                                  | 0.6  |

## 5 DISCUSSION

ALC has been advised that since the commencement of operation of the Dee Why Kindergarten childcare centre in 2008, there have been no complaints from the neighbouring residents regarding noise emissions from the childcare centre (see attached letter in Appendix 2).

Based on the background noise monitoring data collected, it can be concluded that there is no significant difference in the daytime background noise levels around the childcare centre when comparing weekdays to Saturdays.

At most, the difference in background noise levels when comparing days during the week to Saturdays is less than 1dB(A)<sub>L90</sub>, which is an imperceptible difference.

It can therefore be concluded that the acoustic environment of noise receivers will remain unchanged on Saturdays. The operation of the childcare centre on Saturday would not generate any difference when compared against the Council approved weekday operation.

To ensure the acoustic amenity of the nearest residential receivers during the Saturday operation of the childcare centre, it is recommended that the management controls outlined in the Noise Management Plan prepared by this office (re: 2008859/1012A/R3/HM, dated 5<sup>th</sup> January 2009) are upheld.

In particular, the following management controls are stressed:

- Staff are to supervise children at all times to minimise noise, especially when children are using the outdoor play areas.
- Staff, parents and visitors are to be reminded to minimise noise when entering and exiting the childcare centre.
- No outdoor play after 6pm.

## 6 CONCLUSION


This letter presents our review for proposed extended trading hours of the Dee Why Kindergarten childcare centre at 2 Clarence Avenue, Dee Why. The existing operating hours of the childcare centre are 7am to 6.30pm Mondays to Fridays. The proposal is to extend the operating hours to include 7am to 6.30pm on Saturdays.

As part of this assessment, unattended noise monitoring has been conducted in the vicinity of the childcare centre in order to characterise the existing background noise levels. The results of the background noise monitoring are presented in section 4.4 and in Appendix 1 of this letter.

Based on the results of the unattended noise monitoring, it has been concluded that noise emissions from the project site during the Saturday operation of the childcare centre will not impact the acoustic amenity of the neighbouring residential receivers any more than on weekdays. This is discussed in detail in section 5.

We trust this information is satisfactory. Please contact us should you have any further queries.

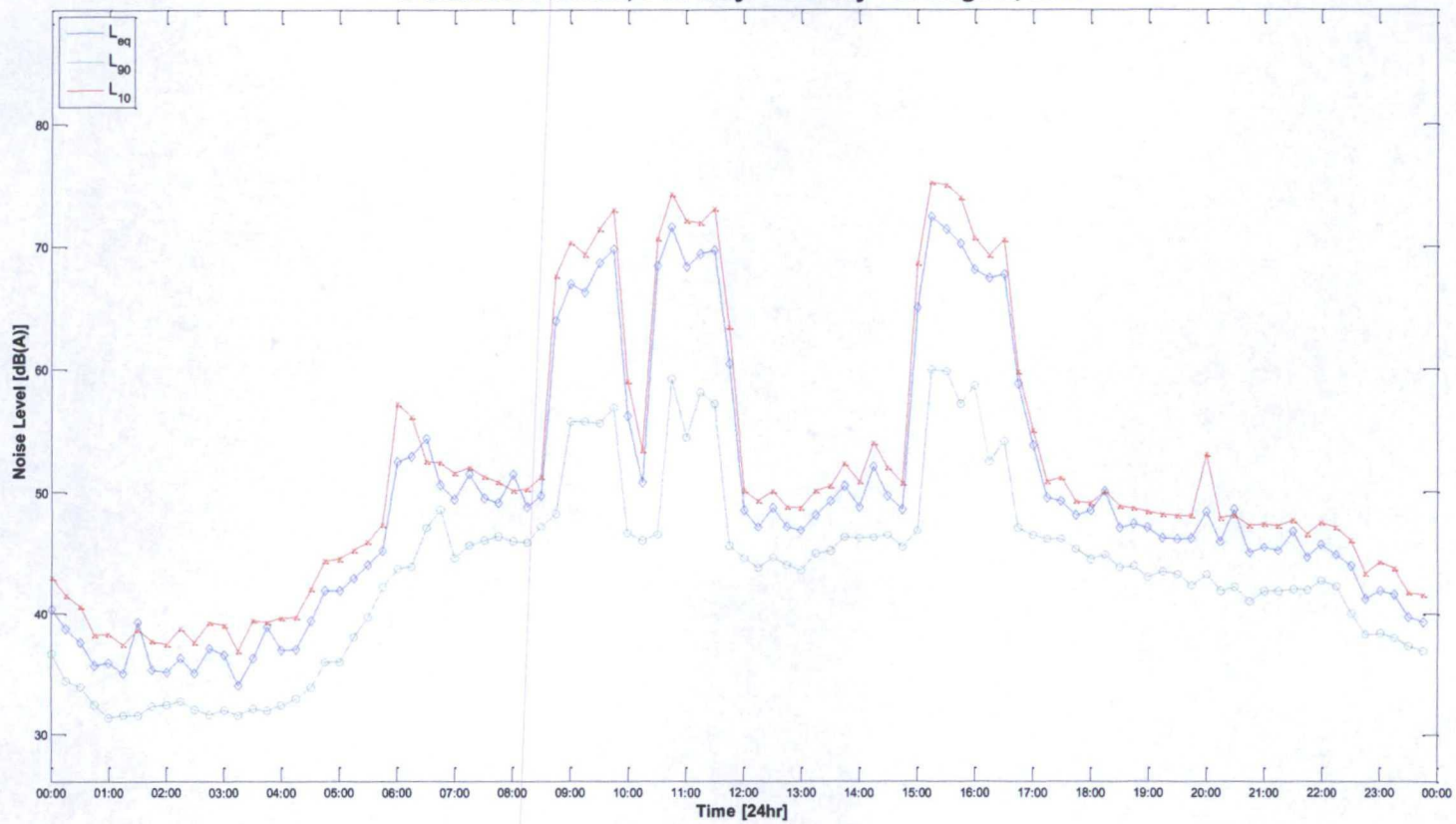
Yours faithfully,

A handwritten signature in black ink, appearing to read 'Justin Leong', with a horizontal line underneath the name.

Acoustic Logic Consultancy Pty Ltd  
Justin Leong

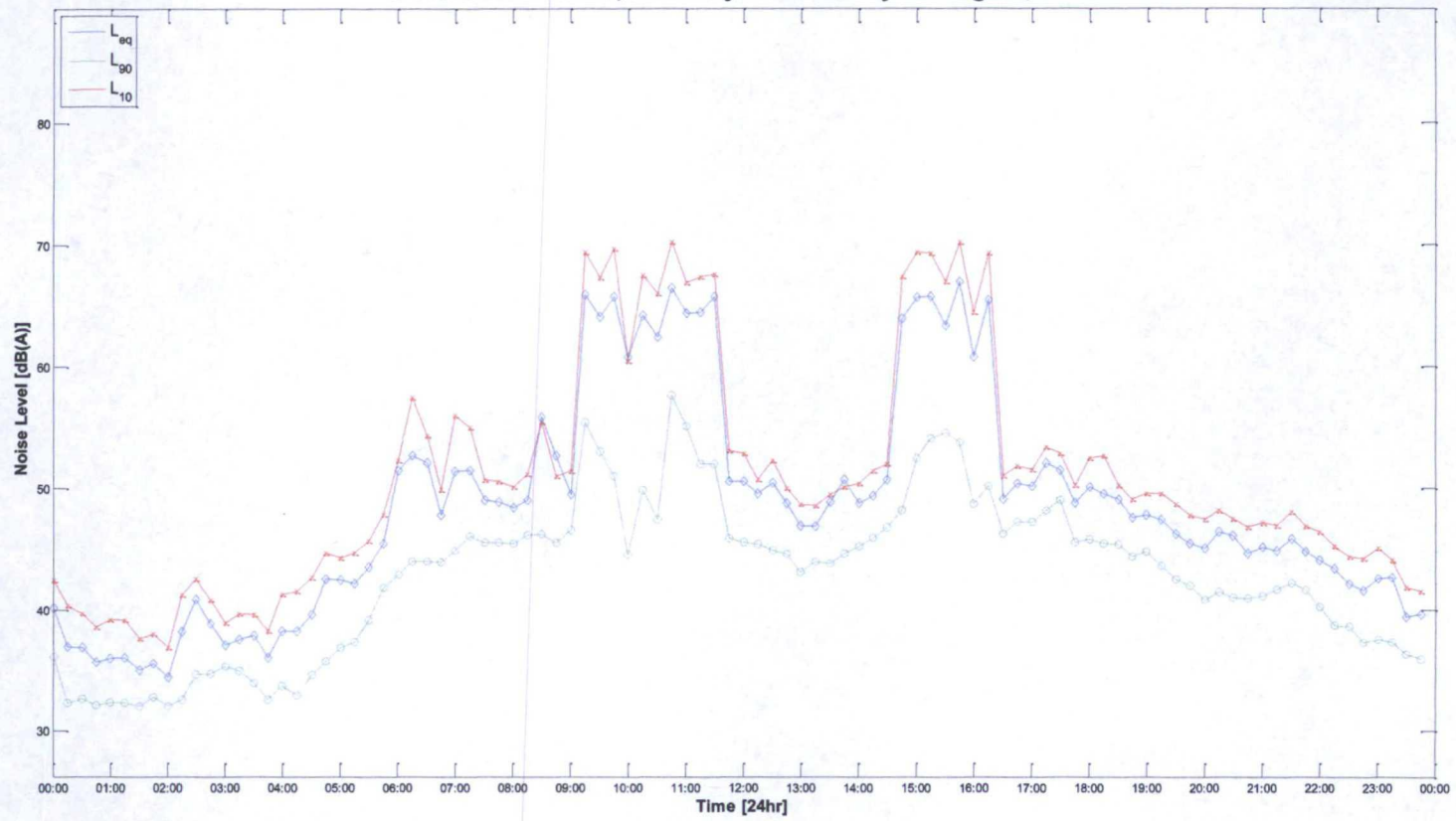
## APPENDIX 1 – NOISE MONITORING DATA

2 Clarence Avenue, Dee Why: Tuesday 05 August, 2014

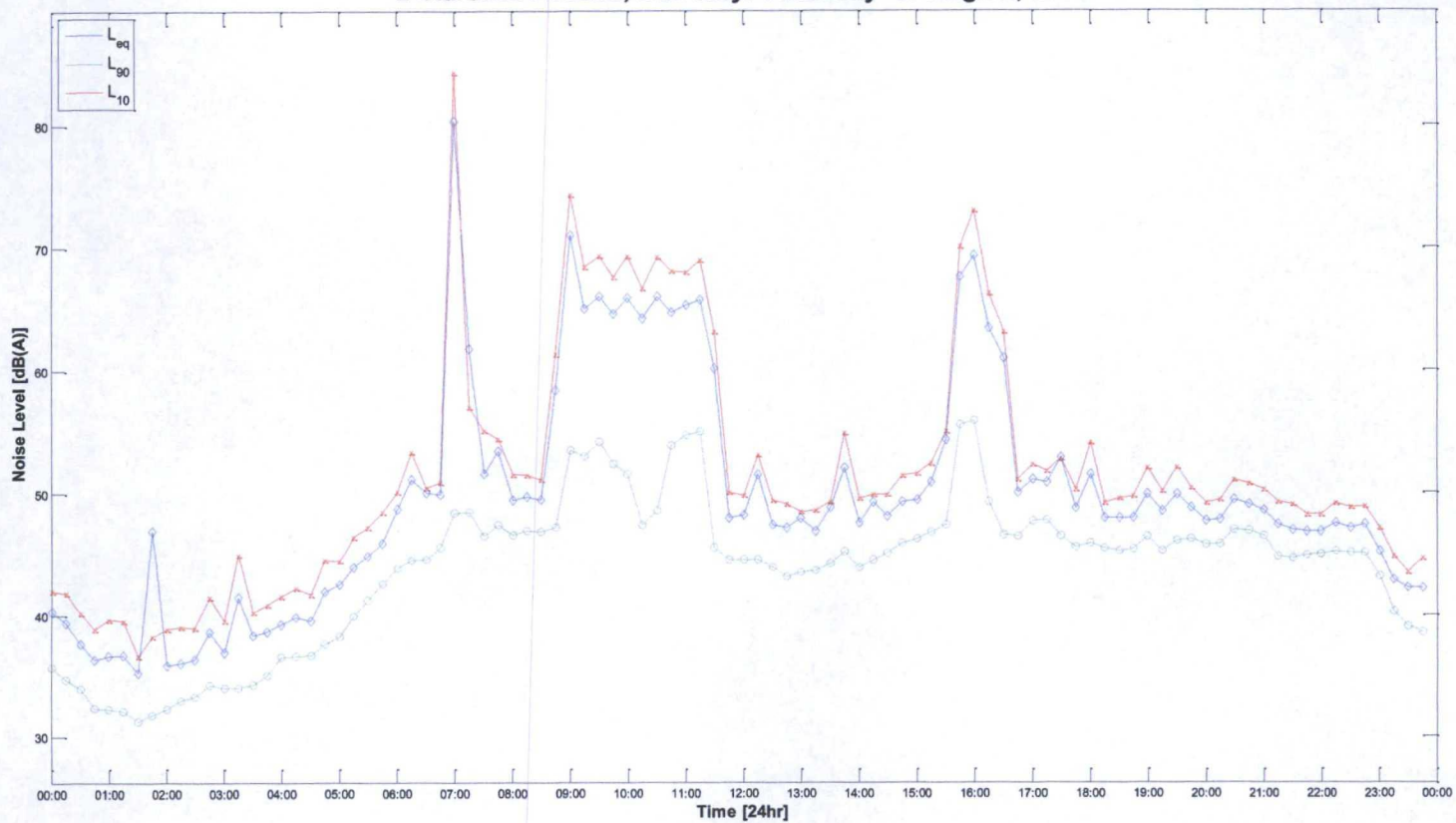




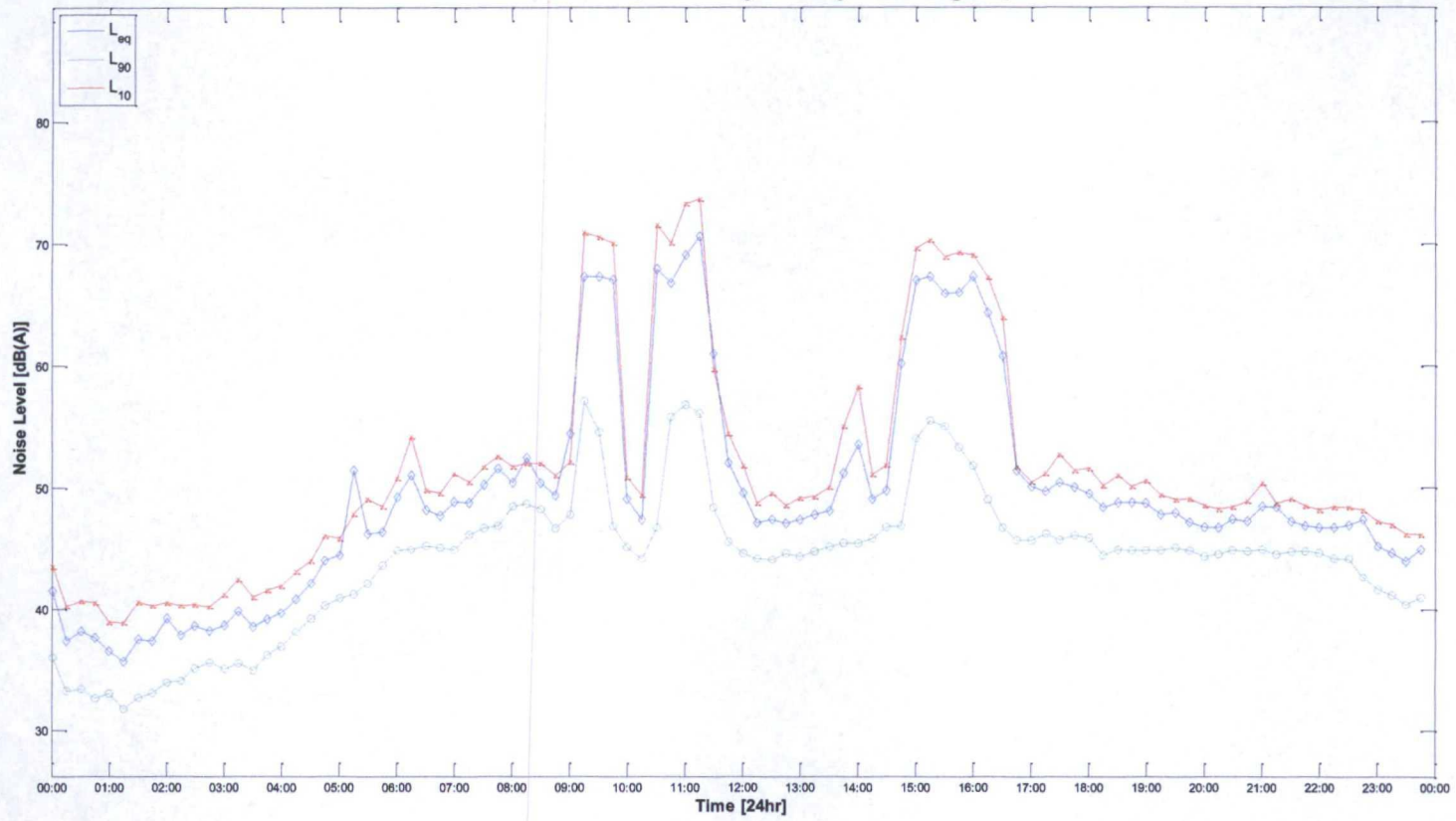
2 Clarence Avenue, Dee Why: Wednesday 06 August, 2014



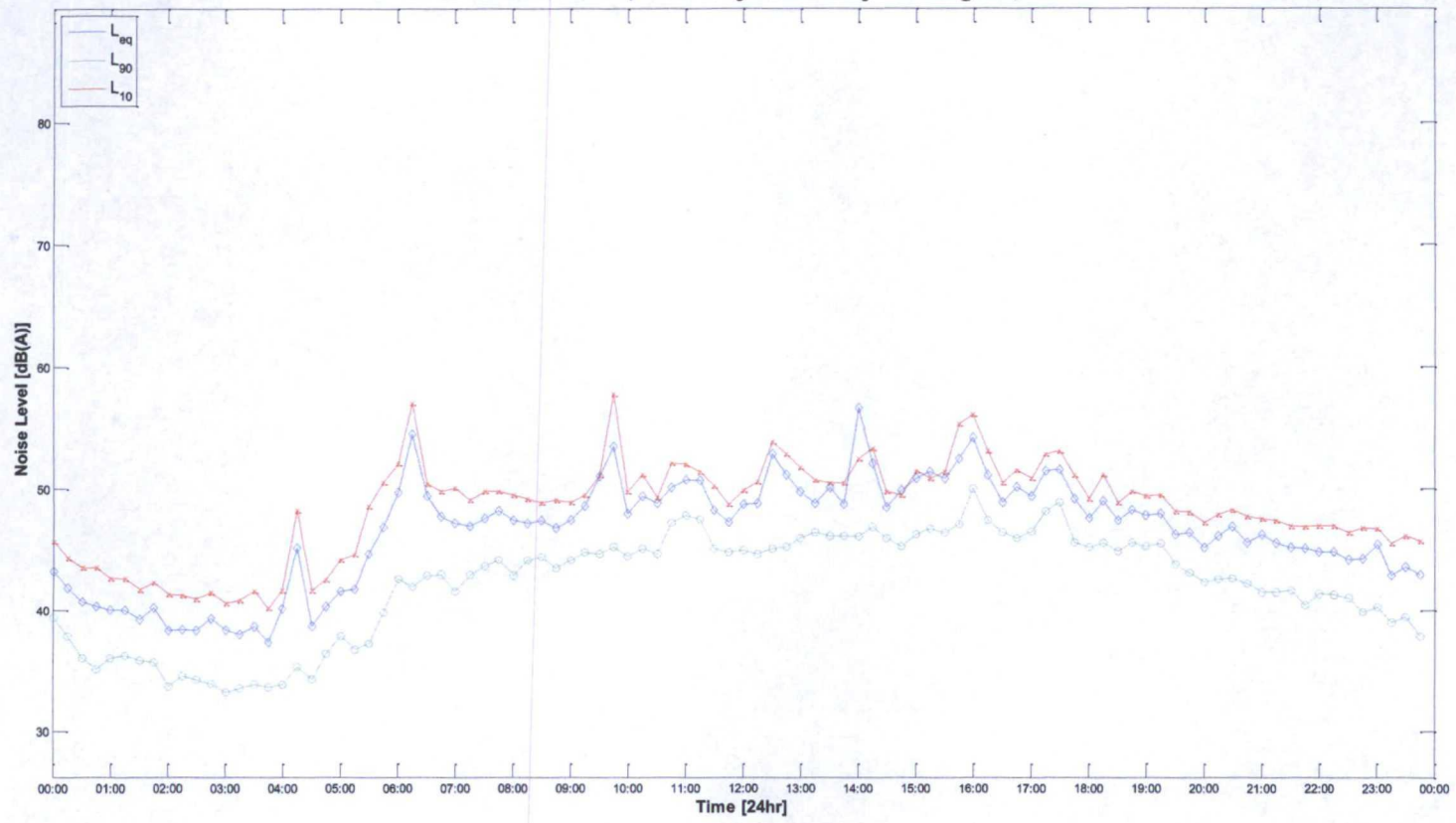
2 Clarence Avenue, Dee Why: Thursday 07 August, 2014



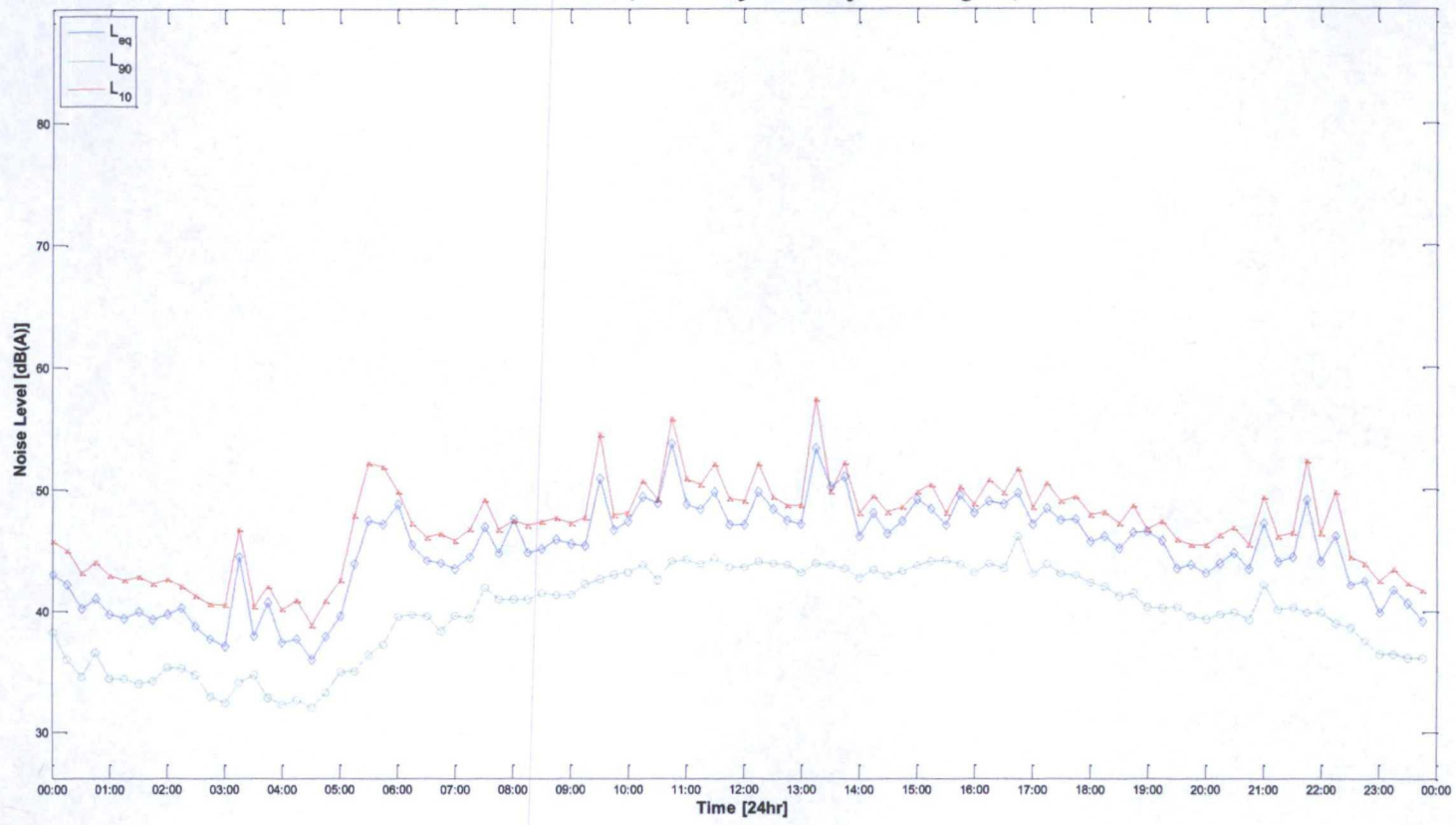
2 Clarence Avenue, Dee Why: Friday 08 August, 2014



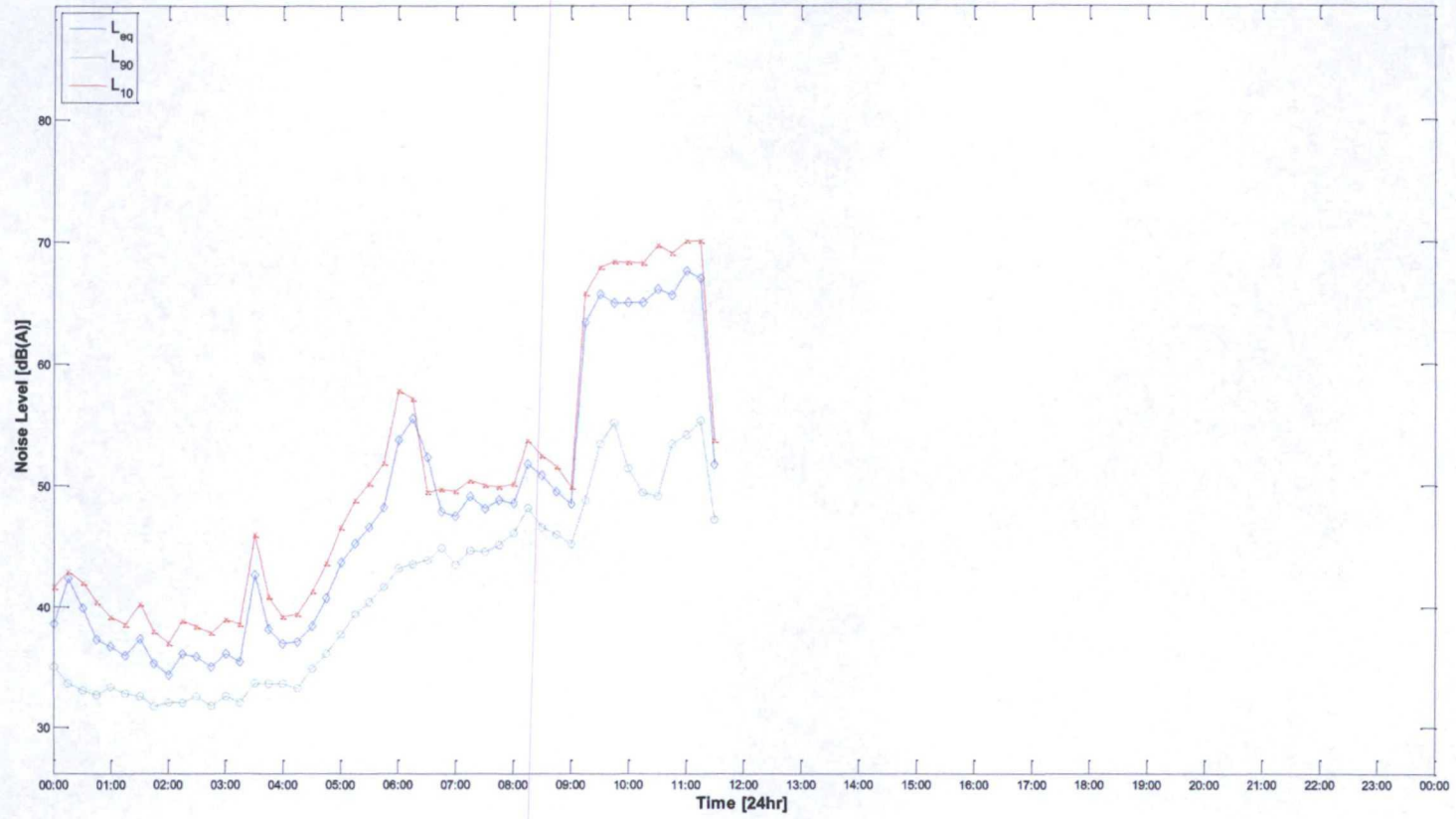
2 Clarence Avenue, Dee Why: Saturday 09 August, 2014



2 Clarence Avenue, Dee Why: Sunday 10 August, 2014



2 Clarence Avenue, Dee Why: Monday 11 August, 2014



**APPENDIX 2 – LETTER FROM CHILDCARE CENTRE DIRECTOR**