

BEFORE THE AUCKLAND UNITARY PLAN INDEPENDENT HEARINGS PANEL

IN THE MATTER the Proposed Auckland Unitary Plan
(31 September 2013)

AND

IN THE MATTER of Topic 081 – Rezoning and
Precincts (Geographic)

STATEMENT OF EVIDENCE BY NEVIL IAN HEGLEY

1 Introduction

1.1 My name is NEVIL IAN HEGLEY. I have the following experience and qualifications relevant to the evidence I shall give:

(a) I have more than 40 years' experience in civil engineering and for the last 35 years I have specialised in acoustics;

(b) I have an MSc from Southampton University where I undertook research in acoustics in 1975/76;

(c) I am a Chartered Professional Engineer, International Professional Engineer, a Member of the Institution of Professional Engineers New Zealand, the Institution of Civil Engineers London and the Acoustical Society of America;

(d) I have appeared on the majority of the Standards sub-committees dealing with sound issues since 1977 and I was the Chairman of both the 1984 and 1999 versions of the Construction Noise Standard NZS6803;

(e) In 2010 I received the Meritorious Award by Standards New Zealand for outstanding commitment to the development of New Zealand Acoustic Standards; and

(f) I have been involved with the noise planning and management of the New Zealand Steel site since its original development.

1.2 I have been asked by New Zealand Steel to address the noise issues associated with the operation of the existing Iron and Steel Production site in Mission Bush Road, Glenbrook and the effects of the proposed noise controls in the Proposed Auckland Unitary Plan (PAUP) in relation to this site.

- 1.3 I have read the code of conduct for expert witnesses contained in part 7 of the Environment Court Practice Note 2014. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

2 Background

- 2.1 I have been involved with the New Zealand Steel noise control and management since 1984 when I undertook a detailed study of the plant and made recommendations to the then Franklin District Council on what was considered to be a reasonable noise control for the operation of the plant. As a result of this work the noise rule in the current District Plan was adopted.
- 2.2 In accordance with the requirements of this rule I have undertaken noise monitoring around the site once every three months. In addition, I have been involved with the noise control treatment for the plant and checking of any significant modifications than have been undertaken around the site.
- 2.3 To the best of my knowledge there have only been three noise related complaints in the last 30 years. One was resolved by constructing a bund to screen the dwelling from plant operating on the internal roads of the site and a second complaint was related to a problem that occurred at the hydrogen plant (operated independently to NZ Steel). This problem was resolved by installing a small silencer although since then the plant has been rebuilt and does not have any noticeable contribution to the total noise environment. The noise associated with the third complaint was not generated by the plant.
- 2.4 Over the years the New Zealand Steel plant has always complied with the noise limits although there is not any significant factor of safety.

3 Current Noise Rule

- 3.1 The existing noise controls for the New Zealand Steel site are set out in the Auckland Council District Plan, Franklin Section. Rule 32.5.1, Operational Noise Levels sets the following noise limits:

All activities in the Zone shall be conducted or managed to ensure that the average CORRECTED NOISE LEVEL as measured at the six monitoring locations shown in Diagram 32.A does not exceed:

- *55 dBA (L₁₀) for Monday to Saturday excluding public holidays, 0700 to 2200 hours.*
- *45 dBA (L₁₀) for all other times, including Sunday and Public Holidays.*

CORRECTED NOISE LEVEL shall be as defined in Rule 50 provided that the Sound Level Meter shall be a Type 2 meter.

Averaging of Noise Levels:

Noise levels at any one monitoring location which exceed the aforementioned limits will be acceptable only where such exceeded levels can be clearly attributed to meteorological conditions.

In no case shall the measured noise level at any one monitoring location exceed the permitted maximums by more than 5dBA.

For the purpose of calculating any one average noise level, measurements from the six monitoring locations shall be taken consecutively over a continuous 6 hour period.

A correction of 2dBA shall be added to any measurements taken at monitoring locations 5 and 6.

Noise Monitoring:

Weather permitting, BHP New Zealand Steel Limited, shall monitor regularly the night time noise level generated by its operations. This monitoring shall be at intervals of no greater than three months and shall be from the 6 monitoring locations shown in Diagram 32.A. All information obtained from monitoring shall be forwarded to Council and to the Medical Officer of Health as a matter of course. Council reserves the right to require monitoring at shorter intervals and/or from additional locations as the need arises.

- 3.2 Diagram 32.A is shown below:

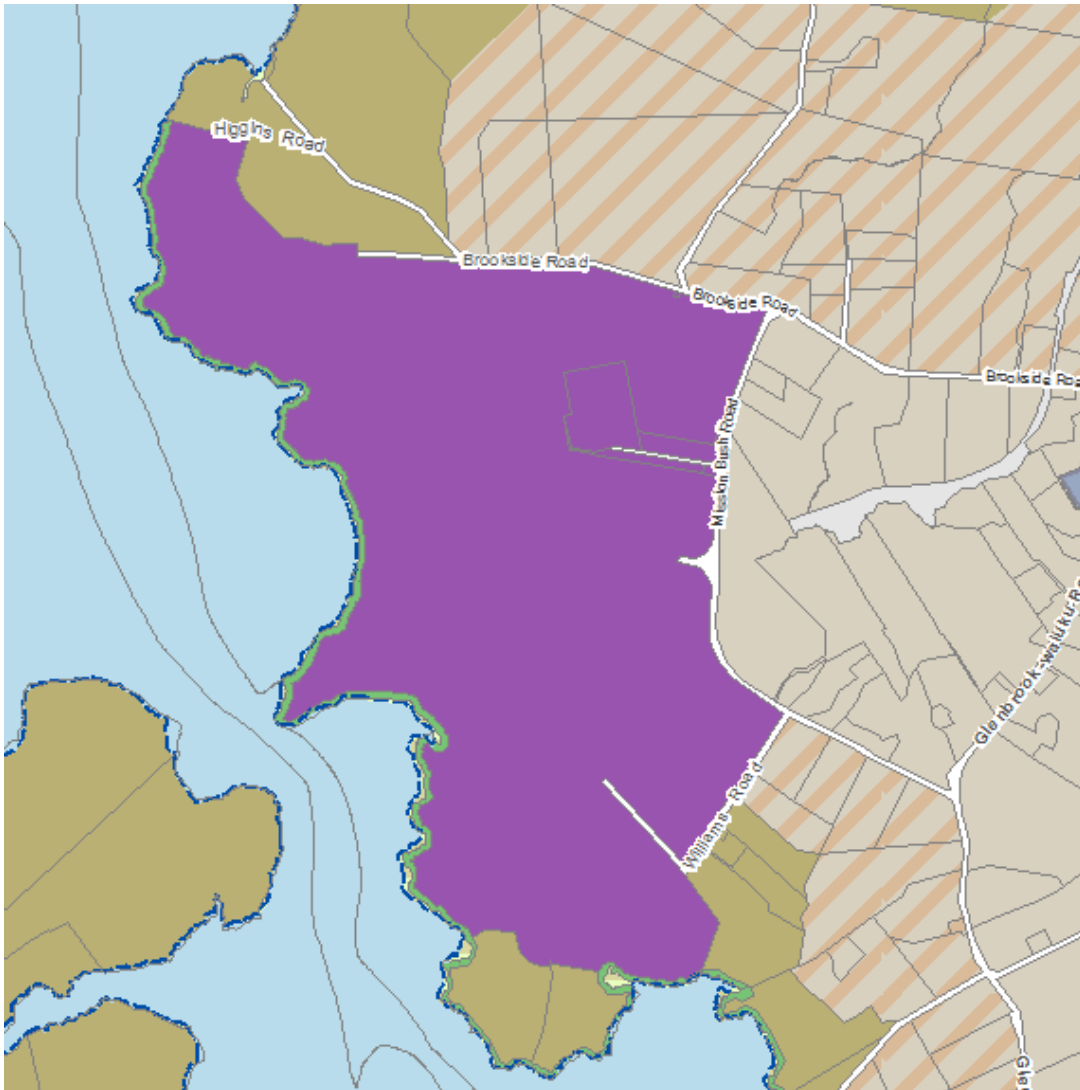
DIAGRAM 32.A: LOCATION OF NOISE MONITORING STATIONS

SCHEDULE OF NOISE MONITORING STATIONS (as shown on Diagram below):

- Station 1. Glenbrook Beach Road - 130 metres north of West Road intersection.
- Station 2. Reg Benett Road - 100 metres north of Glenbrook Road intersection.
- Station 3. Mission Bush Road - 140 metres east of Williams Road intersection.
- Station 4. Williams Road - on dog leg bend.
- Station 5. Rangiwhea Road, Waiuku - at boat ramp adjacent to Sandspit Reserve.
- Station 6. Maraeorahia Road - at north-eastern (no-exit) end.



- 3.3 The PAUP zones the New Zealand Steel site as Heavy Industry as shown below.



- 3.4 Chapter H6.2.1.2 “Noise arising from activities within zones” sets the following relevant noise limits for the New Zealand Steel site in section 7 as:

The noise (rating) level arising from an activity in the Industrial, General Business and Business Park and Marina zones measured within the boundary of any other site in those zones must not exceed the following levels limits.

Table 4

	<i>Business Park & Marina zone</i>	<i>General Business and Light Industry zones</i>	<i>Heavy Industry</i>
<i>All times</i>	<i>60dB L_{Aeq}</i>	<i>65dB L_{Aeq}</i>	<i>70dB L_{Aeq}</i>

Rule 1.3.8 “Noise arising from activities between zones” (It is assumed that in this section reference to the “Business Zone” include the Industrial Zone.)

The noise (rating) and maximum noise level from any activity on land in the Business, Centres, Mixed Use or Marina zones must not exceed the following limits when measured within the boundary of a site in a residential zone or within the notional boundary of property in a rural zone:

Monday to Saturday 7am - 10pm	55dB L_{Aeq}
Sunday 9am - 6pm	
All other times	45dB L_{Aeq} 60dB L_{eq} at 63 Hz 55dB L_{eq} at 125 Hz 75dB L_{AFmax}

4 Effects of the Proposed Changes

- 4.1 The PAUP adopts L_{Aeq} rather than L_{10} although as the noise from the New Zealand Steel site is steady state there will generally be little difference (1dB) between the two types of measurements.
- 4.2 I understand New Zealand Steel owns the total Heavy Industry Zone where their plant is located, as shown on Figure 1, so the requirement of proposed Rule H6.2.1.2 “Noise arising from activities within zones’ as quoted above will not be applicable and as such no changes are sought for this part of the rule.
- 4.3 There is concern that the noise levels must be complied with at all notional boundaries in terms of NZS6802:2008 Acoustics – Environmental Noise. This means the levels must comply for ‘slightly positive’ meteorological conditions rather than the neutral conditions currently required and designed for. The reason the current rule requires monitoring at six sites and the values averaged is to determine the level under neutral conditions. The PAUP requires slightly positive conditions (via NZS6801:2008 *Acoustics – Environmental Noise*), which will immediately make the plant non-complying with the proposed rule. Based on noise monitoring around the plant this will add up to 4dB to any single site compared to the level

currently required. The plant will not be able to achieve this requirement and based on my knowledge of the plant it would not be practical to upgrade the plant to achieve compliance with slightly positive conditions.

- 4.4 At the moment the control is set at a specific distance from the plant that represents the distances of dwellings from the plant both at the time of the original consent application. While this is still the case it would appear possible for a new dwelling to be built in the Rural Production Zone closer to the plant than the monitoring points, such as directly opposite the main gate or anywhere within the 45dBA circle on Diagram 32.A as set out above. It would be impractical to comply with the noise limits at potential house sites within the current 45dBA boundary.

5 Recommendations

- 5.1 In order to maintain the existing activities it is recommended that either the existing noise controls of the Iron and Steel Production zone be retained or the following noise control be adopted for the "Integrated Iron and Steel Production" Precinct:

Operational Noise

1. *All activities in the precinct shall be conducted and managed to ensure that the average noise level at the six monitoring locations shown in Diagram A does not exceed:*
 - 0700 to 2200 55dB $L_{Aeq(15min)}$
 - 2200 to 0700 45dB $L_{Aeq(15min)}$
75dB L_{AFmax}
2. *Subject to the following the noise shall be measured in accordance with the requirements of NZS801:2008 and assessed in accordance with the requirements of NZS6802:2008 -*

Averaging of Noise Levels:

3. *Noise levels at any one monitoring location which exceed the aforementioned limits will be acceptable only where such exceeded levels can be clearly attributed to meteorological conditions.*
4. *In no case shall the measured noise level at any one monitoring location exceed the permitted maximums by more than 5dB.*

5. *For the purpose of calculating any one average noise level, measurements from the six monitoring locations as shown on Figure [x] shall be taken consecutively over a continuous 6 hour period.*
6. *A correction of 2dB shall be added to any measurements taken at monitoring locations 5 and 6.*

5.2 This is essentially the same as the original noise control in the Iron and Steel Production zone with the following changes:

- i) The L_{10} has been replaced with L_{Aeq} ;
- ii) The hours have been changed to day and night periods as adopted in the PAUP. It is noted the plant is a 24 hour operation so the night time limit will control the levels;
- iii) A night time L_{AFmax} has been added to align with the PAUP;
- iv) NZS6801 and NZS6802 are updated to the 2008 versions;
- v) The three monthly monitoring has been dropped. After 30 years of monitoring and no breaches of the noise controls the three monthly monitoring seems redundant. The proposed rules in the PAUP do not require any other industry to undertake ongoing monitoring; this includes the proposed noise condition in the PAUP for this site.

6 Conclusions

- 6.1 The 'Auckland-wide' noise rules, as proposed in the PAUP for the New Zealand Steel site, will result in non-compliance and to reduce the noise from the site by nominally 4dB will be impractical. The required reduction would be greater if a dwelling were to be constructed closer to the New Zealand Steel site, which is a possibility.
- 6.2 New Zealand Steel requests the existing noise limits to be adopted, although slightly modified to reflect the use of L_{Aeq} and the latest Standards. This would not disadvantage anyone in terms of the current conditions and would provide long term security for New Zealand Steel.

Nevil Hegley
10 February 2016