

STATEMENT OF EVIDENCE

IN THE MATTER of the Resource Management Act 1991 (RMA)

AND

IN THE MATTER of a land use consent by GBC Winstone for the placement of overburden from the Otaika quarry on land legally described as Part Lot 2 DP 53728 and Part Lot 2 DP 363982.

**STATEMENT OF EVIDENCE OF PETER RUNCIE
ACOUSTICS
DATED 3 OCTOBER 2017**

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1. **Introduction**

- 1.1 My full name is Peter Michael Runcie.
- 1.2 I have a Bachelor of Science degree with honours from the University of Salford in England.
- 1.3 I am currently employed as an Associate Consultant by SLR Consulting NZ Limited, specialising in the field of noise and vibration. I have held that position since August 2016, prior to this I was an acoustic specialist at Golder Associates (NZ) Limited.
- 1.4 I have worked in acoustic consultancy for over ten years. I have worked on a range of projects within the United Kingdom, Europe, Middle East, Australia and New Zealand. During this time I have been involved in a wide range of acoustic assessments and have undertaken numerous technical peer reviews for Councils across New Zealand.

2. **Code of Conduct**

- 2.1 I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is entirely within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

3. **Scope of this evidence**

- 3.1 My evidence will address the following:
 - (a) My peer review of the Marshall Day Acoustics (MDA) report dated 22 May 2017 (the MDA assessment);
 - (b) Comments relating to the acoustic queries raised in submissions received; and
 - (c) Suggested conditions of consent relating to noise and vibration.

4. **Executive Summary**

- 4.1 The key finding of my peer review of the MDA assessment is that I consider the suggested 'construction' noise limits for the Enabling Works to be too relaxed. I have suggested reasonable noise limits for the proposed activities. Additional mitigation measures are likely to be necessary during the closest Enabling Works in order to reduce noise levels at the most exposed receivers to the north of the proposed activity to reasonable levels.
- 4.2 The noise related queries raised in submissions focused largely on amenity effects. In my opinion such effects can be adequately controlled through the application of appropriate noise limit conditions supported by a requirement for compliance monitoring and reporting, and remedial action where required.
- 4.3 I have nominated conditions of consent relating to noise and vibration which reflect the requirements and anticipated noise levels of the Whangarei District Plan (the Plan) and aim to control acoustic effects at surrounding noise sensitive premises.

5. **Review of MDA Assessment**

Proposed Activity

- 5.1 The MDA assessment identifies that the Pegram Block (the Site) is proposed to be used for the placement of overburden material from the adjacent Otaika Quarry.
- 5.2 The proposed activity is split into two elements, Enabling Works and General Works. The proposed works will occur on the eastern portion of the Site (Figure 1 of the MDA assessment).

MDA Proposed Noise Limits

- 5.3 The MDA assessment notes that the site is zoned *Countryside* under the Plan. A portion of the site lies within Mineral Extraction Area Overlay ME3 (the ME3 Overlay). The majority of the Enabling Works are located outside the ME3 Overlay; whereas the location of the proposed General Works sits largely within the ME3 Overlay area.

- 5.4 The Plan contains separate noise limits for construction (70 dB LAeq), and for activities undertaken within sites zoned Countryside (50 dB LAeq) and activities within the ME3 Overlay (55 dB LAeq). The noise limits for mineral extraction activities in the ME3 Overlay are noted to be 5 dB higher. A difference of 5 dB may be described as a clearly noticeable or moderate change in noise level.
- 5.5 On the basis of the Assessment of Environmental Effects (AEE) prepared by Boffa Miskell Limited (BML), the MDA assessment assumes that the proposed activity is considered to be a 'mineral extraction activity'. However, the MDA assessment considers the Enabling Works to be 'construction' activities and therefore subject to the more relaxed noise limits afforded to construction activities.
- 5.6 On this basis the MDA assessment identifies the following noise limits for the proposed activity:
- (a) *Enabling Works – 70 dB LAeq and 85 dB LAmax between 07:30 and 18:00 hours.*
 - (b) *General Works, within ME3 Overlay – 55 dB LAeq between 06:30 and 21:30 hours at notional boundary of properties zoned Living 3 and the site boundary for those zoned Living 1.*
 - (c) *General Works, outside ME3 Overlay – 50 dB LAeq between 07:00 and 22:00 hours at notional boundary of properties zoned Living 3 and the site boundary for those zoned Living 1.*
- 5.7 The key elements in determining which noise limits apply to which activities in this instance are the definition of 'mineral extraction activities' and the proposed activities involved in Enabling Works.
- 5.8 Mineral extraction activities are defined in the Plan as including: *“the removal of overlying earth and soil; the stacking, crushing, storing, depositing, treatment, transportation and sale of excavated materials; and the works, machinery and plant used to undertake the activities above.”*
- 5.9 Enabling Works are described in the application as *“securing the site, initial stripping and storage of topsoil, construction of haul roads, toe area work*

including shear key and buttress construction including placement of matted material, site drainage and all work associated with the Te Waiiti Stream". Furthermore, the Enabling Works are noted as likely to take place for 6-8 months at a time over two earthworks seasons.

- 5.10 The General Works component of the proposed activity are described as *"Topsoil will be stripped and stored in a dedicated storage area on the northern side of haul road or be placed on completed slopes; Trucks will travel from quarry and place the overburden in the current campaign area; A single bulldozer will move the overburden into place; and the area of overburden placement will be stabilised"*.
- 5.11 Based on the Plan definition, the description of the Enabling Works and the General Works and the duration of the Enabling Works, it is my opinion it is not reasonable to categorise the Enabling Works as a construction activity and that both the Enabling Works and the General Works fall within the Plan definition of 'mineral extraction activities'.
- 5.12 Given that the Plan contains specific noise limits for mineral extraction activities within the ME3 Overlay and the similarity in the proposed activities involved in both the Enabling Works and the General Works, my interpretation of the Plan is that the MDA suggested 'construction' noise limits would not be appropriate for the Enabling Works as described.
- 5.13 I consider that the application of the construction noise limits (70 dB L_{Aeq}) for the entirety of the Enabling Works would likely result in adverse noise effects at the surrounding receivers over the extended duration of the works, and would not be considered reasonable in the context of Section 16 of the RMA.
- 5.14 The exception may be short-term site preparation activities such as securing the site and the construction of noise bunds or barriers. For those activities, which by necessity may need to take place closer to receivers but are short in duration, the application of the construction noise limits would be appropriate.
- 5.15 The ME3 Overlay does not encompass the whole project area. This means there are two potential activity noise limits in the Plan which could be applied to non-construction activity on the site depending on whether the activity is

taking place within the ME3 Overlay or not. Enforcing different limits for activities taking place at different locations around the site (some of which may cross from one area to another within a short period of time) is likely to be problematic with respect to monitoring and managing noise emissions.

5.16 Given that the majority of the proposed works would be within the ME3 Overlay and fall within the Plan definition of 'mineral extraction activities', and considering the longevity of the project, I consider the application of the Plan ME3 overlay noise limits for both the Enabling Works and the General Works to be appropriate and reasonable, as follows:

- (a) 55 dB L_{Aeq} between 06:30 and 21:30 hours at the notional boundary of properties zoned Living 3 and the site boundary of properties zoned Living 1.
- (b) 45 dB L_{Aeq} and 70 dB L_{AFmax} between 21:30 and 06:30 hours at the notional boundary of properties zoned Living 3 and the site boundary of properties zoned Living 1.

5.17 Whilst the ME3 Overlay noise limits are higher than the Countryside zone limits, it is noted that the daytime limit (55 dB L_{Aeq}) is consistent with the upper range of the World Health Organisation (WHO) recommended noise levels in outdoor amenity spaces, the aim of which is to prevent the majority of the population being moderately or seriously annoyed by noise. Therefore, I consider such a limit to be reasonable.

MDA Proposed Vibration Limits

5.18 The MDA assessment identifies the Plan vibration limits for construction activities and suggests a limit of 1 mm/s PPV at surrounding dwellings. The assessment notes that, due to the activities proposed and the distance to receivers, the operation will not give rise to non-compliant levels of vibration.

5.19 Whilst, as noted earlier in my evidence, I do not consider the proposed works to be 'construction' activities; neither would they be considered continuous stationary sources of vibration. As such, based the activities proposed, I consider the proposed vibration limit to be reasonable to avoid adverse effects.

5.20 I consider MDA assumption to be reasonable with respect to the likelihood of the activity generating levels of vibration exceeding the identified limit and have, therefore, not considered vibration effects further in my review beyond suggested conditions of consent.

Affected Party Approval

5.21 The applicant has identified receipt of affected party approval from the owners of the following properties:

- (a) 1 Grove Lane
- (b) 5-7 Grove Lane
- (c) 6 Grove Lane
- (d) 11 Grove Lane
- (e) 30 Acacia Drive
- (f) 19 Awatea Street (Flat 1)
- (g) 21 Awatea Street
- (h) 23 Awatea Street
- (i) Other than noting that predicted noise levels from the Enabling Works and the General Works at those properties are generally within 5 dB of the mineral extraction activity 55 dB LAeq limit, I have not considered noise effects at these properties further in my evidence.

MDA Predicted Noise Levels

5.22 The predicted noise levels during the Enabling Works and the General Works are shown in Tables 2, 3 and 4 of the MDA assessment.

5.23 Enabling Works noise levels will be the noisier of the two assessed activities and are predicted to range from 36 dB LAeq to 67 dB LAeq at the surrounding properties. The predicted Enabling Works noise levels exceed the ME3 Overlay limit (55 dB LAeq) at 3 Grove Lane, 10 Wattle Lane, 29 Acacia Drive

and 31 Acacia Drive. The exceedances range from 4 dB to 12 dB, the worst-case being at 31 Acacia Drive.

- 5.24 Based on the MDA predicted levels, the use of the quieter 'supplementary' plant¹ for works closest to those 'affected' receivers could reduce levels at 3 Grove Lane, 10 Wattle Lane and 29 Acacia Drive to within the 55 dB LAeq limit.
- 5.25 Based on my experience and observations made during a site visit on 26 September 2017, it appears to be feasible to reduce the noise levels at 31 Acacia Drive to meet the identified ME3 Overlay limit (55 dB LAeq) by way of a combination of the use of quieter plant, limiting the amount of time plant can operate close to the receiver and the use of noise barriers or bunding (either local to the source or at the receiver) to interrupt the line-of-sight between the noise source/s and the receiver.
- 5.26 General Works noise levels are predicted to range from 36 dB LAeq to 55 dB LAeq at the surrounding properties for which no affected party approval was obtained.

6. Submissions Received

- 6.1 Following notification of the application, a number of submissions were received. Of these submissions, 18 opposing the application raise concerns regarding noise². The comments are similar in nature and generally relate to the potential adverse effects of noise generated by the activity on the amenity of residents surrounding the proposed activity. A number of submissions also raised concerns regarding the effect of reducing the 'buffer' or setback distance from the existing quarry activity.
- 6.2 I have already provided comment on noise amenity effects earlier in my evidence. With respect to the Plan and WHO I have identified noise limits I

¹ Supplementary plant as identified in Table 1 of the MDA assessment.

² Acacia Park, Arrol and Lowe-Arrol, Barclay, C and L Sawyer, C Thomas, Connew and Lemon-Connew, Dalton, Elmes, Halliwell, Johnston, Mosley, Norman and Spencer, Povey and McQuade, Tonkin, Swayer and Scott, Southern Whangarei Action Group, Barton and Taylor and Coates.

consider to be reasonable in relation to outdoor amenity. The MDA assessment suggests that this level may be exceeded at a small number of receivers; however, it is my opinion that through careful management and planning of the works this limit can be complied with.

- 6.3 I understand that the 'buffer' setback referred to in the submissions is the ME3 Overlay in the Plan and that this application does not seek to change this. Noise levels, and associated amenity effects, generated by activity on the Site, however, are related to the relevant activity noise limits in the Plan. In this instance daytime noise limits of 50-55 dB L_{Aeq} apply to activities on the Site and would apply to a wide range of activities including 'mineral extraction activities' and earthworks.

7. **Suggested Conditions of Consent**

- 7.1 The following conditions are suggested to control noise and vibration effects at the surrounding properties.
- (a) No work shall take place on the site outside of the hours of 07:00 to 18:00 Monday to Friday and 07:00 to 14:30 Saturdays. There will be no work outside of these hours, including on Sundays and public holidays.
 - (b) Noise generated by activities to secure the site and construct noise bunds/barriers noise shall not exceed the limits in NZS 6803: 1999 *Acoustics – Construction Noise*.
 - (c) Noise generated by the Enabling Works and the General Works (those activities as defined within the Whangarei District Plan as 'mineral extraction activities') shall not exceed:
 - (i) 55 dB L_{Aeq} between 06:30 and 21:30 hours at the notional boundary of properties zoned Living 3 and the site boundary of properties zoned Living 1.
 - (ii) 45 dB L_{Aeq} and 70 dB L_{AFmax} between 21:30 and 06:30 hours at the notional boundary of properties zoned Living 3 and the site boundary of properties zoned Living 1.

- (d) Within three (3) months of the Enabling Works commencing, the consent holder shall submit to Whangarei District Council a noise report with noise measurement results to confirm compliance with the noise limits set in this consent.
- (e) Within three (3) months of the General Works commencing, the consent holder shall submit to Whangarei District Council a noise report with noise measurement results to confirm compliance with the noise limits set in this consent.
- (f) Vibration generated by any activity on the site shall not exceed 1 mm/s peak particle velocity (PPV) between 07:00 and 18:00 hours at any occupied noise sensitive receiver.

8. Conclusion

- 8.1 For the reasons set out in this evidence, I consider that the application of construction noise limits to the Enabling Works is likely to result in adverse noise effects at the most exposed receivers.
- 8.2 I have identified what I consider to be appropriate noise limits for the proposed activities which seek to provide a balance between reasonable outdoor amenity levels at the surrounding properties and the anticipated noise levels for the proposed type of activity as anticipated within the Plan.
- 8.3 Based on the evidence provided in the MDA assessment and observations during my site visit I believe that compliance with these noise limits is feasible.
- 8.4 Given the distance between sensitive receivers and the proposed activities, and the type of activities proposed, I do not consider that the proposed activity is likely to generate vibration levels that would result in adverse effects.
- 8.5 I have proposed conditions to address the effects of noise and vibration generated by the proposal.

Peter Runcie

3 October 2017