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Dear Eloise

### MCPHERSON QUARRY – FURTHER INFORMATION

As requested by the Waikato District Council, I have checked the noise level at 1m from the façade of the two storey dwellings near the McPherson Quarry. The noise levels experienced at the two storey dwellings, shown on Figure 1, are set out in Table 1.

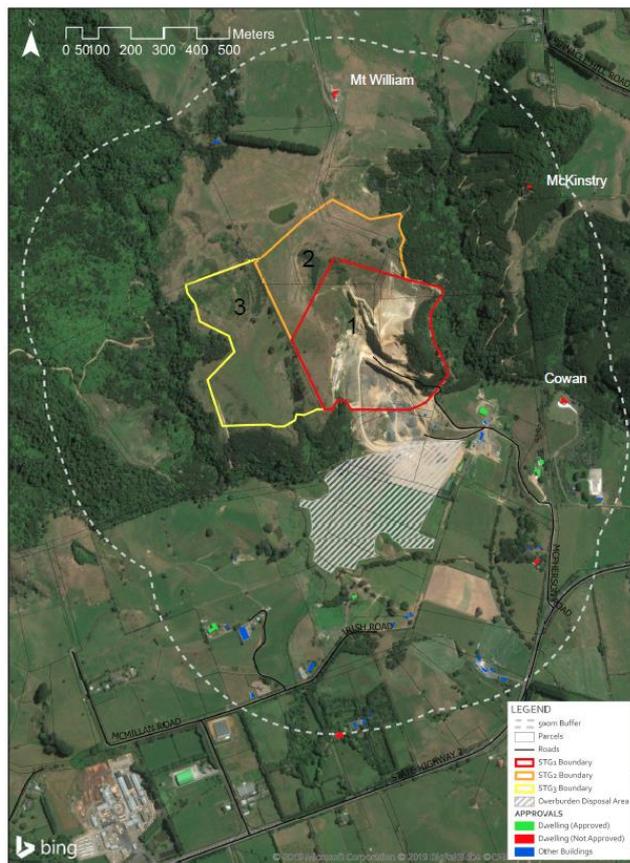


Figure 1. Location of two storey dwellings

**Table 1. Predicted noise levels at dwellings, dB L<sub>Aeq</sub>**

| Activity                                        | Dwelling             |           |         |
|-------------------------------------------------|----------------------|-----------|---------|
|                                                 | Mt William           | McKinstry | Cowan   |
| Existing quarry (Figure 18 <sup>1</sup> )       | -                    | -         | 45/46dB |
| Stage 1 quarry (Figure 19 <sup>1</sup> )        | -                    | -         | 48/49dB |
| Stage 3 quarry (Figure 20 <sup>1</sup> )        | -                    | -         | 45/46dB |
| Quarry + rock drilling (Figure 1 <sup>2</sup> ) | 42/44dB <sup>3</sup> | 39/40dB   | -       |
| Quarry only (Figure 2 <sup>2</sup> )            | 40/43dB              | 38/39dB   | -       |

1. As shown in report number 18185 dated 9 October 2018.
2. As shown in RFI letter dated 24 July 2019.
3. 42/44dB equals the noise at the notional boundary (1.5m above ground level) / noise at 1m from the façade of the first level (1.5m above the floor of interest).

The Council has also requested an assessment of noise effects addressing the noise impacts on normal day to day residential activities.

The existing noise environment has been measured at the closest dwelling to the north of the quarry site (231 Pinnacle Hill Road) at 44dB L<sub>Aeq</sub> and the 40dB L<sub>A90</sub> as reported in our letter dated 5 August 2019. For the group of dwellings between 211 – 221 Pinnacle Hill Road the existing noise environment was measured in calm and mild conditions at typically 39dB L<sub>Aeq</sub> and 35dB L<sub>A90</sub>. The noise at 231 Pinnacle Hill Road was controlled by traffic on SH2 and for the dwellings around 211 – 221 Pinnacle Hill Road distant traffic could be heard at times although it was the general noise environment that controlled the levels. In each case, there was no farm noise of any type influencing the noise environment.

For the closer houses on the southern side of the quarry at 57B and 77 Irish Road the measured noise levels in calm and mild conditions are 49dB L<sub>Aeq</sub> and 46dB L<sub>A90</sub>. This noise level was controlled by traffic on the nearby SH2. There was not any farm related noise heard during the measurement period.

At 231 Pinnacle Hill Road the upper limit of quarry noise is predicted at 42dB L<sub>Aeq</sub>, which is 2dB L<sub>Aeq</sub> below the existing 44dB L<sub>Aeq</sub> level and 2dB above the existing L<sub>A90</sub> level. There are no noise limits in the Operative District Plan although the Proposed District Plan adopts a 50dB L<sub>Aeq</sub> limit for a permitted activity in the Rural Zone, which is 6dB L<sub>Aeq</sub> above the highest noise level predicted from the quarry activities. When considering the above any noise from the proposed quarry activities will be below the measured existing noise environment and well within what may be assumed to be the permitted baseline limit. At the predicted level any noise from the quarry will not adversely affect the normal day to day residential activities at this site.

For the dwellings at 211 – 221 Pinnacle Hill Road the existing noise environment is typically 39dB L<sub>Aeq</sub> and 35dB L<sub>A90</sub>. The upper predicted quarry noise (including rock drilling) at these sites is 33 – 36dB L<sub>Aeq</sub>, which is 3 – 6dB L<sub>Aeq</sub> below the noise from the quarry and generally at or below the existing background sound (L<sub>A90</sub>). The predicted levels from the noisiest quarry activities will be below the existing environmental noise in this area so there will not be any adverse effects on the normal day to day residential activities for these residents.

For the closer houses on the southern side of the quarry at 57B and 77 Irish Road the upper level of quarry noise is predicted to be 39 and 48dB  $L_{Aeq}$  respectively. As set out above, the measured noise in this locality on a calm day is 49dB  $L_{Aeq}$  and 46dB  $L_{A90}$ . While the upper limit of the quarry noise is predicted at 2dB above the background sound (it takes an increase of 3dB to be just noticeable), the quarry noise will be below the existing environmental level of 49dB  $L_{Aeq}$  at both sites. Thus, there will not be any adverse effects on the normal day to day residential activities for these residents.

Should you have any questions regarding the above please do not hesitate to contact me.

Yours faithfully  
Hegley Acoustic Consultants



Nevil Hegley