

**Before the Hearing Panel appointed by Canterbury
Regional Council**

IN THE MATTER OF The Resource Management
Act 1991

**AND
IN THE MATTER OF** Applications CRC204106,
CRC204107, CRC204143,
CRC211629 and RC204105 to
establish, operate, maintain
and rehabilitate an aggregate
quarry by Taggart Earthmoving
Limited

SUMMARY STATEMENT

**SECTION 42A REPORTING OFFICER
CANTERBURY REGIONAL COUNCIL/WAIMAKARIRI DISTRICT
COUNCIL
NOISE – WILLIAM REEVE**

DATED: 7 MAY 2021

INTRODUCTION

1. My name is William Reeve. I am a Senior Acoustic Engineer with Acoustic Engineering Services and my qualifications and experience are outlined in my Section 42A report.
2. While this is a Council Hearing, I acknowledge that I have read the Environment Court's Code of Conduct for Expert Witnesses as contained in section 7 of the Environment Court Practice Note 2014, and have complied with it in the preparation of this summary.

SCOPE OF REPORT

3. This report is an addendum to my primary Section 42A report which is included as Appendix 6 of the Section 42A Officer's Report circulated on 8 April 2021. The purpose of this addendum is to provide a summary of my report and respond to matters raised in the Applicant's evidence (and submitter evidence).
4. Key items have been discussed in the Joint Witness Statement (JWS) dated the 30th of April 2021 which I prepared with Jon Farren of Marshall Day. There are no material matters of contention between us.
5. In preparing this addendum report, I have reviewed the following information:
 - a. The Applicants evidence of Jon Farren (Acoustics), Paul Taggart (Taggart Earthmoving), Matthew Noon (Traffic) and Michael Durand (Planning) dated 19 April 2021.
 - b. Submitter evidence from Michael Cornwall dated 26 April 2021.

SECTION 42A REPORT SUMMARY

6. I have reviewed noise emissions which may be associated with the proposed quarrying operation.
7. I consider that the proposed 50 dB L_{Aeq} daytime noise limit for operational noise from this activity, assessed in accordance with NZS 6802:2008 will provide adequate protection of residential and rural acoustic amenity. It is broadly consistent with the WHO Community Noise guidelines and the District Plan noise standards. While the NZS 6802 assessment method allows for there to be higher noise levels (up to 55 dB L_{Aeq}) for part of the day, the limited duration will mean that these levels are likely to generate less annoyance, and the values during these periods remain consistent with the upper residential limit in NZS 6802.
8. I agree that the general modelling approach and assumptions described by Mr Farren are appropriate and expected to provide conservative results.
9. In my report I identified some inconsistencies between the Application and the noise modelling which I considered could have a bearing on compliance with the proposed daytime criterion. In particular, I considered that the noise modelling should be updated to reflect the location of the access road shown in the Application.
10. Mr Farren has provided further modelling to reflect the scenarios I raised concerns about, and this is discussed further below. On the basis of the additional modelling, I agree that it is practical for the activity to meet the noise limits proposed.
11. I consider that the increased number of heavy vehicles on River Road is likely to lead to an increase of 3 – 5 dB at the closest residences during peak hours. This is a moderate increase to traffic noise levels at these dwellings and I consider it very likely that there will be a noticeable change in both the character and level of noise received at the closest dwellings.
12. I agree however, with Mr Farren, that traffic noise effects will not be significantly different from those currently experienced for the dwellings closest to River Road with the additional traffic from this proposal. Since these dwellings are already subject to relatively high traffic noise levels, I consider that residents are already likely to modify their behaviour in response, for example by closing windows.

MATTERS RAISED IN EVIDENCE

Correct location of the internal haul road

13. In Figure E1 appended to his evidence, Mr Farren provided updated modelling which showed the change in noise levels from this update was negligible for the closest properties on Huntingdon Drive, and only increased noise levels by 1 dB at the closest properties on West Belt. I agree that the modelling provides sufficient evidence that this location of the internal haul road will not lead to a breach in the proposed 50 dB L_{Aeq} limit at these properties.

Motor scraper used for backfilling

14. I questioned how long the motor scraper may be required to operate to backfill in the event of rising groundwater levels given the proposed 3.5 hour limit on scraper use. I also noted that if this was a rare occurrence, it would be unlikely to be problematic from a noise effects perspective. In any event, in paragraph 8.14 of his evidence, Mr Taggart has confirmed that the motor scraper would not need to be used for backfilling.

15. I understand that in a situation requiring emergency action, backfilling could occur during the night-time period. While machinery is likely to be operating lower in the pit with more screening from the pit walls, I consider it unlikely that compliance with the night-time noise limits would be achieved, particularly if there was any activity related to the stockpiles. In this period, the primary noise effect would be sleep disturbance. It is likely that residents of the closest dwellings with bedrooms oriented towards the operation would need to close windows to ensure an internal noise level consistent with sleep protection in this scenario – if they would otherwise sleep with them open.
16. I consider it appropriate for emergency activity to be excluded from the general operational noise limits if it is a rare event. I note that the night-time noise limits outlined in the construction noise standard are less restrictive than the proposed noise criterion, providing for a 45 dB L_{Aeq} limit at the façade of dwellings. This may be a more realistic night-time noise limit for the Applicant to meet.

Stockpile activity

17. In response to my concerns that the Application referenced stockpile access from 0600 hours (the night-time period), Mr Farren has confirmed in paragraph 9.9 of his evidence that activity on site, including access to the stockpiles, will not occur before 0700 hours.
18. I also raised concerns about activity on top of the stockpiles since I observed this activity at the Taggarts Cones Road site. Because activity on top of the stockpiles will at times be higher than the 3 metre acoustic bunds, this activity would not be screened to the closest dwellings at West Belt. Michael Cornwall also raised this in his evidence, along with the fact that several of these dwellings are two storeys in height (321, 327 and 335 West Belt). This would also mean that there is less screening to these dwellings.
19. In further modelling attached to the Joint Witness Statement, Mr Farren has provided modelling which shows the noise levels which could be expected from an excavator operating on top of a stockpile, for a limited period, and from quarry trucks driving over a stockpile. In these scenarios, the motor scraper is operating in the eastern extent of the inner racetrack.
20. I am satisfied that this demonstrates that compliance with the proposed daytime noise limit can be met for the majority of extraction scenarios. This modelling does not however show the motor scraper operating in the worst-case location, which is the north east quadrant, close to the stockpiles.
21. Based on the modelling provided in Figure 4 of the Marshall Day Assessment which accompanied the Application, I consider it likely that if these activities occur at the same time, with the revised haul road location, the modelling is likely to show a small (less than 2 dB) exceedance of the proposed 50 dB L_{Aeq} noise limit at the closest West Belt properties.
22. Since the Applicant will be constrained by the proposed 50 dB L_{Aeq} daytime noise limit, and there are inherent conservatism in the modelling, in my opinion, this would be best addressed by monitoring of the actual noise levels from this scenario, to confirm the proposed noise limits are being met.
23. I have suggested amendments to the wording of the noise monitoring condition to capture this scenario. These have been adopted by the Applicant and the condition tabled

Noise emissions from quarry activities must be measured and assessed in accordance with the methods described in the QBMP by a suitably qualified and experienced acoustic consultant at the following times:

- a) Once within the first 12 months following the commencement of quarrying operations, **including when machinery is operating on stockpiles**; and
 - b) When excavation initially advances to within 200 m of the dwelling at 373 Lehman's Road; and
 - c) When excavation initially advances to within 350 metres of the dwelling at 321 West Belt. **This monitoring should capture both motor scraper activity, and noise generated by vehicles / machinery operating on the internal haul road and, as far as practicable, activity on top of the stockpiles to confirm that cumulative noise from these activities will not exceed the daytime noise criterion**; and
 - d) When excavation initially advances to within 350 metres of the dwelling at 55 Huntingdon Drive; and
 - e) When excavation initially advances to within 200 m of the Rangiora Eco Holiday Park.
24. These distances do not represent the closest point where extraction is proposed relative to these dwellings. This is intended to give opportunity for noise levels to be confirmed, before extraction will occur in the loudest locations.
25. If this monitoring exercise confirms that there is likely to be a non-compliance at the closest West Belt properties, then some changes to the machinery used and how or where it operates may be required. I note that Mr Taggart in paragraph 7.2 of his evidence, notes that "*should there be any issue with complying with those conditions, we could change the plant used onsite to ensure compliance is achieved*". I expect that it would be reasonable to meet the proposed limit with appropriate selection of machinery.

CONCLUSIONS

26. I consider that the proposed 50 dB L_{Aeq} daytime noise limit for operational noise from this activity, assessed in accordance with NZS 6802:2008 will provide adequate protection of residential and rural acoustic amenity. I agree that it is practical for noise from the proposed activity to meet this noise limit.
27. I recommend that noise monitoring is undertaken to ensure this will be the case as extraction activity approaches the closest properties on West Belt. I suggested changes to the relevant condition which have been adopted by the Applicant.
28. I consider it very likely that there will be a noticeable change in both the character and level of noise received at the dwellings closest to River Road during peak traffic periods. I agree however, with Mr Farren, that traffic noise effects will not be significantly different for the dwellings closest to River Road with the additional traffic from this proposal, as traffic noise levels are already elevated in these locations.

Signed:



Date:

7/05/21

Name:

William Reeve