

# Memo

<b>To:</b>	<b>Carolyn Wratt</b>	<b>Job No:</b>	<b>1013185</b>
<b>From:</b>	<b>Lindsay Leitch</b>	<b>Date:</b>	<b>16 September 2020</b>
<b>cc:</b>	<b>Darran Humpheson</b>		
<b>Subject:</b>	<b>Hegley evidence re proposed quarry noise limits</b>		

As requested by WDC on 15 September 2020, we have reviewed the submission by Nevil Hegley on behalf of Fulton Hogan regarding the extractive industry noise controls in the Proposed Waikato District Plan (PDP), dated 8 September 2020.

## 1 District plan rules

### 1.1 Operative district plan rules

The operative district plan (ODP) contains rule 25.19.1 regarding noise from the extractive industry, which provides the following limits:

*Any activity is permitted if extractive industry noise, measured at the notional boundary of any dwelling existing at 25 September 2004, or at any site in the Living Zone, does not exceed:*

- (a) 55dBA ( $L_{10}$ ) 7am to 7pm Monday to Friday;*
- (b) 55dBA ( $L_{10}$ ) 7am to 6pm Saturday;*
- (c) 50dBA ( $L_{10}$ ) 7pm to 10pm Monday to Friday;*
- (d) 50dBA ( $L_{10}$ ) 7am to 6pm Sundays and Public Holidays;*
- (e) 45dBA ( $L_{10}$ ) and 70dBA ( $L_{max}$ ) at all other times including public holidays.*

### 1.2 PDP rules

Locations of extractive industries are identified via Aggregate Extraction Areas, Aggregate Resource Areas and Coal Mining Areas in the PDP. Potential areas for extractive industries are also identified. These are located in the Rural Zone or the Country Living Zone and will be subject to the noise rules for these zones.

Rule 22.2.1.1 Noise – General P2 provides noise limits for the Rural Zone, whilst Rule 23.2.1.1 Noise – General P2 provides noise limits for the Country Living Zone. The limits for the two zones are identical and are reproduced below:

- (a) Noise measured at the notional boundary on any other site in the Rural Zone must not exceed:*
  - (i) 50dB ( $LA_{eq}$ ), 7am to 7pm every day;*
  - (ii) 45dB ( $LA_{eq}$ ), 7pm to 10pm every day;*
  - (iii) 40dB ( $LA_{eq}$ ) and 65dB ( $LA_{max}$ ), 10pm to 7am the following day.*

## 2 Hegley evidence

The table below summarises the main points made in Hegley's evidence, together with our comments on the validity of these points.

**Table 2.1: Summary of Hegley evidence and T+T comments**

Hegley evidence	T+T comment
There will be a 2-3 dB difference associated with LAeq replacing LA10 in line with NZS6801:2008 superseding NZS6801:1999.	Appropriate to update parameter in line with updated standard. Agree there is potentially some difference associated with using LAeq but this will depend on the noise source.  Quarrying noise depends on the activities being undertaken. For mineral extraction, noise levels can vary, whereas for processing, noise levels can be reasonably consistent (aggregate production – rock crushing). The LAeq is an appropriate noise metric for assessing quarrying noise and will be comparable to the LA10 for processing noise. For sources which rapidly fluctuate and occur in succession (extraction activities), the LA10 will be higher than the LAeq by more than 2-3 dB.
NZS6801:2008 requires slightly positive propagation conditions, compared with neutral conditions in the 1999 version. This results in LAeq being 2-3 dB lower than LA10 close to a source, comparable at a distance of around 300 m and more restrictive at greater distances. Therefore LAeq and LA10 are interchangeable.	We are unsure as to the technical justification for this statement, but it would appear to be more relevant to road traffic noise but not necessarily quarry noise. Agree that LAeq and LA10 are effectively interchangeable.
There will be a reduction in noise for the neighbours around the quarries due to the distances between the noisy activities and the existing dwellings.	We are unsure as to the justification for this statement. Unless quarry operations are changing, noise levels will remain the same – it is the limits which are changing. Therefore any effects remain unchanged.
Quarries are tied to the location of the resource and do not have the option of relocation. They are inherently noisy. 55 dB LAeq is reasonable for quarry noise and justifies a specific rule.	Agree. 55 dB LAeq is consistent with the WHO guidelines for noise levels in outdoor amenity spaces and is the upper range for daytime noise levels.
Numerical limits are 5 dB lower than ODP. If quarries were to be required to reduce noise levels by 5 dB the operation of the quarry [not specified which one] would be significantly compromised. Reducing noise levels likely to be impractical in many cases.	Unknown how much of an impact this would have in practice, i.e. it would depend on the location of neighbouring dwellings in each situation. Potentially having to reduce noise levels by 5 dB would be onerous for quarry operators. LAeq 55 dB is an appropriate noise standard at the notional boundary of neighbouring dwellings around a quarry.
Reasonable and appropriate to retain existing noise limit for extractive industries, merely replacing LA10 with LAeq.	Agree this would be appropriate. On balance there will be negligible noise implications by changing to LAeq 55 dB.

## 3 Recommendations

We consider that a specific rule for quarry noise would be appropriate, and that adopting the proposed Rural Zone limits is likely to be overly restrictive for existing quarry operations. Updating

the existing limit metric from LA10 to LAeq is appropriate and will not result in any significant differences to the current situation.

Limits for blasting noise and air overpressure may be appropriate to include in the PDP depending on the types of quarry in the district. We can provide a suggested noise standard for blasting noise if required.

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