

Submission to Environment Canterbury (ECan) on the Literature Review: Regulatory best practice for quarry dust management in New Zealand

July 2024

Introduction

The Aggregate and Quarry Association (AQA) is the industry body representing construction material companies which produce an estimated 48 million tonnes of aggregate and quarried materials consumed in New Zealand each year.

Funded by its members, the AQA has a mandate to increase understanding of the need for aggregates to New Zealanders, improve our industry and users' technical knowledge of aggregates, and assist in developing a highly skilled workforce within a safe and sustainable work environment.

General

Canterbury relies heavily on locally sourced aggregate resources for infrastructure repair following natural disasters, for road and rail transport corridors, major projects and for affordable housing development, all of which are essential for the social, economic, and cultural well-being of communities.

Currently, the cost of a tonne of aggregate doubles when it has to travel 30 kilometres from a quarry, with additional costs for each extra kilometre thereafter. By ensuring quarries are close to where the aggregate is needed, transport costs, transport congestion and carbon emissions, are significantly reduced.

The quarry industry works collaboratively with local communities and councils to reduce our environmental impact and to meet legal requirements of environmentally sustainable operations. PM10 and PM2.5 micron levels of particulate matter generated by quarrying activity are generally low with PM2.5 a minor component of the PM10 concentrations. Typical PM2.5 fraction in quarry generated particulate matter is between 14% – 20% of measured PM10, and generally well below background measurements of dust generated from other activities.

As this review concludes, the key impact of quarry dust is on amenity values. The review suggests that the concentration of RCS from Canterbury quarries is likely to be below any threshold that may cause health impacts.

We support many of the findings in this report which are consistent with previous reviews of the impacts of quarry dust on communities. We remain happy to assist ECan in any ongoing work on the issue of best practice in quarry dust management.

Section 5 – Sources and Impacts of Dust from Canterbury Quarries

We agree with the recognition that Canterbury is likely to experience relatively high levels of ambient background dust, given the size and extent of natural sources of dust (e.g. from open plains or braided riverbeds) and it is likely that such sources will be the largest contributors to ambient or background levels of dust.

With the variations in meteorological conditions and wind speeds, further research is required to understand the influence weather has on naturally sourced ambient background levels of dust. We also, along with the report, question the usefulness of the 95th percentile 1-hour averages rather than the average maximum 24-hour average PM10 concentrations and believe the latter to be a more relevant measure.

Section 6&7 – Regional/District Plans and Non-regulatory control of dust

Land Use

The report contains examples of council plans recognising land uses and activities and providing spatial overlays and zones where applicable. A number of non-regulatory methods are included, and we support the Quality Planning recommendation for effective demand projection and ongoing planning for, identification, and access to finite aggregate resources.

The Infrastructure Commission report, Securing Resources for Urban Growth Study, provides spatial planning tools councils can use in planning to ensure aggregate resource is available and accessible in the future. We expect that work to map areas of the country not yet mapped will be completed within 12 months.

Section 8 – Reducing dust emissions

Setback distances/Buffer zones

Dust travel modelling suggests dust from Canterbury quarries travels less than 300 metres.

We support the concept of setback distances however, rather than specifying prescribed distances, we believe district and regional plans should allow setback distances to be determined on a case-by-case basis. There are a number of factors that need to be considered to ensure the benefit and comfort of neighbouring activities and residents as well as the interests of the quarries and its customers.

We support the use of adaptive Quarry Management Plans to manage dust as outlined in the report. If the environmental effects of quarrying such as dust can be addressed by such plans and other measures outlined in Section 8, then it begs the question as to whether prescriptive setback distances are necessary.

Rating, importance, effectiveness and cost of mitigation measures

The linear ratings of mitigation measures listed in Table 11 should be treated with some caution. All sites are different and there does not seem to be any consideration of aggregate quantity and value foregone as a result of establishing buffer zones. Greater use needs to be made of site based adaptive Quarry Management Plans to achieve the outcomes required from dust mitigation.

Section 11 – Recommendation for future investigations

As the report suggests, natural sources of dust are likely to dominate dust impacts on a regional scale and be the key source of background dust. Previous monitoring suggests that background dust levels, particularly PM 2.5 and PM 10 levels from sources other than quarries, are likely to be at least as high or higher than that generated from quarrying operations in Canterbury.

Before the development of any objective and quantitative framework for dust management, further work is required to identify the variety of dust sources, the ambient background levels or such sources, and the cumulative effects of the variety of dust sources on the public.

Wayne Scott

Chief Executive Officer

[Aggregate and Quarry Association](#)

wayne@aqd.org.nz

021 944 336