1.0 Introduction

1.1 My full name is Christopher James Bender. I am employed by Pattle Delamore Partners Limited (PDP) as a Service Leader for Air Quality and have over 25 years' experience as an air quality specialist. I am a member of the Clean Air Society of Australia and New Zealand (CASANZ) and am a Certified Air Quality Professional (CAQP) under that body. A more detailed list of qualifications can be provided upon request.

1.2 I have read the Code of Conduct for Expert Witnesses[1]. I agree to comply with that code when giving evidence to the Hearing Panel in this matter. All my evidence is within my expertise, and I have considered and stated all material facts known to me which might alter or qualify the opinions I express.

2.0 Summary of Evidence

2.1 My primary evidence is provided in my review of the application (*Technical Review – RC220350 – Hawkeswood Mining Limited – Air Quality Assessment* and dated 15 December 2023). This evidence summarises the main points of my review of the application with respect to air quality matters, including the site's dust deposition monitoring programme. I also respond to the evidence of Mr Nigel Goodhue (air quality) on behalf of the applicant and to issues raised by submitters.

2.2 I visited the application site on 10 May 2024 to observe the site's processes, dust sources, and the surrounding environment.

2.3 My opinion of the application, including the potential effects of discharges to air on the surrounding environment, has not changed upon reviewing the applicant's and submitters' evidence and my visit to the site.

2.4 I consider the description of the activity and receiving environment in the application to adequately represent the proposal. My view is that the primary issue of air quality effects is of nuisance dust generated from the site during mechanical disturbances of material such as earthworks, from vehicle movements, and from windblown dust from unsealed surfaces.

2.5 I agree with the applicant's assessment of the receiving environment as having a low sensitivity to air quality effects dust, with nearby residences having a high sensitivity. In my experience, the nearby residences within 250 metres of the site boundary have the potential to be adversely affected by unmitigated dust from the site.

2.6 Given the dry and at times windy environment, there is a potential for high levels of dust discharges from the site. Given these conditions, it may prove difficult or impractical to adequately control dust at all times unless there is a very high level of commitment to best practice controls.

2.7 I have reviewed the applicant's Dust Management Plan (DMP) (dated February 2024). I consider the DMP provides good practice controls for mitigating and monitoring dust from the proposed activities. These include dust suppression by way of water application to haul roads and unsealed areas and stop work wind speed and PM_{10} monitoring triggers. Provided the measures in the DMP are effectively enacted, I consider that the effects of dust discharged

[1] Environment Court Consolidated Practice Note 2014 – Expert Witness Code of Conduct.

from the proposed activities can be managed so than any adverse effects will be less than minor.

3.0 Applicant's Air Quality Evidence

3.1 I agree with Mr Goodhue's statement of evidence that the effects of fossil fuel combustion discharges within the proposed mining site will have less than minor effects at the nearest sensitive receptors due to the separation distances.

3.2 I agree with Mr Goodhue that potential dust effects at the Millers Flat School will be very low given the 1.1km separation distance.

3.3 With regard to submitter concerns about respirable crystalline silica (RCS), I agree with Mr Goodhue that, taking into consideration the nature of the aggregate quarry and given the proposed activity does not include crushing of material, discharges of RCS can be appropriately managed by the proposed dust controls. Provided dust and PM_{10} from the site are effectively managed, the health risk from RCS will also be managed to avoid adverse effects on surrounding human health.

4.0 Submissions

4.1 I have read the submissions received by the ORC and CODC and have summarised and addressed those submissions where dust is raised as an issue of concern.

4.2 Some submitters raised concerns about the proximity of the site to their properties. The DMP defines Sensitive Receptor Management Zones (SRMZs) to provide additional controls for mining activities within 250 metres of sensitive receptors, including continuous real-time PM_{10} monitoring at the site boundary nearest to the sensitive receptors. I consider the SRMZ will provide additional dust protection for nearby residential properties and provide assurance that the dust management and mitigation procedures are adequate.

5.0 Dust Deposition Monitoring Programme

5.1 The applicant undertook 14 months of dust deposition monitoring to date at four locations around the site. This data was not provided with the application; however I have reviewed the deposition data supplied by the applicant. I did not find any clear correlation between the deposition rates and the locations of the monitors, nor was there any clear correlation with wind speeds that occurred over the monitoring period. However, typical measurements of insoluble dust appears to be at a relatively low level of 2 to 4 $g/m^2/30$ days, suggesting that levels of dust experienced within the site are within normal levels and are not significantly impacted by earthworks undertaken at the site to date.

6.0 Proposed Conditions

6.1 I have reviewed the proposed consent conditions for the air discharge consent and consider them to be appropriate for the proposal to mitigate dust.

Chris Bender

15 May 2024