



19 June 2023

• Natasha Adsett
Consultant Planner
Palmerston North City Council
PALMERSTON NORTH

Dear Natasha

SUPPLEMENTARY AIR QUALITY REVIEW OF LINTON QUARRY APPLICATION

1.0 Introduction

HiRock Limited (HiRock) has applied to the Palmerston North City Council (PNCC) for resource consents to operate its Linton Quarry. Pattle Delamore Partners Limited (PDP) has been engaged by PNCC to review the air quality related aspects of the application and has previously prepared a technical report to support the s42A report.

PDP has now undertaken a review of further information provided by the applicant as part of its evidence to the hearing panel, and this supplementary report provides a review of this further information.

2.0 Reviewer Qualifications

This review has been undertaken by Andrew Curtis who is a Technical Director at PDP. Andrew has a Bachelors degree in Chemical and Materials Engineering, a Post Graduate Certificate in Environmental Management, and a Post Graduate Diploma in Toxicology with Distinction. He is a Certified Air Quality Professional and also a certified Independent Hearings Commissioner.

Andrew has over 35 years of engineering experience and has specialised in all aspects of air quality for over 25 years, including extensive experience in the assessment of dust from a wide range of quarries.

3.0 Code of Conduct

I have read and agree to comply with the Code of Conduct for Expert Witnesses as contained in the Environment Court's Consolidated Practice Note (2023). My qualifications are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

4.0 Information Reviewed

In this letter I have reviewed the following information:

- ∴ The Dust Monitoring Report, prepared by K2 Environmental Ltd, 1 June 2023 (Monitoring Report)
- ∴ The Dust Management and Monitoring Plan, prepared by K2 Environmental Ltd, 1 June 2023 (DMMP)
- ∴ The evidence of Stuart Keer Kerr, dated 6 June 2023
- ∴ The evidence of Emma Hilderink-Johnson, dated 7 June 2023

5.0 Review of Additional Information

5.1 Monitoring Report

The Monitoring Report provides a summary of PM₁₀ monitoring undertaken between 28 April and 24 May 2023. I consider that the results of the monitoring are as I would expect for monitoring undertaken at this non-ideal (cooler calm weather with low traffic volumes) time of year in a rural environment, that is there is generally little PM₁₀ with values typically less than 15 µg/m³ as a 24 hour average.

There were a couple of peaks measured, particularly on the 23 May, which K2 Environmental Limited (K2 Environmental) attributed to home heating emissions from nearby dwellings. Given the location of the monitor, and the time that the highest values were measured, I agree that this is a likely source.

K2 Environmental has drawn a number of conclusions from the monitoring, including that increased truck numbers are unlikely to significantly change the concentrations. Without having longer duration monitoring I do not consider that it is possible to unequivocally draw that conclusion.

However, based on my experience I consider that it is unlikely that the combustion related emissions from the increased volumes of trucks will significantly change the ambient concentrations to the point where there is an exceedance of any of the relevant National Standards for Air Quality (NES AQ).

I do not consider that the monitoring has provided any information on what contribution if any, road dust generated by vehicle movements might make to ambient PM₁₀ concentrations. That will not be able to be determined until monitoring is undertaken in more appropriate (hot and dry) weather conditions occur.

5.2 Dust Management and Monitoring Report

I have previously undertaken a review of a draft version of the Dust Management plan and while I provided some feedback in some areas, I considered that in general it was appropriate. This updated version has incorporated additional material as a result of my comments and has included new material to cover the proposed monitoring programme.

Consequently I have concentrated my comments on the new material and those areas where I still have some concerns about the content.

In section 3.1 it states that in "dry windy conditions additional controls will be implemented". It is unclear exactly what that additional controls will be implemented, but I presume that these are the measures set out in the "Additional Control" column on the table on pages 15 to 18. If that is the case, then section 3.1 should be updated to make this clearer.

I am comfortable with the 10 m/s wind speed trigger discussed in section 3.1, as this is consistent with Ministry for the Environment (MfE) guidance on dust control. However, based on my site visit I understood that wind data was not currently being logged and therefore it would be helpful if Section 5.7 (Meteorological Monitoring) was expanded to identify:

- ∴ Where the meteorological monitor is located;
- ∴ How the data is logged; and
- ∴ How staff are alerted to wind speeds being over 10 m/s.

In terms of the material in the table on pages 15 to 18 I consider that is generally appropriate except for the following:

- ∴ Vehicle Movements within quarry. I agree with the general control measures but consider that adding additional aggregate is also an additional control measure that can be used if necessary to control dust.
- ∴ Dust on Kendalls Line. I am unsure how the additional mitigation is triggered. I consider that installing a wheel wash is something that should be considered by the applicant in any case. However, if it is something that will occur in the future if required, then there needs to be clear triggers for doing so. From what I can see there is nothing in the management plan that would trigger this.

The second additional control is cleaning the sealed road within the quarry. In my opinion this should not be an additional control but something that occurs as a primary main control. I consider that it fits better within the "Movements within the Quarry" and also consider that depending on the time of year cleaning every three months is far too infrequent. I think at a maximum the interval between cleaning should be monthly.

I am generally comfortable with the contingency measures set out in Section 3.4. However, I am not sure that planting trees is an appropriate contingency measure for controlling dust on Kendalls Line. This is for two reasons, firstly because it will take a number of years for the trees to grow to the point where they provide any form of barrier, but more importantly it is a secondary control, with the most effective control being to ensure that dust did not build up to the point that it created a nuisance.

In section 5, the DMMP talks about the proposed dust monitoring. I set out in my previous memo what I consider to be an appropriate monitoring regime, with monitoring required at the site entrance as per Section 5.2, but long term as opposed to a two-month period. I remain of the opinion that this is the most appropriate option for monitoring until it can be demonstrated that HiRock has the dust tracking issue under control.

In section 5.3 of the DMMP there is a discussion on triggers for additional monitoring. I consider that these are appropriate, excepting the comment above about requiring the boundary monitoring to be continuous.

In Section 5.4 there is a discussion about the timing of monitoring. Again, I consider that my initial advice on monitoring at the site boundary within 3 months of consent being granted is appropriate. I am comfortable with the Applicant undertaking monitoring near the residences on Kendalls Line if it wishes to do so, and consequently I consider that the timing for that is appropriate.

6.0 Evidence of Stuart Keer Keer

I have read Mr Keer Keer's evidence and the material it traverses is largely covered in the previous two sections. Therefore I have concentrated in this section on material that was not covered in either Sections 4 or 5.

I agree with Mr Keer Keer (paragraphs 21 and 22) that there is little potential for high concentrations of respirable silica from the quarrying operation.

I agree with Mr Keer Keer (paragraph 23) that the most likely source of nuisance dust for residents at western end of Kendalls Line is from the resuspension of dust on the road or berms, by truck movements along the road.

In paragraph 28 Mr Keer Keer reiterates the comment made in the monitoring report that increased vehicle numbers will not substantially increase dust concentrations. I have already addressed this in Section 5.1, but would reiterate that while the statement is possibly true with respect to the combustion emissions, it is not possible to say what contribution road dust might be making.

In paragraphs 37 to 41 Mr Keer Keer discuss my previous report. This discussion focuses on the one area where we disagree, which is in relation to whether the monitoring at the site boundary should be for a short duration or a longer one. As I have already stated I do not consider that a single short period of monitoring is going to provide sufficient information to demonstrate that HiRock is controlling the tracking of dust out of its site.

In paragraphs 42 to 43 Mr Keer Keer makes three recommendations in terms of consent conditions. In terms of these I:

- ∴ Agree that that any dust monitoring at the western end of Kendalls Line should be carried out when the conditions are more likely to give rise to dust.
- ∴ Am unsure of the value of analysing the dust collected on properties. I have done this for some projects, and have found it extremely difficult to differentiate the sources of dust except where there is a unique element in them. So, for example, in this case we might be able to identify diesel exhaust, but not the source of the road generated dust.
- ∴ Do not consider that a one off test is able to do anything more than provide a snapshot of performance and cannot demonstrate that the site is compliant with the NES AQ over the long term.

7.0 Evidence of Emma Hilderink-Johnson

I have reviewed the air quality related sections of Ms Hilderink-Johnson's evidence. In paragraphs 70 to 76 she discusses air quality and dust and summarises the findings of Mr Keer Keer's work. In particular she notes that it is unlikely that dust generated directly by quarry activities gives rise to off-site nuisance.

She acknowledges (paragraph 73) that there is the potential for vehicles exiting the site to be tracking material on to Kendalls Line which may give rise to effects if disturbed.

She comments on the findings of Mr Keer Keer's monitoring and his conclusions. I have already discussed this a number of times, but note that I agree that the potential for emissions to increase substantially is significantly reduced if Kendall's Line is appropriately maintained. In my opinion this needs to be more than just what I understand was agreed between the Applicant and PNCC i.e. clearing the berms, but also controlling the source of dust at source and preventing, or reducing as far as practicable the tracking of material out of the quarry onto Kendall's Line in the first place.

Finally (paragraphs 75 and 76) Ms Hilderink-Johnson discusses the duration of the PM₁₀ monitoring and agrees with Mr Keer Keer that one round of monitoring is sufficient. While I acknowledge that the DMMP sets out a mechanism for repeating the monitoring following the receipt of verified complaints, I remain of the opinion that given the wide range of variables that could affect the monitoring, a short duration monitoring campaign will not be able to provide an appropriate level of evidence to demonstrate that HiRock is effectively controlling the potential for dust tracking from its site.

8.0 Proposed Consent Conditions

I have reviewed the consent conditions that are attached to Ms Hilderink-Johnson’s evidence dated 7 June 2023, and have set out a few comments on the air quality related conditions in Table 1 and also some changes which I consider should be included in the consent if it were to be granted.

Table 1: Comments on Proposed 7 June Consent Conditions

Condition number	Comment
40	<p>While the wording of this condition is slightly different to that which I recommended in my Technical Memo I am comfortable that it sets out an appropriate framework for developing a dust management plan.</p> <p>I have already noted that there are a couple of areas where I consider the draft version of the DMMP needs to be changed. I consider that if the DMMP were drafted to meet the requirements of Condition 40, those additional matters would be addressed.</p>
46	<p>This is a duplicate of condition 42 and seems unnecessary.</p>
47	<p>As already discussed, I consider that the Applicant should monitor PM₁₀ for longer than the two months proposed and therefore consider the condition should remain as I proposed in my Technical memo which was:</p> <p>The consent holder shall undertake real time PM₁₀ monitoring at a location on the site boundary near Kendalls Line within three (3) months of consent being granted. The exact location of the monitor and the method of monitoring shall be set out in the DMP required by condition 40.</p>
	<p>If the Applicant wishes to undertake some additional short duration monitoring adjacent to the residences at the western end of Kendalls Line then it can still do so, however I do not consider that this needs to be via a condition. However if it was decided that it was appropriate to do so then the Applicants proposed Condition 47 could be modified as follows:</p> <p>The Consent Holder must carry out one round of real time PM₁₀ monitoring after 1st November 2023 and before 31st March 2024, during the first “dry” summer season, following the grant of the consent to determine the extent of any nuisance dust effects from the quarry including quarry traffic along Kendalls Line. The exact locations of the monitors and the method of monitoring must be set out in the DMMP required by Condition 40 however it will generally be at the western end of Kendalls Line. Monitoring will be for at least two (2) months of dry weather. If rain events occur during the monitoring period, it shall be extended by the number of days where there was rain.</p>

Table 1: Comments on Proposed 7 June Consent Conditions

Condition number	Comment
49	This condition could be deleted if the Panel accepts my suggestion in relation to Condition 47.
New Condition	<p>As discussed previously, I consider that the most significant air quality issue is the dust that is generated as a result of tracking material out of the site. I previously proposed a condition that would require the Applicant to undertake a specific investigation into this issue and identifies what action will be implemented to mitigate it.</p> <p>I consider that there is still merit in undertaking this investigation but have modified my suggestion, so that it is triggered if the monitor required by condition 47 measures by high concentrations of PM₁₀.</p> <p>Following the receipt of results of the monitoring required by Condition 47, if it is shown that the site is generating concentrations of PM₁₀ that are greater than 50 µg/m³ as a 24 hour average, the Palmerston North City Council may request in writing that the consent holder provide a report, prepared by a suitable qualified person, which investigates options for controlling the tracking of dust out of the site. This should include consideration of, but is not limited to:</p> <ul style="list-style-type: none"> a. Sealing or metalling of the publicly accessible yards b. Installation of a wheel wash c. Sweeping of sealed portions of the site roads and yards and Kendalls Line d. Maintenance requirements for any option selected <p>The Consent Holder shall implement the recommendations of the report within six months of the report being finalised and provide an updated version of the DMMP as per Condition 45.</p>

9.0 Overall Conclusion

Having reviewed the material submitted in evidence I remain of the opinion that there is no reason why consent could not be granted for this activity, on the basis of the consent conditions submitted by the Applicant with the changes I have proposed.

Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

Prepared by

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Technical Director Air Quality

Limitations

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