



Report pursuant to s42A Resource Management Act 1991

In the matter of:	A Notice of Requirement to construct and operate a new intermodal rail and freight hub on land between Palmerston North and Bunnythorpe
And:	A hearing by Palmerston North City Council pursuant to s100A
Requiring Authority:	KiwiRail Holdings Ltd
Hearing date:	Commencing 9 August, 2021

Section 42A technical evidence summary statement for hearing: Air Quality

By: Deborah Ryan

1. I am the author of the Section 42A Air Quality Report. In my report, I noted that there are potential effects on air quality from construction and operational activities. For construction, the principal concern is the effects of dust from construction on amenity values and related nuisance impacts. Deposition of dust at dwellings near the construction activities has the potential to cause soiling of property and to contaminate roof water supplies.
2. In the operational phase, there is a potential for adverse effects on air quality from both dust from Freight Hub activities and emissions from vehicles and diesel train engines operating at the site. Operational emissions, therefore, have the potential to cause adverse effects on amenity values, nuisance impacts and effects on human health, such as from products of diesel combustion and PM₁₀, which is managed under the Resource Management (National Environmental Standards for Air Quality) Regulations 2004 (**NESAQ**).
3. KiwiRail has agreed that construction air quality effects are appropriate for the Panel to consider in the context of the NoR, particularly the potential effects of dust on amenity. For the construction phase, Dr Heveldt and I agree that the risk of impacts from dust discharges is high, and that a dust management plan is needed. We both agree that air quality monitoring for particulate matter during construction is appropriate, but we have recommended different approaches to monitoring.
4. Dr Heveldt's statement of evidence includes PM₁₀ monitoring, alongside TSP and deposited dust.¹ For reasons stated in my s 42A report, I prefer real-time PM₁₀ monitoring concurrent with PM_{2.5}.² In my opinion, there is little value in also monitoring TSP and deposited dust, and I would prefer to see monitoring effort invested in real-time light scattering instruments. As I also discuss in my s 42A report, the real-time approach circumvents the need to establish background concentrations. This is because of the analysis that is possible with continuous logging of PM₁₀ concentration data upwind and downwind of the site.
5. Dr Heveldt discussed a "yardstick of acceptability" for dust measurement, which are based on 24-hour average and 30-day averages.³ As I discuss in my s 42A report, I prefer a 1-hour average monitoring trigger value, which allows a proactive response to managing dust and can therefore minimise the potential for an event to result in adverse effects off-site. Using longer averaging periods,

¹ Dr Heveldt, Statement of Evidence, Contaminated Land and Air Quality, Para 4.16.

² S42A Technical Evidence: Air Quality, 9th August 2021, Para 9.

³ Dr Heveldt, Statement of Evidence, Contaminated Land and Air Quality, Para 4.17.

as suggested by Dr Heveldt, is a retrospective approach. I also note that, to be an effective management tool, the monitoring sites need to be appropriately located, particularly given the scale of the site, prevailing winds and the locations of sensitive receivers.

6. I note that while Dr Heveldt agreed with both a construction dust management plan (CDMP) and dust monitoring during construction, neither of these matters were provided for in KiwiRail's condition set dated 13th of August 2021. I support the conditions put forward by Ms Copplestone as being appropriate for addressing these matters. Here I am referring to the PNCC's current working version of the conditions.
7. In the time since writing my s 42A report, I have further considered that during construction there is a potential for odour and contaminated dust, such as from excavation of contaminated land (including hydrocarbons) and on-farm dumps. In providing my recommendations, I have assumed that the potential effects on air quality associated with contaminated land will be appropriately managed through specific plans developed following detailed site investigations, as advised by Ms Bell.⁴ For clarity, I have not considered these matters in my assessment, nor within the recommended conditions relating to air quality. This is because I consider the risks from odour will be low and that measures to manage and contain contaminated materials will be addressed under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.
8. KiwiRail has not fully considered the potential effects on air quality from the operational phase as part of the NoR. KiwiRail is proposing to address amenity impacts from dust during Freight Hub operation and has proposed an operational dust management plan (DMP). Although, I note that Dr Heveldt agreed that an Operational Air Quality Management Plan is appropriate to address wider air quality matters,⁵ KiwiRail considers that the other emissions, such as from the train engines, are more appropriately addressed at the regional consenting stage.
9. In further discussions with Ms Copplestone, I understand that the One Plan contains permitted activity rules for discharges to air under 15-14 (Miscellaneous) covering activities that are part of the Freight Hub proposal. In particular, the sub-parts below appear to be relevant:

⁴ Ms Bell, Statement of Evidence, Planning, Para 6.128.

⁵ Dr Heveldt, Statement of Evidence, Contaminated Land and Air Quality, Para 9.17.

(h) servicing/repair, including of trains

(n) storage, blending, distribution of bulk products

(u) development, or maintenance, use and upgrade of industrial and trade premises including site development, landscaping and construction.

10. In my experience, I am not aware of any regional consents that authorise emissions from the freight handling (logs, bulk solids) as well as trains and truck movements. I am aware that air quality issues are associated with similar facilities elsewhere. One example is at Mount Maunganui, at the Port of Tauranga, which includes log handling and bulk storage; the Bay of Plenty Regional Council has undertaken comprehensive air quality monitoring and determined that the area is a "polluted airshed" under the NESAQ.
11. A JWS⁶ relating to the Regional Plan provisions for Mount Maunganui sets out findings related to bulk storage and log handling activities that have been associated with exceedances of the NESAQ for PM₁₀ of 50 µg/m³ as a 24-hour average. One of the monitoring locations, Rail Yard South, had an annual average PM₁₀ of 30 µg/m³ compared with the National Ambient Air Quality Guideline value of 20 µg/m³.
12. Ms Bell has assessed that regional consents are not anticipated to be needed for air discharges from operations (although she has proposed an operational DMP).⁷ I assume, therefore, that Ms Bell expects the Freight Hub operations will comply with the Rule 15-14 standards. Of relevance are the permitted activity standards:
- a. The discharge must not cause a breach of any of the National Environmental Standards for ambient air quality set out in Table 7.1 (in Chapter 7).
 - b. The discharge must not result in any offensive or objectionable odour, dust, smoke or water vapour beyond the boundary of the property.
13. Ms Bell notes that bulk earthworks will need regional consents and refers to a CDMP being needed under regional consents for bulk earthworks.⁸ I assume that any regional consent for air discharges from construction and operations relates to potential for non-compliance with Rule 15-14(u).

⁶ PC13 Air Quality Expert Conference on 24, 25, 26 and 27 May 2021 - Joint Witness Statement, ENV-2019-AKL-000065 and ENV-2019-AKL-000073.

⁷ Ms Bell, Statement of Evidence, Planning, Para 6.135.

⁸ Ms Bell, Statement of Evidence, Planning, Para 6.128.

14. Ms Copplestone notes, regarding s15(2) of the RMA, that the Freight Hub includes “moveable sources not otherwise authorised” (i.e., trains and trucks), and must comply with national environmental standards such as the NESAQ.⁹
15. In my opinion, while the specific activities under Rule 15-14(h) & (n) may be covered as permitted activities, the cumulative effects of the Freight Hub operations (including in combination with emissions from trains and trucks) have the potential to breach the NESAQ standards for PM₁₀. Therefore, while I understand that on balance, Ms Copplestone’s view is that the potential impacts of the operations on air quality are principally a regional council function, there may be a potential jurisdictional gap, because the regional council does not regulate mobile sources of PM₁₀ through the regional plan.
16. As I stated in my s 42A report, I recommended to PNCC that additional information was sought to understand the nature and scale of the effects on air quality. In my opinion, KiwiRail’s s 92 reply and Dr Heveldt’s evidence have not substantiated KiwiRail’s conclusions that operational air quality effects will comply with the NESAQ. While KiwiRail has agreed that dust is an issue and requires management, I note that dust sources like log yards may also contain PM₁₀ and in concentrations that can impact on air quality. So that, in my view, the issues of dust and NESAQ compliance are not so easily separated.
17. Advising PNCC that further information as to the effects on air quality was needed for the NoR application was based on my experience with the scope and level of the assessments for other NoR applications that I have been involved with. For example, Waka Kotahi led projects including Roads of National Significance projects like Pūhoi to Warkworth. I am also currently involved in reviewing the RiverLink project for Hutt City Council, where a considerable level of detail on construction and operational effects on air quality has been provided.
18. In my experience, these significant infrastructure projects comprehensively assessed the impacts of construction dust, identifying the potential effects and key risk areas at the NoR stage, even where regional consents were not being sought for air discharges. In this case, even though KiwiRail has identified construction dust as an issue, a meaningful assessment of construction dust in accordance with good practice was not provided and consequently I used the available information to inform my own assessment.

⁹ Both regional councils and territorial authorities have requirements under the national environmental standards for air quality. <https://qualityplanning.org.nz/node/717>

19. While the level of assessment for operational effects on air quality does not reflect the level that Waka Kotahi routinely provides, I accept that PNCC considers air quality is principally a regional council concern. The issues I have raised with the Freight Hub air quality assessments have arisen largely because KiwiRail offered conditions relating to dust that I considered lacking in effectiveness. Ms Copplestone and I also formed that view that if it was appropriate for KiwiRail to offer an operational dust management plan, then it would also be appropriate for construction dust to be addressed at a similar level.
20. I have recommended monitoring of air quality for the construction and operational phases to inform dust mitigation measures and ensure the effectiveness of the dust controls. The proposed method, using light scattering instruments, are low cost and provide real time data that has many advantages over more traditional dust monitoring methods. While being useful for dust nuisance, they will also be informative as to the impacts of particulate matter discharges on the NESAQ for PM₁₀. PM_{2.5} is measured concurrently with the same instrument, while indicative the approach provides for more accuracy overall. The data will therefore be appropriate for considering amenity or nuisance, as well as providing indicative data for health impacts of particulate matter discharges.
21. I have reviewed the working version of the conditions recommended by Ms Copplestone and I agree that her recommendations provide an appropriate mechanism for addressing the potential for effects of dust during the construction and operation of the Freight Hub.
22. In general, the necessary controls for construction dust are well understood and documented elsewhere. I am confident that appropriately prepared and independently approved management plans, with real-time dust monitoring (as PM₁₀), can provide the mechanism for minimising the risk of adverse effects due to loss of amenity and nuisance.



Deborah Ryan

29th September 2021