

# Canterbury

District Health Board

Te Poari Hauora o Waitaha

## CORPORATE OFFICE

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28 May 2021

9(2)(a)

### RE Official Information Act request CDHB 10602

I refer to your email dated 7 May 2021 requesting the following information under the Official Information Act from Canterbury DHB. Specifically:

**Personal monitoring of dust exposure and levels were conducted involving Yaldhurst residents in the vicinity of quarries. The monitoring was concluded in March 2018.**

ECAN have indicated on their website this comment: <https://www.ecan.govt.nz/get-involved/news-and-events/2017/working-together-to-resolve-quarry-dust-issues/> - update 30 "In home monitoring:

The in home monitoring second round was completed in March. The CDHB Medical Officer of Health has advised that the results are personal to those involved and therefore cannot be made public. He did advise that after international peer review, his conclusion was that the results were inconclusive" ECAN have advised a resident they did not conduct the international peer review, so it is therefore left assumed this was conducted by CDHB and / or Dr. Pink.

Please could I be provided with the details of:

1. Who conducted the international peer review of the data.
2. Where the persons involved are located and their qualifications / areas of expertise
3. The reports they provided in relation to the review conducted.

I understand that at the time the results were confidential. They have since been entered into the public domain whereby one of the residents presented the monitoring report into proceedings at a resource consent hearing. If it is deemed there is still a level of confidentiality I ask that I be provided with the information requested with personal identifying features redacted.

It is important that evidence is provided that such international peer reviewing did occur. In a form that will evidence when it occurred and who by. If none is provided it will be assumed there was no international peer review conducted. I have seen an email from Dr. Pink indicating that he believed

**the results were inconclusive but there was no reason given, and no indication he had the data internationally peer reviewed.**

Canterbury DHB requested the support of a public health toxicologist to provide comments on the study by Chemsafety: Quarry Dust Residential Expose Assessment (3 reports: August 2017, January 2018, and March 2018).

The international peer review was performed by Doctor Jeff Fowles. Dr Fowles is in the United States and holds a PhD in Toxicology. He specialises in the health risk assessment of environmental hazards

The report completed by Dr Fowles is attached as **Appendix 1. Please note:** we have redacted some information pursuant to section 9(2)(a) of the Official Information Act to protect individual privacy.

I trust this satisfies your interest in this matter.

You may, under section 28(3) of the Official Information Act, seek a review of our decision to withhold information by the Ombudsman. Information about how to make a complaint is available at [www.ombudsman.parliament.nz](http://www.ombudsman.parliament.nz); or Freephone 0800 802 602.

Please note that this response, or an edited version of this response, may be published on the Canterbury DHB website after your receipt of this response.

Yours sincerely



Ralph La Salle  
**Acting Executive Director**  
**Planning, Funding & Decision Support**

**Comments on Study by Chemsafety: Quarry Dust Residential Exposure Assessment (3 reports: August 2017, January 2018, and March 2018)**

By

Jeff Fowles, Ph.D.

28 May, 2018

Three reports were prepared by Chemsafety, commissioned by Environment Canterbury, to assess residential exposures to dust and crystalline silica emanating from nearby quarry activity and related truck transportation along relevant roadways. Seven properties were sampled, including one control property thought to be at low risk of exposure. Two reports (August, 2017, and March, 2018) measured indoor particulate matter and silica on representative days in winter and late summer months, with activity patterns noted. A third sampling (January, 2018), was conducted following a thorough cleaning of three properties.

I have reviewed these reports with the limitation that I have not commented on the accuracy or appropriateness of the analytical measurements themselves, as this would be beyond my area of expertise.

The reports nicely summarize the study, its purpose, and general findings.

Some conclusions can be drawn from these data:

- 1) Inhalable dust levels are generally high in these residences, including the control residence, throughout the year. If one assumes that these measurements are reflective of a daily average, then all samples in August 2017, and most from the March 2018 samplings appear to have exceeded PM10 National Air Quality Standards in the U.S. (150  $\mu\text{g}/\text{m}^3$  24 hour average) or the Australian National Environment Protection Measure (NEPM) of 50  $\mu\text{g}/\text{m}^3$ .
- 2) Respirable dust levels are, in some cases, high enough to warrant concern over long-term exposure to respiratory health. The persistently high results from <sup>9(2)(a)</sup> Conservators Road, <sup>9(2)(a)</sup> Guys Road (missing first data point acknowledged), and <sup>9(2)(a)</sup> Old West Coast Road, indicate that respirable dust may represent a health risk in these locations. The Australian NEPM of 25  $\mu\text{g}/\text{m}^3$  for PM2.5 would seem to be applicable here. Alternatively, the U.S. EPA 24 hour PM2.5 standard of 35  $\mu\text{g}/\text{m}^3$  or alternatively the 12  $\mu\text{g}/\text{m}^3$  (annual average) may be applicable, depending on how representative these measurements are throughout the year. In any case, the three properties

above may be exceeding one or more of these standards.

- 3) The cleaning appears to have been successful at reducing respirable crystalline silica in the three homes where it was done. More detail about the cleaning process and its timing in relation to the January 2018 sampling, would be helpful. The marked reduction in RCS after cleaning may indicate indoor sources of RCS in addition to the outdoor sources. Indoor source of RCS are discussed by some authorities (NCI 2015). If there were DIY activities in these homes, masonry cutting, concrete or brickwork, etc, these could contribute to indoor RCS.
- 4) The substantial difference between <sup>9(2)(a)</sup> Conservators Road findings for both PM10 and PM2.5 suggests that the presence of a thick hedgerow and additional distance from the major roadway has large implications for indoor air quality in these homes.
- 5) The respirable silica levels found all fall well below occupational standards (WorkSafe Australia 100 µg/m<sup>3</sup> for 8 hours), but do exceed the conservative California EPA chronic daily average standard of 3 µg/m<sup>3</sup> in several cases. Generally speaking, the RCS levels do not appear to be consistently related to seasonal fluctuations, since the winter levels were notably higher, and cleaning seems to reduce levels to below detection. It seems counter-intuitive that the greater quarry activity months and warmer drier weather would carry less RCS if the quarry were the only source of RCS. The greater and more pervasive respiratory health concern appears to be with PM10 and PM2.5 more generally, and how to reduce these exposures.

## References

Australia State of the Environment. 2016.

<https://soe.environment.gov.au/theme/ambient-air-quality/topic/2016/fine-particulate-matter-pm25>

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Chemsafety 2017. Quarry dust residential exposure assessment (1-25 August 2017).

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Chemsafety 2018a. Quarry dust residential exposure assessment post cleaning (25 and 27 January 2018). B. Jennings and S. McGee. Report of 9 March 2018.

Chemsafety 2018b. Quarry dust residential exposure assessment (9-27 March 2018). B. Jennings and K. Blomquist. Report of 8 May 2018.

National Cancer Institute. 2015. <https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/crystalline-silica>).

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WorkSafe Australia. 2018. <https://worksafe.govt.nz/topic-and-industry/dust-and-fumes/dust/silica-dust-in-the-workplace/>

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