

Before Independent Commissioners Appointed by the Canterbury Regional Council and Selwyn District Council

In the matter of The Resource Management Act 1991

And

In the matter of Applications by **Fulton Hogan Limited** for all resource consents necessary to establish, operate, maintain and close an aggregate quarry (**Roydon Quarry**) between Curraghs, Dawsons, Maddisons and Jones Roads, Templeton

SUPPLEMENTARY REBUTTAL EVIDENCE OF ROGER STEVEN CUDMORE ON BEHALF OF FULTON HOGAN LIMITED

AIR QUALITY – DR FITCH EVIDENCE

DATED: 30 OCTOBER 2019

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Introduction

1. My full name is Roger Steven Cudmore. I am a Principal of Golder Associates (NZ) Limited (Golder) and am the National Technical Leader for Golder's Environmental Services.
2. I have previously provided a written brief of evidence in relation to the Roydon Quarry Proposal. That evidence is dated 23 September 2019. I confirm my qualifications and experience as set out in paragraphs 4 to 8 of that evidence.
3. I also confirm I have read and agree to comply with those parts of the Environment Court Practice Note that bear on my role as an expert witness, in accordance with paragraphs 4 to 8 of my earlier evidence.

Scope

4. My supplementary rebuttal evidence addresses the evidence filed by Dr Fitch on behalf of N and A McGrath. It is complementary to Dr Jorgensen's rebuttal evidence.

Evidence of Dr Fitch

5. I have reviewed the rebuttal evidence provided by Dr Jorgensen in regards to the evidence of Dr Fitch and provide additional comments regarding the latter's evidence as follows:
6. In paragraph 6 of Dr Fitch's evidence, concerns regarding inhalation of silica during grazing are raised. However, it is not uncommon for horses and other livestock to graze near quarries and they will always ingest some sediment material with or with the presence of a nearby quarry. This is because of environmental features such as wind-blown dust from agricultural land, gravel roads, river beds etc. This effectively ensures that grass is always likely to have some residual level of silicon-based sediment. During grazing of grass horses and other ruminants will ingest sediment into their gut system. However, inhalation of sediment while grazing is not likely to be a material issue unless the grass is heavily laden with visible coating of deposited dust during dry conditions. Such levels of dust deposition are highly unlikely to result from the Proposal.

7. I understand that horse training and stable facilities are at least several hundred meters from the Proposal site, which means these areas are likely to be associated with low levels of dust deposition and respirable particulate (PM10) from the Proposal. Furthermore, MfE guideline criteria for deposited particulate and the NESAQ for PM10 are very unlikely to be exceeded in areas where horses train or there are stables. Therefore, the potential for health effects upon horses from breathing in dust generated by the Proposal is likely to be de minimis in my view. Conversely, the exposure to dust from training horses on exposed aggregate surfaces is likely to be a far greater source of exposure to any respirable crystalline silica – for both the horse and their trainers.

8. In paragraph 6 of Dr Fitch's evidence it is inferred that the Yaldhurst quarry study results understate potential dust impacts from the Proposal as the study period had higher than average rainfall. However, in my view the dust emissions associated with the Yaldhurst RCS study were very unlikely to be low compared to other years. While there was a higher than average rainfall in this period, this was concentrated around a specific event. As such the distribution of the total rainfall during the study period was such that the fraction of days when the quarry floor would be dry and prone to dust erosion was consistent with other years. I should add here that while this concentrated rainfall event probably elevated soil moisture levels above the typical average, this will not have had a corresponding impact on the average level of surface moisture within the Yaldhurst quarry itself. This is because the quarry surface moisture levels decrease rapidly with the absence of rain (typically drying out with ½ a day), whereas soil systems have a much slower decay in moisture with changing ambient conditions.

Roger Cudmore

30 October 2019