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 CRC192408, CRC192409, CRC192410, CRC192411, CRC192412, CRC192413 and CRC192414 by Fulton Hogan Limited for a suite of resource consents to establish a quarry operation

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SUPPLEMENTARY STATEMENT
WRITTEN REPLY TO MINUTE 14

SECTION 42A REPORTING OFFICER
CANTERBURY REGIONAL COUNCIL
AIR QUALITY – DEBORAH RYAN

DATED: 21 FEBRUARY 2020

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1. INTRODUCTION

1.1 My name is Deborah Ryan. I am a Technical Director for Air Quality with Pattle Delamore Partners. An explanation of my qualifications and experience is provided in my section 42A Report.

1.2 While this is a Council Hearing, I acknowledge that I have read the Environment Court's Code of Conduct for Expert Witnesses as contained in section 7 of the Environment Court Practice Note 2014 and have complied with it in the preparation of this evidence.

2. SCOPE OF STATEMENT

2.1 The purpose of this supplementary statement is to provide a written reply to Minute 14 from the Commissioners, following the reconvened hearing of 5th of February 2020.

2.2 In preparing this statement, I have referred to the Supplementary Statement of Roger Steven Cudmore on behalf of Fulton Hogan Limited, PM_{10} Offsetting, 5th February 2020; the Addendum Synopsis of Closing Legal Submissions for Fulton Hogan, PM_{10} Emissions, 5th of February 2020, and earlier evidence and Joint Witness Statements (JWS) where relevant.

2.3 Minute 14 from the commissioners requested that I provide written comments on Mr Cudmore's new NESAQ PM_{10} offset evidence and the NESAQ legal submissions, relevant to Ms Goslin's recommendation; and specifically whether or not I agree or disagree (with reasons) with Mr Cudmore's new NESAQ PM_{10} offset evidence.

3. QUANTIFICATION OF PM_{10} CONTRIBUTION FROM ROYDEN

3.1 I have considered Mr Cudmore's statement from paragraph 12 of his statement as containing new information on the quantity of PM_{10} that would need to be offset in order to satisfy Regulation 17(3) of the NESAQ.

3.2 I agree with Mr Cudmore that an annual basis is relevant for quantifying the amount of PM_{10} that should be provided for any offsets for the proposed quarry; and that the amount that could enter the airshed on an annual basis is dependent on:

(a) the average annual quarry activities as addressed in the calculations presented in the 2nd JWS on air quality;

(b) the distance of those activities from the airshed boundary; and

(c) the frequency of winds where the airshed is downwind of quarry operations over a year.

3.3 The number of variables and assumptions needed to determine how much PM_{10} will enter the airshed annually make estimation uncertain. In my view, sufficient conservatism should be applied to satisfy that any offset meets the test under Regulation 17(3)(a) of the *"same or greater amount than the amount likely to be discharged into the relevant airshed by the discharge"*; while acknowledging that worst case or conservative assumptions at every step would likely result in gross over estimation of the offset quantity.

3.4 Although I note Mr Cudmore has considered both the entire site emissions and those within 500 metres of the airshed boundary, I agree with Mr Cudmore that it is reasonable to exclude PM_{10} contributions from activities that are 500 metres or more from the airshed boundary. This assumption is supported by data published by the UK Institute of Air Quality Management (IAQM)[1]. Attachment A to this statement provides a graphical representation of the IAQM data for additional mean PM_{10} with distance downwind of a quarry and illustrates zero measurable contribution from around 350 metres. I note that at paragraph 23, Mr Cudmore quantifies sources more than 500 metres from the boundary as 0.6 tonnes per year and has provided estimates of contribution to the airshed where he considers the total site (1.6 tonnes per year) and activities within 500 metres (1 tonne per year).

3.5 At paragraph 22 of his 5th of February statement, Mr Cudmore described that he has used an average arc of the wind directions for active quarry areas with 500 m of the airshed boundary. While I am unclear as to what Mr Cudmore means by "an average arc", I agree that the airshed boundary is downwind of the site around 40% of the time.

3.6 Given that my estimates of sources less than 500 metres to the boundary aligned with Mr Cudmore's calculations at 1 tonne per year, then applying the factor for wind of 40%, my estimate also agrees with Mr Cudmore's, as he has set out in Table 1 of 0.4 tonnes per year.

4. AVAILABLE OFFSETS

4.1 Mr Cudmore quantifies available PM_{10} offsets from other Fulton Hogan activities that occur wholly within the airshed being:

(a) Ceasing extraction operations at Roberts Road – total of 3.5 tonnes per year;

(b) Ceasing gravel processing at Pound Road – total of 1.6 tonnes per year; or

(c) A 5% reduction in emissions from the asphalt and sand bagging plant – estimated at 1 tonne per year.

4.2 The detailed assumptions behind Mr Cudmore's estimates for the sources that could provide potential offsets are not available. In my view, however, it is reasonable to conclude that any

[1] IAQM, *Guidance on the Assessment of Mineral Dust Impacts for Planning*, May 2016 (v1.1)

of the options provide a sufficient factor of safety to more than offset emissions that are within 500 metres of the airshed boundary, and that may discharge into the airshed when the airshed is downwind of the quarry.

ATTACHMENT A IAQM PM_{10} INCREMENTAL DATA