

BEFORE THE CHRISTCHURCH CITY COUNCIL AND CANTERBURY REGIONAL  
COUNCIL

**UNDER**

The Resource Management Act 1991

**AND**

**IN THE MATTER OF**

Application for resource consents RMA/2017/2111 and  
CRC181274 by Road Metals Company Limited

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**DECISION OF HEARING COMMISSIONERS**

**Sarah Dawson and John Iseli**

**16 May 2018**

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## **Appearances**

### **Applicant:**

**Mr E Chapman** (with **Ms E Taffs**), solicitor for Road Metals Company Limited

**Mr M Francis**, Managing Director of Road Metals Company Limited

**Mr L Forbes**, Quarry Manager for Road Metals Company Limited

**Mr M Copeland**, economist with Brown, Copeland and Company Limited

**Mr D Compton-Moen**, landscape architect / urban designer with DCM Urban Design Limited

**Mr A Metherell**, transportation engineer with Traffic Design Group Limited

**Mr V Mthamo**, environmental engineer with Reeftide Environmental and Projects Limited

**Mr E van Nieuwkerk**, hydrogeologist with Golder Associates (NZ) Limited

**Mr G Walton**, acoustic consultant with Marshall Day Acoustics

**Mr R Chilton**, air quality scientist with Golder Associates (NZ) Limited

**Mr K Bligh**, planner with Golder Associates (NZ) Limited

### **Submitters:**

**Mr R Blanks**, 90 Old West Coast Road

**Mr D Vallance**, 105 Old West Coast Road

**Ms N van Gosliga**, 73 Old West Coast Road

### **New Zealand Transport Agency**

**Mr A Spowatt**, traffic and safety engineer with New Zealand Transport Agency

**Mr S Fletcher**, planning consultant for New Zealand Transport Agency

**Mr K Crews**, 120 Old West Coast Road

**Mr E Prain**, 132 Old West Coast Road

**Mr C Main**, 622 Buchanans Road

**Mrs S Nicholas for Mr G and Mrs C Martini**, 76 Old West Coast Road

**Mrs A McDonagh** (together with **Mr C McDonagh** in support), 175 Old West Coast Road

**Dr K Duncan**, consulting scientist for **Mrs A and Mr C McDonagh**

Written statement received from **Mr N and Mrs M Clarkson**, 100 Old West Coast Road

## **Section 42A Reporting Officers:**

### **Christchurch City Council:**

**Ms E Chapman**, senior planner, Christchurch City Council

**Mr M Calvert**, transport network planner, Christchurch City Council

**Mr J Trevathan**, acoustic engineer with Acoustic Engineering Services Limited, appeared in support of the report from **Mr W Reeve**, acoustic engineer with Acoustic Engineering Services Limited

**Ms J Dray**, senior landscape architect, Christchurch City Council

### **Canterbury Regional Council:**

**Mr M Harrison** – consents planner, Canterbury Regional Council

**Ms J Simpson** – environmental engineer, Tonkin & Taylor Limited

**Mr S Firth**, Acting Zone Manager for the Christchurch, West Melton, Banks Peninsula Zone Delivery, Canterbury Regional Council

## INTRODUCTION

1 This is a decision of independent Hearing Commissioners, Ms Sarah Dawson (Chair) and Mr John Iseli. We have been appointed by the Christchurch City Council (**CCC**) and the Canterbury Regional Council (**CRC**) (jointly referred to as **the Councils**) pursuant to the Resource Management Act 1991 (**RMA** or ‘the Act’) to hear and determine the application for the following resource consents by Road Metals Company Limited (**Road Metals**):

(a) **RMA/2017/2111** (CCC):

- i. Land use consent for quarrying activity; and
- ii. Land use consent for an aggregates-processing activity.

(b) **CRC181274** (CRC):

- i. Discharge permit to discharge dust to air from the handling of bulk solid materials from quarrying operations.

2 This decision relates to the application for the above consents.

3 For completeness, we were also appointed by CRC to determine associated non-notified applications for land use consent and discharge permit and an application to change the conditions of an existing consent to take and use groundwater. These do not form part of this decision.

## BACKGROUND AND NOTIFICATION

4 The application for resource consents was submitted to CCC and CRC on 1 September 2017. On 15 December 2017, the application was limited notified by CRC, on behalf of the Councils, to all properties within 250m of the proposal (excluding those who had provided written approval). 26 parties were notified. Submissions closed on 5 February 2018. CCC also notified one additional party, the New Zealand Transport Agency (**NZTA**), with that submission period closing on 1 February 2018.

5 The submission from NZTA was received after the closing date for that submission. Commissioner Dawson made a decision on 13 February 2018, on behalf of CCC, to waive the requirement to comply with the timeframe and accept the late submission.

6 Fourteen submissions were received – 13 in opposition and one in partial opposition. 13 submissions were concerned with the consents sought from both CCC and CRC, and one only with the CCC consent (NZTA). 11 of the submitters stated that they wished to be heard. One submitter in opposition subsequently provided their written approval by the time of the hearing, and one submitter advised the Councils that their position had changed from opposition to neutral. The following table sets out the submissions received:

Submitter	Address	Support / Oppose / Neutral	To be Heard	Notes
New Zealand Transport Agency	PO Box 1479 Christchurch	Partial opposition (vehicle access)	Yes	Submission to <b>RMA/2017/2111</b> (CCC) only
K & L Crews	120 Old West Coast Road	Oppose	Yes	
D & J Vallance	105 Old West Coast Road	Oppose	Yes	
C & G Martini	76 Old West Coast Road	Oppose	Yes	
R & J Blanks	90 Old West Coast Road	Oppose	Yes	
D Morris & N van Gosliga	73 Old West Coast Road	Oppose	Yes	
E & A Prain	132 Old West Coast Road	Oppose	Yes	
C & M Main	622 Buchanans Road	Oppose	Yes	
N & M Clarkson & Clarkson Family Trust	100 Old West Coast Road	Oppose	Yes – CCC No - CRC	
C & A McDonagh	175 Old West Coast Road	Oppose	Yes	
J Wenmoth	659 Buchanans Road	Oppose	Yes	Subsequently provided Written Approval
A Merchant and M Toon	138 Old West Coast Road	Oppose	No	
G Beswick	79 Old West Coast Road	Oppose	No	
R & S Benton	335 West Coast Road	Neutral	No	Submission stated opposition, but subsequently changed to neutral

7 We were advised<sup>1</sup> that CRC had informed Te Ngāi Tūāhuriri Rūnanga, Christchurch City Council, Department of Conservation and Canterbury District Health Board (**CDHB**) of the receipt of the application (although they were not limited notified as affected parties). CDHB and CCC responded to this information. CDHB raised concerns regarding the separation distance between the proposed quarry and the nearest properties, stating that a 500m setback was recommended. CCC raised a concern regarding possible effects on the nearby Yaldhurst Cemetery.

8 The issues raised in the submissions included access and traffic, noise, dust and other

<sup>1</sup> Section 42A Report from Mr Harrison, para 40

emissions, health effects, groundwater and stock water contamination, rural character, visual impacts, amenity values (including for Yaldhurst Cemetery), rehabilitation, separation distances from rural-residential properties, property values and ability to sell, prolonging duration of current activity, cumulative effects with other quarrying activities, alternative gravel sources, and monitoring and enforcement.

9 We were provided with copies of all the submissions received and consider these were adequately summarised in the s42A Reports

10 Written approval has been provided by the following:

- (a) G Forbes, 316 West Coast Road
- (b) Winstone Aggregates, 233 Old West Coast Road
- (c) Faulks Investments, 661 Buchanans Road
- (d) J Wenmoth, 659 Buchanans Road
- (e) T Birchfield, 635 Buchanans Road
- (f) K Scott, 619 Buchanans Road
- (g) J & S Clark, 581 Buchanans Road

## HEARING AND PROCEDURAL MATTERS

11 We were informed<sup>2</sup> that submitters had raised a potential conflict of interest arising from Commissioner Iseli having been previously appointed to make a decision on a quarrying activity application in Christchurch City, for which consent had been granted. The matter had been considered by CRC prior to the hearing commencing and, as Chair, Commissioner Dawson considered the matter again. Given that each decision on an application needs to be considered separately on its particular facts and circumstances, she did not consider there was any conflict of interest for Commissioner Iseli in relation to this application and decision.

12 At the start of the hearing, Commissioner Dawson declared that K2 Environmental Limited (who had prepared a report attached to the evidence of Dr Duncan) had undertaken some air quality testing at her home in 2017. Given that it was an unrelated matter and no-one from K2 Environmental was appearing at the hearing, she did not consider this created an actual or perceived conflict of interest.

13 The hearing of the application commenced on Tuesday 3 April 2018, with the submissions and evidence being heard over three and a half days. The hearing adjourned on 6 April 2018 following a verbal right of reply from the applicant's solicitor. Road Metals was requested to provide a final set of proposed conditions by 27 April 2018.

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<sup>2</sup> By CRC staff prior to the hearing, and raised at the hearing by Ms van Gosliga

- 14 We undertook two site visits. In the early evening of Wednesday 4 April, we undertook a preliminary site visit, driving around the immediate area of Buchanans and Old West Coast Roads, to gain a general appreciation of the neighbourhood. We stopped at various roadside locations. The weather conditions were fine.
- 15 On 6 April we undertook a second site visit. The details of this were discussed during the hearing. We visited the existing Road Metals' quarrying and processing plant site accompanied by Mr Johnny Francis, of Road Metals. Mr J Francis had attended some of the hearing days, however, he was not a witness at this hearing. Mr Francis transported us to several locations on the Road Metals' site. We viewed the main Yaldhurst Quarry site including the processing plants, the access to this site from State Highway 73 (West Coast Road), and the quarry expansion areas known as RM1, RM2 and RM3. We were able to view parts of the RM4 site (which is the subject of this quarrying activity application) from its boundaries with RM1 and RM3. We then viewed the northern extent of RM4 from Buchanans Road, including entering the property of Ms K Scott (with her permission). Ms Scott identified for us the boundaries of the application area. As arranged at the hearing, we visited the properties owned by Mr Main, Mr and Mrs Valance, Mr and Mrs Crews and Mr and Mrs McDonagh. Mrs McDonagh was present and indicated how we could access the air quality monitoring installation at the rear of her property. From the rear of the McDonagh property we were able to see into RM1. We walked along the road frontage of the property owned by Mr and Mrs Martini, but did not go on to their property (we did not receive their instructions regarding access in time to do so). Finally, we visited the Yaldhurst Cemetery, including walking to the rear boundary of the cemetery with RM3 and RM4.
- 16 The weather conditions during our site visit were fine. When we commenced there was little wind, but by the time we had completed our site visit, a moderate north-west wind was blowing.
- 17 The hearing was formally closed on 7 May 2018, following receipt of the final conditions from the applicant and its response to some questions of clarification from us regarding the wording of the final conditions.
- 18 Prior to the hearing, reports pursuant to section 42A of the RMA ('s42A Reports') were circulated by the Reporting Officers from the Councils. These included technical reports from experts on behalf of the Councils, recommendations for consent conditions and as to the grant or decline of the application. The applicant's evidence and submitter expert evidence were also provided prior to the hearing and pre-circulated to the parties. We read all the evidence prior to the hearing and directed that it be taken as read during the hearing.
- 19 During the hearing, we sought additional information regarding the monitoring programme measuring respirable crystalline silica (RCS), currently being undertaken by CRC, CCC, CDHB and Worksafe New Zealand in the vicinity of the existing Yaldhurst quarries and gravel processing plants. We initially asked CRC and CCC if some preliminary information from

this monitoring programme could be made available to us, or to the air quality experts providing evidence to the hearing. We were provided with a memo from Mr S Firth, the CRC Acting Zone Manager for the Christchurch, West Melton, Banks Peninsula Zone. He attended the hearing to answer our questions on this matter.

- 20 Mr Firth advised us that RCS results from the monitoring are collected monthly and then sent to Australia for analysis, so are not able to be viewed live. As the results are measured against an annual average guideline, Mr Firth considered the monitoring programme needed to be completed for a substantial period (i.e. at least 3 month's data) to measure against this long-term average. He did not consider that one month's worth of data (all that was then available) would be sufficient from which to gather any meaningful outcomes or actions. He advised us that the information is expected to be available around late June / early July.
- 21 We asked the parties to address us on the options available to us as decision-makers, should we consider we need this information to make our decision on this application. Mr Chapman did this as part of his right of reply. We understand our options to include declining to grant consent to the application pursuant to s104(6) of the RMA, or to adjourn the hearing and request further information from the RCS monitoring programme as soon as it becomes available (pursuant to s41C(4)). However, our timeframe for adjourning the hearing is limited by the requirements of s37, beyond which the agreement of the applicant would be needed. Other options, such as imposing related conditions of consent, are also available to us.
- 22 We asked the air quality experts about the lack of information from the RCS monitoring programme. Ms Simpson acknowledged the uncertainty regarding existing ambient RCS levels at Yaldhurst. However, she considered the other supporting information available; the location, nature and scale of the proposed quarrying activity; and the prevailing wind conditions, mean there is unlikely to be a significant, cumulative effect on ambient RCS levels from this proposal. She retained her opinion that consent could be granted to the air discharge application, subject to appropriate conditions. Mr Chilton answered similarly to our questions on this matter. In addition, the applicant further addressed this issue in its final proposed conditions, whereby commencement of consent would be subject to consideration of the first three months of monitoring results for the Yaldhurst RCS study. As we further explain later in this decision, we determined we were in a position to make a decision on the application based on the evidence before us and the applicant's final proposed conditions.
- 23 We have taken time to summarise information provided to us at the hearing, the evidence, submissions and s42A Reports. We have taken this information into account, as well as from the written submissions and our site visits. We received helpful evidence (both written and in answer to our questions) and legal submissions from the applicant. Several submitters attended the hearing over multiple days. Submitters had gone to considerable effort to provide us with detailed information, which was presented to us in a clear and considered manner. The Councils' s42A Reporting Officers answered our questions in a considered manner and responded responsibly to the issues that arose during the hearing.



Efforts were made to agree wording for potential conditions of consent. We thank all parties for their contributions to this hearing. We consider it has greatly assisted us in fully understanding the material presented to us, and in coming to our decision.

## EXISTING ACTIVITIES AND THE PROPOSAL

- 24 Road Metals currently operates a gravel<sup>3</sup> quarry and processing plants at its existing Yaldhurst Quarry at 394 West Coast Road. This site includes office buildings, weighbridge, workshop, gravel storage, crushing and screening equipment, concrete batching plant, settling ponds and internal roads, with access directly to West Coast Road / State Highway 73 (SH73). Since 2006, Road Metals has obtained consents to expand its gravel quarrying operations into areas of adjoining land, known as RM1 (sometimes referred to as Areas A & B) in 2006, RM2 in 2009 and RM3 in 2015. Gravel has not been processed at any of the expansion areas; it has been trucked via internal haul roads to the Yaldhurst Quarry site for processing. The RM1 area has been quarried and then rehabilitated with grass cover; RM2 has been fully quarried with initial stages of rehabilitation with topsoil and grass having been undertaken recently; and most of the available gravel has been extracted from RM3. Road Metals holds a number of land use consents, discharge and water permits (from CCC and CRC) to undertake its activities on the Yaldhurst Quarry site and the 3 existing quarry expansion areas.
- 25 The details of this current proposal have been described in the application documentation and key aspects set out in the s42A Reports. We do not repeat this in full here.
- 26 In summary, Road Metals seeks to continue the expansion of its quarrying operations to the north of RM2 and RM3, into an area identified in the application as RM4. The total area of RM4 has been variously stated to us as being approximately 10/11/13ha in area. We calculate it to be between 10ha and 11ha in area. However, the boundaries of the RM4 application site are clearly marked on the figures included in the application documentation. As with the previous expansion areas, no stockpiling or processing of gravel is proposed within the RM4 area. The quarried gravel is proposed to be transported via internal haul roads to the Yaldhurst Quarry site for processing. There will be no vehicle access from the RM4 site to Buchanans Road and all vehicle access will be through the Yaldhurst Quarry site and its existing access to West Coast Road.
- 27 Application has been made for land use consent for quarrying within RM4, as well as for processing the quarried gravel from RM4 by the existing processing plant at the Yaldhurst Quarry. The processing of gravel at the Yaldhurst Quarry site is covered by an existing consent to discharge contaminants to air, which is sufficient to cover the processing of gravel from RM4. Road Metals has applied for consent to discharge dust to air associated with the

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<sup>3</sup> We have used both the terms “*gravel*” and “*aggregate*” in this decision. We have assumed that, in relation to the activities proposed in this application, the terms “*gravel*” and “*aggregate*” can be used interchangeably and refer to the same extracted and/or processed material.

quarrying operations on RM4. As stated earlier, Road Metals requires three other consents from CRC for the proposed quarry expansion, however, these are being decided by us separately, as non-notified applications.

- 28 A term of 8 years is sought by Road Metals for each of the consents sought.
- 29 A number of mitigation and monitoring measures have been offered by Road Metals. These are described in the application documentation and the s42A Reports.
- 30 Prior to the hearing, Road Metals offered an amendment to the proposal, such that the setback distance for excavation would be 100m from the closest point of the houses at 622 and 659 Buchanans Road, unless written approval is obtained from the owners and occupiers of those houses to quarry closer. Through the course of the hearing Road Metals agreed that the setback would be from the 'notional boundary' of the houses<sup>4</sup>. Immediately prior to the hearing written approval was obtained from the owner and occupier of 659 Buchanans Road.
- 31 During the hearing, other amendments and additions were offered by Road Metals to the mitigation and monitoring measures proposed. The key aspects included:
- (a) Various amendments to the screening and rehabilitation conditions agreed between Ms Dray and Mr Compton-Moen;
  - (b) Upgrade to the formation of the entrance to the processing site from West Coast Road, and management to avoid tracking of material from the site on to the road;
  - (c) Speed restriction for trucks within the RM4 site and on the haul road to 15km/hr; and
  - (d) Restricting construction activities to not starting before 7.30am.

## THE SITE AND LOCALITY

- 32 The properties subject to the application are located at 581, 619 & 635 Buchanans Road and 350 West Coast Road (the RM4 site) and at 394 West Coast Road (the Yaldhurst Quarry site). The legal descriptions are set out in the CCC s42A Report. The properties are approximately 2.5km west of the settlement of Yaldhurst.
- 33 The RM4 site is located within the Rural Urban Fringe (**RUF**) Zone in the Christchurch District Plan (**CDP**) and the Yaldhurst Quarry site is located within the Rural Quarry (**RQ**) Zone.
- 34 The northern boundary of the RM4 site has two frontages to Buchanans Road of approximately 110m width (between the houses on 581 and 619 Buchanans Road) and approximately 60m width (between the houses on 619 and 635 Buchanans Road). The site extends to the south-west from each of these road frontages for a distance of approximately

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<sup>4</sup> Being 20m from any wall of the house, or the legal boundary of the site containing the house where this is closer to the house, consistent with the definition in the CDP

100m. To the south of these two northern areas, the RM4 site also includes all the rear land on 581, 619 & 635 Buchanans Road (excluding the areas around each house and associated buildings and gardens), including land on 635 Buchanans Road which lies to the south of 659 Buchanans Road. This rear area of the RM4 site also includes a 20m wide strip of land between 619 and 635 Buchanans Road (being part of 350 West Coast Road). The site extends from the boundary of RM1 in the west to a point close to the Yaldhurst Cemetery in the east. It is bounded to the south by RM2 and RM3, with shelter belts and earth bunds currently being located along this boundary.

- 35 The RM4 site is currently in pasture with shelter belts. We observed some livestock grazing and one farm building near the south-east corner of 581 Buchanans Road which appeared to be within the application site.
- 36 The Yaldhurst Quarry site has frontage to, and access from, West Coast Road (SH73). This site is bounded to the to the east by RM2, to the north by RM1 and the Winstone Aggregates quarry and processing site; and to the west by the Fulton Hogan quarry and processing site. The activities currently undertaken on the Yaldhurst Quarry site have been described earlier.
- 37 The immediate localities of the RM4 and Yaldhurst Quarry sites contain a diverse range of land uses, however, these can be characterised into different quadrants.
- 38 To the north and north-east of the RM4 site, the locality is characterised by rural-residential properties of approximately 4ha (or less) in area on Buchanans and Old West Coast Roads, which appear to contain a mix of residential, productive rural and light commercial activities. To the north of the blocks on Old West Coast Road lies a large pastoral farming area (owned by CRC).
- 39 To the north-west and west of the RM4 and Yaldhurst Quarry sites, there are large areas of established quarrying and gravel processing within the RQ Zone, as well as quarrying extensions beyond this Zone. Faulks Investments operates a truck depot and office at 661 Old West Coast Road. There are only a very few rural-residential properties on the south side of Old West Coast Road in this locality, to the west of the RM4 site (west of Buchanans Road). The north side of Old West Coast Road continues to be characterised by rural-residential properties (as described above).
- 40 The Road Metals' quarrying extensions RM2 and RM3 lie to the south of the RM4 site. Across West Coast Road from the Yaldhurst Quarry site lie a Road Metals' quarrying and backfilling site (377 West Coast Road), a large Department of Corrections' prisons site, a farming property at 357 West Coast Road<sup>5</sup>, and further farming properties to the east.
- 41 To the east of the RM4 site is the Yaldhurst Cemetery and a scout facility on the corner of

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<sup>5</sup> The CCC s42A report states that a resource consent (RMA/2016/2827) has recently been granted to quarry the land at 357 West Coast Road to a depth of 4m and to subsequently use the site for a contractors' yard. The report also states that CCC records indicate the consent holder has begun to give effect to the consent through the preparation of a site management plan in accordance with consent conditions.

Buchanans and West Coast Roads.

- 42 The major rural roads are also noticeable features of this locality. SH73 is a busy road carrying high levels of heavy traffic. Buchanans and Old West Coast Roads were also noticeably busy during our site visits. Noise from SH73 was noticeable during our site visits as, to a lesser degree, was the noise associated with passing traffic on Buchanans and Old West Coast Roads.

## THE HEARING

### Applicant's Case

- 43 **Mr Ewan Chapman**, Counsel for Road Metals, conducted the applicant's case and provided us with written legal submissions, as well as a bundle of planning documents setting out the relevant parts of the district and regional plans, which he took us through. He introduced the application and addressed the status of the activities sought in the application, the statutory considerations, and key legal considerations. He called nine witnesses, from whom statements of evidence had been pre-circulated. He tabled a further statement of evidence from Mr Chilton, and suites of proposed conditions for the land use and air discharge (which were further updated as the hearing progressed).
- 44 Mr Chapman addressed the implications of the High Court *Davidson*<sup>6</sup> decision (on which a Court of Appeal decision is awaited) for our consideration of Part 2 matters in relation to these resource consents. He submitted<sup>7</sup> that we should apply the legal interpretation as at the closure of the hearing and, at the moment, we can have recourse to Part 2 matters (in limited circumstances) when considering the application and submissions, but not as a separate exercise afterwards. He submitted in questioning that the *Davidson* decision means we can assume that the objectives and policies of the planning documents are already imbued with Part 2 considerations<sup>8</sup>.
- 45 Mr Chapman also addressed us<sup>9</sup> regarding a recent decision of the Environment Court on quarrying in Christchurch District (the *Harewood Gravels* case<sup>10</sup>), for which a High Court appeal hearing has been held but no decision is yet available. He provided us with a copy of the Notice of Appeal in this case. He submitted that, because of the extent of the matters subject to the appeal, we should not consider this case as relevant to our decision.
- 46 **Mr Murray Francis**, Managing Director of Road Metals, provided a written statement of evidence and presented a summary at the hearing. He provided background to the Road

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<sup>6</sup> *RJ Davidson Family Trust v Marlborough District Council* [2017] NZHC 52

<sup>7</sup> Opening legal submissions for the applicant from Mr Chapman, para 27-30

<sup>8</sup> Mr Chapman also submitted, in answer to questioning, that although there is no bar to us considering the Canterbury Regional Policy Statement (CRPS), following the *Davidson* decision approach would indicate a presumption that the district and regional plans are imbued with the CRPS objectives and policies (provided they were prepared after the CRPS was developed).

<sup>9</sup> Opening legal submissions for the applicant from Mr Chapman, para 42-43

<sup>10</sup> *Yaldhurst Quarries Joint Action Group v Harewood Gravels Ltd* [[2017] NZEnvC 165

Metals' company, an overview of the facilities, operations and access at the existing Yaldhurst Quarry, and best practice guidelines followed by Road Metals. Mr Francis presented information regarding regional demand for gravel in Greater Christchurch and estimates of this demand, and available supply, for the period 2014 to 2041<sup>11</sup>. He quoted the conclusion of the *Twelfth Knight Consulting Report*, 2014, that an additional 40 million tonnes over what is currently available will be required to satisfy demand from Greater Christchurch until 2041. Mr Francis also addressed the availability of alternative sources of gravel, and the economics of establishing a quarry from Road Metals' perspective.

47 **Mr Lindsay Forbes**, the Quarry Manager at the Yaldhurst Quarry site (including the proposed RM4 site) provided evidence in relation to the existing quarrying and processing operations, and the best practice guidelines followed by Road Metals. He described the nature of the gravel extraction and rehabilitation activities proposed for the RM4 site, including Road Metals' proposals for dust and noise effects management.

48 **Mr Michael Copeland**, a consulting economist with Brown, Copeland and Co Ltd, presented a written summary of his pre-circulated evidence. He addressed the relevance of economic effects under the RMA, the future demand and supply of gravel in Greater Christchurch, the economic importance and benefits from maintaining Christchurch's low-cost gravel supplies, and the economic benefits of the proposed RM4 quarry extension. He stated that Greater Christchurch is effectively self-sufficient in aggregates, there is currently no need to transport aggregates into the area, and that this is of significant economic advantage to Christchurch as the cost of transporting aggregates is a significant proportion of their delivered cost. He concluded that the net economic effects of the proposed RM4 quarry extension are positive and significant. In answer to questioning, Mr Copeland elaborated on why he does not undertake a comprehensive cost-benefit analysis, stating that, in his opinion, the overall judgement to be made by the decision-makers is not assisted by an economist's overall evaluation.

49 **Mr David Compton-Moen**, an urban designer / landscape architect with DCM Urban Design Ltd, presented a written summary of his pre-circulated evidence, and took us through each of his landscape and visual assessment photographic figures that had been pre-circulated. Mr Compton-Moen assessed the effects of the proposed RM4 quarry on existing landscape character, rural amenity values of the surrounding environment, and visual amenity for neighbouring properties and passing motorists. He took us through the mitigation measures he recommended to achieve screening of the quarry and rehabilitation of the site. He continued to discuss the proposed mitigation measures with Ms Dray, the CCC's landscape architect, throughout the hearing, and we are grateful for the level of agreement they achieved. Mr Compton-Moen concluded that, with the implementation of the proposed

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<sup>11</sup> Attached to Mr Francis' written evidence was a report prepared by *Twelfth Knight Consulting* for Christchurch City Council, as background material for the Christchurch District Plan review (the *Twelfth Knight Consulting Report*, 2014). The author of the report did not present evidence to this resource consent hearing.

mitigation measures, the proposed RM4 quarry will result in less than minor effects on landscape character and on visual amenity for visitors to the Yaldhurst Cemetery and residents at 622 Buchanans Road and 105 Old West Coast Road, and indiscernible effects on rural amenity generally and visual effects for other residents. In answer to questioning, he stated that overall landscape character will stay much the same, and that, with the retention of shelterbelts and housing pattern, rural amenity generally and visual amenity for individual houses will be maintained.

50 **Mr Andrew Metherell**, a transportation engineer with Traffic Design Group Ltd, provided evidence regarding traffic effects and site access at the Yaldhurst Quarry site. He described the existing access layout, assessed it against relevant standards, and commented on existing issues regarding pavement maintenance and carrying gravel material on to SH73. Mr Metherell stated that the proposed RM4 quarry expansion would result in a negligible change from existing traffic effects, and the access design exceeded what is required by the NZTA and CCC standards. Discussions between Mr Metherell, the CCC's transport network planner, Mr Calvert, and the representatives from New Zealand Transport Agency (NZTA) had occurred prior to, and continued during, the hearing. We are grateful for their efforts to reach agreement regarding proposed conditions for access design and upgrade works, and measures to minimise material being tracked on to the road.

51 **Mr Victor Mthamo**, an environmental engineer with Reeftide Environmental and Projects Ltd, presented a written summary of his pre-circulated evidence. He addressed the measures proposed for rehabilitation after quarrying, to return the site to grass cover capable of supporting light pastoral farming. He had considered the existing rehabilitation already undertaken within the Road Metals' quarry (RM1 site) and concluded that the grass cover looks good and is in a healthy state. With the rehabilitation measures proposed, Mr Mthamo concluded the site would be able to sustain pasture growth which could be used for light grazing, consistent with traditional rural-residential uses in the area.

52 **Mr Eric van Nieuwkerk**, a hydrogeologist with Golder Associates (NZ) Ltd, provided evidence regarding effects on groundwater and surface water from the proposed quarry operations and subsequent rehabilitation. He observed that the RM4 quarry is located in an area of high aquifer vulnerability, within the Christchurch Groundwater Protection Zone. He accepted the investigations undertaken by CRC's groundwater scientist, Dr Lisa Scott, and that the maximum excavation depth should conservatively be 10.1m below ground level (bgl) in order to maintain one metre of separation above the highest seasonal water table assessed across the site. With the management and rehabilitation measures proposed by Road Metals (including conditions to manage unexpected situations<sup>12</sup>), he concluded that effects on groundwater from the quarry would be less than minor, with no effects on surface water.

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<sup>12</sup> Such as, but not limited to, fuel spills

- 53 **Mr Gary Walton**, acoustic consultant with Marshall Day Acoustics, provided evidence regarding the existing noise environment in the vicinity of the RM4 site, calculation of the noise levels to be generated by activities proposed for the site, compliance with noise standards in the District Plan, and predicted noise effects for the nearest residents. He assessed that noise from quarrying activities will comfortably comply with the District Plan standards; and short-term site preparation, bund construction and rehabilitation works will comply with the construction noise standards. He concluded that noise levels at neighbouring houses will be acceptable and, whilst audible at times, adverse effects will be minimal for residents. Mr Walton was not able to provide us with information regarding noise levels from the processing plant. Mr Chapman subsequently provided us with a 1999 noise assessment report by Marshall Day Acoustics<sup>13</sup>, predicting noise levels from the quarrying and processing plant, at the site boundaries and nearest houses at that time.
- 54 **Mr Richard Chilton**, principal air quality scientist with Golder Associates (NZ) Ltd, provided evidence regarding the effects of discharges from the proposed activities on air quality. His evidence primarily addressed the effects of particulate matter (PM), including respirable crystalline silica (RCS). In relation to combustion emissions from operation of machinery, he stated that these would not be expected to result in an appreciable effect beyond the site boundary given the small number of vehicles operated at the site.<sup>14</sup> He also discussed the results of relevant air quality monitoring undertaken in the local area, including the current monitoring programme being undertaken to measure PM and RCS around quarries in the Yaldhurst area<sup>15</sup>. He considered that dust emission sources from the RM4 site are limited given the nature of the activities proposed, with the main potential source being vehicle/machinery movements. Taking into account the mitigation and monitoring proposed, Mr Chilton concluded that the activity would result in dust effects that are less than minor. He stated that the discharge would be unlikely to cause exposures to RCS that approach or exceed relevant guidelines for the protection of human health.
- 55 **Mr Kevin Bligh**, a planner with Golder Associates (NZ) Ltd who prepared the application, presented written evidence, that was pre-circulated, and proposed conditions for the land use and air discharge consents. Mr Bligh's evidence described the planning status of the activities sought, provided a summary of the assessments of effects (relying on the evidence of other witnesses), and an analysis of the statutory provisions including consistency with the objectives and policies of the CRPS, regional and district plans. His evidence commented briefly on some of the conditions recommended in the s42A Reports. He concluded that the proposal is consistent with the relevant objectives and policies, and that adverse effects can be adequately avoided or mitigated, through the conditions proposed in

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<sup>13</sup> Marshall Day Acoustics, letter to Road Metals Limited, Noise Assessment, Extension of Yaldhurst Quarry, 25 August 1999

<sup>14</sup> Evidence of Mr Chilton, para 14.

<sup>15</sup> Yaldhurst air quality monitoring study undertaken by Mote Ltd and Emission Impossible Ltd for Environment Canterbury in partnership with Canterbury District Health Board and Christchurch City Council.

the s42A Reports (subject to some amendment), to a level which is less than minor.

## Submitters

- 56 We heard from nine of the submitters who spoke to their written lodged submissions. Several submitters read extensive written statements of their concerns.
- 57 **Mr Ross Blanks**, 90 Old West Coast Road, provided oral evidence in support of his concerns regarding health effects from quarrying dust, including from respiratory crystalline silica (RCS); the impacts on groundwater from quarrying to the depth proposed (combined with effects from the Central Plains Water scheme); adverse effects on the amenity of his locality (from dust and another “hole” in his neighbourhood); and the cumulative impacts on top of existing risks and health concerns.
- 58 Mr Blanks stated that risk from RCS was the main issue for residents. He emphasised the lack of existing information regarding the current (and future) RCS health risks for people and animals in the area, in the absence of data from the RCS monitoring currently being undertaken<sup>16</sup>. Mr Blanks described his experience with dust management on existing quarrying sites in the area (such as lack of water trucks operating when needed and their ineffectiveness in hot dry conditions); and the resulting dustiness of the area. He described symptoms of nose and eye complaints for local residents, that had worsened over the last few years.
- 59 Mr Blanks sought a separation distance of at least 500m between the proposed quarry and nearest houses, which he considered would be necessary to be consistent with the State of Victoria EPA Guideline (“Victoria Guideline”)<sup>17</sup>. If consent is granted, he sought conditions preventing quarrying until the RCS monitoring results are available, peer reviewed and found to be below guideline levels; limitations on quarrying in high winds from any direction; continuous PM<sub>10</sub> monitoring; covering of trucks; continuous watering of quarry and haul roads; and strict, audited compliance with conditions.
- 60 **Mr Derek Vallance**, 105 Old West Coast Road, read to us from a written statement setting out his concerns (and those of his wife) regarding the location of the proposed quarry; noise impacts (including from traffic on Buchanans Road); dust pollution at his property; loss of pleasantness of the area; negative cumulative effects for the wellbeing of residents; and effects on groundwater. Mr Vallance set out his understanding of the CDP which he interpreted as classifying quarrying as a non-complying activity in this locality, as it is less than 250m from a residential area. He also referred us to the Victoria Guideline and his understanding it states quarrying involving RCS should be at least 500m from a residential dwelling (and its curtilage). Mr Vallance sought the application be declined, as he considered separating quarrying from houses was the only mitigation measure that would protect the

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<sup>16</sup> We refer to this later in our decision

<sup>17</sup> Environmental Protection Authority Victoria. Recommended separation distances for industrial residual air emissions. Publication 1518, March 2013



local neighbourhood.

- 61 **Ms Nancy van Gosliga**, 73 Old West Coast Road, read a written statement describing her family's concerns regarding the effects of the proposed quarry on their health and lifestyle. She described their existing lifestyle property as peaceful, and free of any dust nuisance. Ms van Gosliga addressed health issues for her son which would be aggravated by quarry dust (including RCS); as well as lack of enforcement for pollution from existing quarries in the area; and cumulative effects with dust from existing quarries. She emphasised that it should not be up to residents to monitor compliance. Ms van Gosliga expressed her concern that the CDHB was not notified of the application nor invited to be a party to the hearing; and drew our attention to its expressed concern at the lack of a 500m separation distance from houses. Ms van Gosliga sought the application be declined, but if consent is granted, she sought conditions requiring a 500m setback from other properties, sealing the haulage road, no operation on Saturdays, covering of trucks, dust monitoring, and strict enforcement of requirements.
- 62 We next heard from two witnesses on behalf of NZTA whose written evidence had been pre-circulated – **Mr Anthony Spowatt**, a traffic and safety engineer with NZTA, and **Mr Stewart Fletcher**, a consultant planner. Their evidence addressed NZTA's concerns regarding the formation and maintenance of the existing access to the Yaldhurst Quarry site from SH73, and the deposition of loose gravel material on to the highway. They recommended improvements to the access and a management plan to minimise deposition of material on the road, including recommended conditions. At the hearing, the NZTA witnesses informed us of their discussions with Mr Metherell regarding the proposed conditions, including general agreement regarding improvements to the access formation. They offered to discuss the management condition further with Mr Metherell, prior to the applicant finalising its conditions.
- 63 **Mr Kevin Crews**, 120 Old West Coast Road, read a written statement setting out his family's concerns regarding the adverse effects of the proposed quarry (noise, vibration, dust and visual) on the rural character and amenity that had attracted them to live in the area. He provided photographs of his pleasant lifestyle property, which we also visited on our site visit. In answer to our questions, Mr Crews informed us that the main existing noise nuisance experienced at their property is from trucks on Old West Coast Road, which has increased since the earthquakes. With respect to ambient dust levels, he was loathe to make anecdotal comments and considered decisions should be made on the basis of sound monitoring information.
- 64 Mr Crews expressed his concerns regarding health effects from quarrying dust (including from RCS) which have not been properly addressed by the applicant or the reporting officers; the lack of data on ambient RCS concentrations; the inadequate setback from houses (not in accordance with the Victoria Guideline or CDHB recommendation); and the lack of tangible economic benefits from a quarry of this size (compared with the future needs of

Christchurch). Mr Crews sought that the application be declined.

65 **Mr Eric Prain**, 132 Old West Coast Road, spoke to us regarding his concerns about dust effects, both nuisance and health effects (in what is already a dusty area); impact on the value of properties in the area; and the number of gravel trucks in the area. He emphasised the number of quarries already in the area and the associated cumulative effects. He sought the application be declined.

66 **Mr Chris Main**, 622 Buchanans Road, spoke to us on behalf of himself and the company which owns the property (of which he is a Director). He expressed his concerns regarding the proximity of his property to the quarry site (with noise, dust, health and visual effects). He considered the 100m setback offered by the applicant to still be too close. He was also concerned about the impact on the value of the property and the ability to sell. He sought that the application be refused.

67 **Mrs Soraya Nicholas** addressed us on behalf of her neighbours, **Mr and Mrs Martini**, 76 Old West Coast Road. Mrs Nicholas read their written statement. The statement described the Martini's peaceful, rural lifestyle property, including their cottage used as B&B visitor accommodation, large olive grove and rare-breed sheep. We were informed about Mrs Martini's chronic lung condition. They stated that, at the moment, they have no dust problems on their property, and no ambient noise issues, being surrounded by lifestyle properties and a large farm leased from CRC for grazing. They set out their specific concerns regarding adverse impacts from dust contaminants, including silica, for themselves, their visitors, stock and crops; noise; loss of tranquility and special amenity of their property; and loss of property value; as well as lack of enforcement for pollution from existing quarries in the area; and cumulative effects with dust from existing quarries. Mr and Mrs Martini's statement noted concern that the CDHB was not notified of the application; and drew our attention to its expressed concern at the lack of a 500m separation distance from houses (consistent with the Victoria Guideline). Mr and Mrs Martini sought the application be declined, but if consent is granted, sought conditions requiring a 500m setback from other properties, sealing the haulage road, no operations on Saturdays, covering of trucks, dust monitoring, and strict enforcement of requirements.

68 **Mrs Anell McDonagh**, 175 Old West Coast Road, appeared on behalf of herself and her husband. Mrs McDonagh read a written statement describing her family's concerns with the proposed quarry. She provided us with aerial photographs showing the changes in extent of quarrying and associated activities in the vicinity of their property since they purchased in 2006. She explained the four resource consents they have submitted against over the last four years; and how they are the only remaining lifestyle block on the south side of Old West Coast Road in this vicinity, being surrounded by quarrying, potential quarrying land and a large trucking yard. There is an ambient dust (and RCS) monitoring station on their property.

69 Mrs McDonagh described the dust nuisance she currently experiences from the large area

of exposed land at the existing quarries, and the lack of effective mitigation (or enforcement by CRC) for these impacts. She expressed her concerns at the cumulative effect of noise and dust from the proposed new quarry, in addition to the current quarry noise and dust pollution, on her family's health and quality of life. She showed us a brief video of dust from the Yaldhurst Quarry site from the rear of her property during a windy day.

70 Mrs McDonagh set out her efforts to gain a full understanding of the Victoria Guideline which she interprets as requiring quarrying involving RCS to be at least 500m from a residential dwelling. She also urged us to take into account the findings of the Environment Court in the *Harewood Gravels* case, which she considered relevant to the RM4 proposal. Mrs McDonagh sought the application be declined, but if consent is granted, sought more stringent conditions, such as automatic sprinkler systems, planting of bunds, and more frequent auditing by CRC.

71 **Dr Kelvin Duncan**, consulting scientist, appeared for **Mrs and Mr McDonagh**. His written evidence had been pre-circulated. He read a written summary of his evidence, as well as answering our questions. Dr Duncan's pre-circulated evidence focused primarily on the potential effects of RCS. He discussed the findings of research undertaken regarding the effects of RCS and also relevant air quality guidelines applied internationally to non-occupational exposure. His evidence also discussed appropriate mitigation measures, focusing on quarry setback distances to sensitive receptors that are applied overseas.

72 Dr Duncan's evidence presented at the hearing expanded on the matters in his pre-circulated evidence and also discussed matters raised by Mr Chapman and by Mr Chilton in his rebuttal evidence. He referred to the dose-response relationship for RCS and stated that the 3µg/m<sup>3</sup> point represents a significant upward increase in the gradient of the appropriate dose-response curve. He discussed dust samples taken at dwellings near existing quarries in the Yaldhurst area, gathered by K2 Environmental Ltd in 2016, that indicated an RCS content in collected dust of approximately 30 percent. Dr Duncan concluded that the current evidence on the effects of RCS warrants a precautionary approach to the application, with a setback distance of at least 500m to dwellings and best practice mitigation measures applied.

73 **Mrs Maria Clarkson**, 100 Old West Coast Road, was unable to be present to address us at the hearing. However, she had prepared a written statement on behalf of her and her husband, which we have read. Her statement outlined their concerns regarding the proximity of their property to the proposed quarry, with associated health effects for themselves and their animals (including from RCS); lack of separation from houses (as required by Victoria Guideline and recommended by CDHB); aggravation of health problems experienced by their dog since moving to the area; impact on the value of their house (and potential to sell); and loss of pleasantness generally from expansion of quarrying in the area.

## Section 42A Reports

### *Christchurch City Council*

- 74 **Mr Mike Calvert**, transport network planner, spoke to his report. He updated us on his discussions with the NZTA representatives and Mr Metherell for the applicant. He acknowledged that the current access does exceed the CDP requirements in some ways, as it is a “hybrid” design which has evolved over time. He had a concern that the south-west shoulder (for trucks turning right out of the access) requires some upgrading of its formation. In this regard, he was satisfied with the access formation condition that had been agreed between the applicant and NZTA. However, he had reservation regarding the wording of the management plan condition.
- 75 **Mr Jeremy Trevathan**, acoustic engineer, spoke to the report of **Mr W Reeve**. Mr Trevathan had discussed proposed consent conditions with Mr Walton, for the applicant, and had reached general agreement. In answer to our questioning, he stated he agreed with Mr Walton that the existing noise amenity in the surrounding rural area would be maintained. He stated that traffic noise would continue to be the main noise experienced at the nearby rural properties. This was variable as vehicles passed on Old West Coast and Buchanans Roads. In his opinion, noise from the quarry would be noticeable at times, but overall he considered there would be an insignificant adverse change in the noise environment. Although the noise levels from the construction activities would be higher, they would be of limited duration and not unusual types of noise for a rural area. He was confident that the proposed bunds would not act to reflect noise from passing traffic back across Buchanans Road to the properties to the north.
- 76 **Ms Jennifer Dray**, landscape architect, spoke to her report and answered our questions. She had also discussed proposed consent conditions with Mr Compton-Moen, for the applicant, and had reached general agreement. She agreed it would be helpful for the rehabilitation conditions to specify that regressing was to take place at suitable times of the year (spring/ autumn), and that rehabilitation should be undertaken in a staged, progressive manner. With respect to the effect of quarrying on the landscape character of this part of the Canterbury Plains, Ms Dray retained a concern that the natural flat landform feature of the plains, with its pattern of shelterbelts, was being permanently eroded by quarrying activities and that, even after rehabilitation, the landscape would be left with holes and depressions. However, she stated she did not consider that the proposed RM4 quarry was a “tipping point” in this case, as it is an extension of other excavations in the same area.
- 77 **Ms Emma Chapman**, planner, spoke to her report, answered our questions and addressed us on the proposed consent conditions. She said that she had generally adopted the *Davidson* approach in her report, that Part 2 has been given effect to by the CDP, and similarly the CRPS<sup>18</sup>. She drew our attention to the *Harewood Gravels* case which states

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<sup>18</sup> Section 42A Report from Ms Chapman, para 32 & 199

that the Strategic Directions of the CDP are not intended to be applied on a case-by-case basis. She considered they would provide guidance where there is conflict between objectives and policies in the CDP. In other respects, she considered that little weight could be placed on the findings of the *Harewood Gravels* case, as the appeal to the High Court was wide-ranging and related to the Environment Court's interpretation of the CDP's provisions.

- 78 Ms Chapman did not consider there was any need to separate the land-use consent into two consents (for the quarrying and processing)<sup>19</sup>, as the consents were intrinsically linked and the resulting combined conditions were not unwieldy. With respect to the dust mitigation measures proposed by the application, she said it was difficult to establish what is "best practice" as there is no industry guidance or standard as to best practice. All possible mitigation measures do not need to be used at every site, and the suite of measures should be tailored to the specific situation. In her opinion, it would be good practice to adopt sufficient mitigation measures to internalise the adverse effects as far as practicable. She was satisfied that this had been achieved. Regarding whether this was "acceptable" or not, she acknowledged that the surrounding residents may not agree. However, she assessed "acceptable" by comparing her understanding of the outcomes anticipated by the CDP provisions against the effects predicted by the expert assessments. In this sense, she was satisfied that the dust outcomes would be "acceptable".

*Canterbury Regional Council*

- 79 **Ms Jenny Simpson**, environmental engineer, spoke to her technical report<sup>20</sup> and answered our questions. She confirmed the contents of her pre-circulated report. Responding to concerns raised by submitters regarding interpretation of the Victoria Guideline, Ms Simpson expanded on her opinion that it is appropriate to modify the setback distance from a quarry to individual dwellings depending on the specific circumstances of each case. She stated that for properties larger than 0.4ha in area the setback distance should be applied to the notional boundary of the dwelling. We asked Ms Simpson if the setback distance from quarrying activities of 100m to the notional boundary of the nearest dwelling, as now proposed by the applicant, would be sufficient given the current state of knowledge regarding the effects of RCS. She responded that having considered the nature of the activity, the location of dwellings relevant to local wind conditions, the mitigation proposed and the dust monitoring proposed, the setback from dwellings is adequate. She stated that in terms of PM<sub>10</sub> and RCS emissions the proposed activity is not "high risk" because processing (including crushing and screening) of aggregate will not occur on the RM4 site.
- 80 **Mr Matthew Harrison**, consents planner, spoke to his report and answered our questions. He stated that he had changed his recommendation from that contained in his pre-circulated

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<sup>19</sup> We had asked about this possibility

<sup>20</sup> Section 42A Technical Report from Ms Simpson

s42A Report, because written approval had been obtained from the owners and occupiers of 659 Buchanans Road and the associated advice from the air quality experts. He recommended that the air discharge consent be granted. In answer to a question, he explained that the CRC procedure of informing the CDHB when air discharge applications were received was more in the nature of a courtesy by CRC, rather than because the organisation might be an affected party. He verbally explained his understanding that the Central Plains Water (CPW) irrigation scheme, once fully operational in this area, may increase average groundwater levels and may flatten out seasonal fluctuations in levels, but would not be not likely to increase the highest recorded levels.

### **Applicant's Reply**

- 81 Mr Chapman presented an oral reply on the final morning of the hearing days.
- 82 Mr Chapman summarised his understanding of the Victoria Guideline. He submitted that it operates in a different consenting regime to the RMA, more akin to a permitted activity regime, with a pathway available within the Guideline to depart from the recommended setback distances. He also pointed us to the list of activities that are permitted in the Guideline's setback distances, which include a variety of uses that contain people and would be considered sensitive land uses.
- 83 Mr Chapman set out a list of the certainties and uncertainties he submitted were before us as decision-makers. However, he stated that all decisions are made in the face of some uncertainty and that the RMA was not a "no-risk" statute.
- 84 Mr Chapman outlined a range of options available to deal with the uncertainties. We could decline the application on the basis of the lack of sufficient information. However, Mr Chapman submitted that we had sufficient information to come to a decision. We could defer making a decision until more information regarding ambient RCS levels was available, by more than doubling the statutory time limit for closing the hearing, but this would require the applicant's consent. He submitted that, even by June / July when the first information from the RCS monitoring is expected to come available, there would still be uncertainty regarding the interpretation of the results. He stated that we have an undertaking from Mr Chilton to provide any information that comes available before the hearing closes. He stated that Road Metals would prefer certainty of a decision (one way or another), rather than delay.
- 85 As alternatives to declining or delaying a decision, Mr Chapman referred us to our ability to incorporate adaptive management conditions, either pre-commencement conditions or ongoing conditions. He specifically noted options as to a starting condition or a review condition, as well as the conditions to control emissions and dust effects.
- 86 In relation to the methodology for testing for RCS, Mr Chapman noted that both the air quality experts for the applicant and CRC agreed that the appropriate guideline is based on an annual average, reflecting the risk from long-term exposure, which is the method being used for the current RCS monitoring programme. As to the point at which any setback from a

house should apply, Mr Chapman supported the concept of a “notional boundary” or curtilage, as is used for noise measurements in the CPD. With respect to separating the land use consents into two consents, although there was no bar to doing this, Mr Chapman submitted that there were advantages in having them tied together for the consent authority and for the residents.

87 Mr Chapman indicated the applicant had noted the various questions from us regarding conditions and would address many of these in its final conditions. He agreed to provide them in writing by 27 April, having liaised with the Councils.

88 Mr Chapman addressed us on the matter of cumulative effects and drew our attention to the definition in the RMA. He submitted that no adverse cumulative effects would arise as a result of the RM4 application, as this was just part of an ongoing series of areas of quarrying followed by rehabilitation. He submitted that the requirement to rehabilitate the processing plant area would result in a long-term improvement from the existing situation. He acknowledged that the processing plant would be able to operate for a longer duration as a result of the gravel from the RM4 site. However, in terms of scale, intensity and frequency of adverse effects, he submitted that there would be no cumulative effects with RM4; given the overall gains from rehabilitation and other conditions at the Yaldhurst Quarry site.

89 In relation to the effects on groundwater levels from the CPW scheme, Mr Chapman was dismissive of any likelihood it would result in increased highest groundwater levels at the RM4 location.

90 The applicant’s final conditions were received in writing on 27 April. We asked for clarification from the applicant regarding the wording of some of the proposed conditions. This was provided to us by way of updated conditions on 4 May (the 4 May Conditions), along with wording we had requested from NZS 6803:1999 Acoustics Construction Noise.

## ASSESSMENT

### Introduction

91 In assessing the application, we have considered the application documentation and Assessment of Environmental Effects (AEE), the s42A Reports and technical reviews, all written submissions received and the evidence and submissions provided prior to and during the hearing. We also undertook two site visits.

92 We requested and received copies of the following information:

- (a) Decision of the Environment Court – *Road Metals Company Limited v Christchurch City Council & Canterbury Regional Council*. C163/2006;
- (b) Notice of Appeal to the High Court from Harewood Gravels Company Limited in relation to the decision of the Environment Court – *Yaldhurst Quarries Joint Action Group v Harewood Gravels Ltd* [2017] NZEnvC 165;

- (c) Environmental Protection Authority Victoria. Recommended separation distances for industrial residual air emissions. Publication 1518, March 2013;
- (d) Official Statement of the American Thoracic Society, June 1996. *Adverse Effects of Crystalline Silica Exposure*. American Journal of Respiratory and Critical Care Medicine 155, 761-765;
- (e) Norboo T, Angchuk PT, Yahya M, Kamat SR, Pooley FD, Corrin B, Kerr IH, Bruce N, Ball KP. 1991. *Silicosis in a Himalayan village population: role of environmental dust*. Thorax 46:341-343;
- (f) Reference for a 2009 paper<sup>21</sup> in Air Quality and Climate Change that reviews the dose response for RCS, supplied by Dr Duncan.
- (g) A 2017 NZTA report examining the effects of dust from unsealed roads<sup>22</sup>.
- (h) Mote Ltd and Emission Impossible Ltd, 2018. Yaldhurst Air Quality Monitoring 22 December 2017-21 January 2018. Report prepared for Environment Canterbury, 9 February 2018.

93 While our assessment does not specifically address every point raised, we confirm we have considered all the matters raised in making our determination. The findings we make, and the decision we have arrived at, are based on the evidence presented and our consideration of that material.

### Status of the Application

94 The starting point for the assessment of the application is to determine the status of the activities.

95 All parties agreed that the status of the proposal under the Christchurch District Plan (**CDP**) is a discretionary activity, in terms of:

- (a) Rule 17.5.1.4 (D3) – land use consent for a discretionary activity for quarrying activity in the RUF Zone, and located more than 250m from a residential zone or Specific Purpose (School) Zone boundary; and
- (b) Rule 17.8.1.4 (D1) – land use consent for a discretionary activity for an aggregates-processing activity in the RQ Zone, because the facility does not have a quarry site rehabilitation plan prepared in accordance with Rule 17.8.3.14 and will, therefore, not be operating in accordance with Rule 17.8.1.3 (RD8) d..

96 There was some disagreement between the applicant and the CRC Reporting Officer regarding the applicable rules under the Canterbury Air Regional Plan (**CARP**)<sup>23</sup>. There was

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<sup>21</sup> Bridge, Ian. "Crystalline Silica: A review of the dose response relationship and environmental risk." Air Quality and Climate Change, 2009 Vol 43[1] pp 17-33.

<sup>22</sup> Impacts of exposure to dust from unsealed roads, April 2017. NZ Transport Agency Research Report 590

<sup>23</sup> Proposed Canterbury Air Regional Plan (decisions version) (pCARPd) which applied at the time the application



agreement that the proposal would not comply with the conditions of Rules 7.35 and 7.36, which provide for the discharge of contaminants into air from the handling and outdoor storage of bulk solid materials, as permitted activities. However, there were differing interpretations of the rules that would then apply to the activity.

- 97 Mr Harrison referred to the default rules for the discharge of odour, dust or smoke into air that is not managed by any other rule in the CARP<sup>24</sup>. He concluded that Rule 7.4 would apply because Condition 1 of the permitted activity (Rule 7.3) would not be complied with. Rule 7.4 would result in the proposal being considered as a restricted discretionary activity, subject to the matters of discretion listed in that rule. He assessed the application accordingly. Our interpretation of these matters of discretion in Rule 7.4 is that they are wide-ranging, and would enable consideration of most, if not all, potential effects of the discharge and any methods to manage those effects<sup>25</sup>.
- 98 The AEE<sup>26</sup> and Mr Bligh<sup>27</sup> referred to Rule 7.63, which specifies that any discharge of contaminants into air from an industrial or trade premises<sup>28</sup>, that does not comply with permitted activity requirements (and is not prohibited), is a discretionary activity. Mr Bligh has assessed the proposal as a full discretionary activity under s104B of the RMA. Discretionary activity status is also supported in the applicant's legal submissions<sup>29</sup>.
- 99 We have not found these rules straight-forward to reconcile, in particular whether the quarrying activity would fall within the definition of industrial and trade premises (and therefore come under Rule 7.63, rather than the default Rules 7.3 and 7.4). We have decided to take a cautious approach, consistent with the position put forward by the applicant, and have considered the proposal as a full discretionary activity. In doing so, we do not consider that this materially changes the range of matters we can consider from the wide range available under Rule 7.3 and 7.4.
- 100 Accordingly, the activity status under which we have considered each of the consents, district and regional, is discretionary.

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was first lodged (s88A RMA). Rules 7.36 & 7.37 in the pCARPd have become Rules 7.35 & 7.36 in the operative Canterbury Air Regional Plan (CARP), but otherwise the relevant rules have not changed from the pCARPd

<sup>24</sup> Section 42A Report from Mr Harrison, para 32-33

<sup>25</sup> As well as the broad matters of discretion available for all restricted discretionary activities under Rule 7.2, being the lapsing period, the term of the resource consent, the review of the conditions of a resource consent, the need for a bond or financial contributions, any actual or potential adverse effects on places of significance to Ngāi Tahu and the collecting, recording, monitoring and provision of information concerning the exercise of a resource consent.

<sup>26</sup> AEE, Section 8.4.3, page 30-31

<sup>27</sup> Evidence of Mr Bligh, para 3.2 (b)

<sup>28</sup> Industrial and trade premises is defined in accordance with the RMA, as any premises used for any industrial or trade purposes

<sup>29</sup> Opening legal submissions for the applicant from Mr Chapman, para 4.1

## Statutory Considerations

101 We note that the application was lodged prior to the RMA amendments on 18 October 2017 and is subject to the provisions that existed at the time of lodgement.

### *Sections 104, 104B and 105*

102 In terms of s104(1) RMA, and subject to Part 2 which contains the RMA's purpose and principles, we must to have regard to:

- (a) *Any actual and potential effects on the environment of allowing the activity;*
- (b) *Any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand coastal policy statement, a regional policy statement or a proposed regional policy statement, a plan or proposed plan; and*
- (c) *Any other matters the consent authority considers relevant and reasonably necessary to determine the application.*

103 S104(3)(a)(ii) states that we must not have regard to any effect on a person who has given written approval to the application (unless that approval is withdrawn in a written notice before the date of the hearing). We have earlier listed those parties who had provided their written approvals by the time of the hearing.

104 S104(3)(d) states that we must not grant a resource consent if the application should have been notified and was not. The application was limited notified and we have not received any additional information relevant to the making of that decision in terms of s95A and s95B RMA.

105 In terms of s104B, when considering an application for a discretionary activity, we may grant or refuse the resource consents sought; and (if granted) we may impose conditions under s108.

106 In terms of s105, when considering s15 (discharge) matters, we must, in addition to s104(1), have regard to:

- (a) *The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
- (b) *The applicant's reason for the proposed choice; and*
- (c) *Any possible alternative methods of discharge, including discharge to any other receiving environment.*

### *Part 2 RMA*

107 As noted, our consideration of the application is subject to Part 2 of the RMA. Ss6, 7 and 8 contribute to and inform our evaluation under s5.

108 The RMA has a single purpose. S5 provides:

- (1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
- (2) *In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—*
- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*
- 109 S6 identifies matters of national importance that we must “recognise and provide for” in our decision making. There are none which have been brought to our attention in this application.
- 110 S7 lists a number of matters which we are required to have “particular regard to”. Relevantly these include:
- (b) *The efficient use and development of natural and physical resources;*
- (c) *The maintenance and enhancement of amenity values;*
- (f) *Maintenance and enhancement of the quality of the environment;*
- (g) *Any finite characteristics of natural and physical resources.*
- 111 Finally, in relation to Part 2 matters, s8 requires that we take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

#### *National Environmental Standards (NES)*

- 112 Ms Chapman’s s42A Report<sup>30</sup> referred to the NES for Assessing and Managing Contaminants in Soil to Protect Human Health. She concluded that resource consent is not required under this NES, as no disturbance of soil is proposed on the Yaldhurst Quarry site which is identified as HAIL land<sup>31</sup>. We accept her conclusion on this matter.
- 113 Mr Harrison’s S42A Report referred to the NES for Air Quality (NESAQ)<sup>32</sup>. The attached technical report from Ms Simpson assessed<sup>33</sup> that, with the proposed monitoring and controls, the dust emissions as a result of this application are unlikely to contribute to an exceedance of the ambient air quality standard for PM<sub>10</sub>. Mr Harrison advised that the

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<sup>30</sup> Section 42A Report from Ms Chapman, para 30-31

<sup>31</sup> Land where an activity on the Hazardous Activities and Industries List (HAIL) is, has been, or is more likely than not to have been, carried out

<sup>32</sup> Section 42A Report from Mr Harrison, para 27-29

<sup>33</sup> Section 42A Technical Report from Ms Simpson, para 5.58, 5.61

NESAQ regulations do not, therefore, need to be considered further. We accept his conclusion on this matter. For clarity, we note that Regulation 17 of the NESAQ does not apply to this application because the proposed discharge would not occur in a gazetted airshed where measured PM<sub>10</sub> concentrations exceed the ambient air quality standard.

#### *Davidson Decision*

- 114 In his opening, Mr Chapman had addressed us<sup>34</sup> regarding the implications of the *Davidson*<sup>35</sup> decision submitting that, at the moment with the High Court's decision being the most recent, we should not consider Part 2 matters as a separate, final exercise in our assessment of the application and submissions. He submitted that we can assume the objectives and policies of the planning documents are already imbued with Part 2 considerations; and that, similarly, the district and regional plans are imbued with the CRPS objectives and policies.
- 115 Mr Bligh gave evidence<sup>36</sup> that the key relevant statutory planning documents (the CRPS, CARP and CDP) have all been recently reviewed in full, are now operative, and were prepared in accordance with the requirements of the RMA. He did not consider there to be any invalidity, uncertainty or incompleteness in these documents that would suggest we should have further recourse to Part 2 matters. Mr Bligh's evidence was that any further consideration of Part 2 would be unnecessary. Ms Chapman's opinion<sup>37</sup>, in relation to the CDP, was the same as Mr Bligh.
- 116 Ms Chapman, in her s42A Report<sup>38</sup>, also gave her opinion that, although the CRPS is of relevance, the CDP has been recently reviewed in full such that the provisions of the CDP give effect to the objectives and policies of the CRPS. It was her opinion that no further direct assessment against the CRPS was necessary. Mr Bligh did include an analysis for the application in terms of the objectives and policies of the CRPS. Mr Harrison did not address implications of the *Davidson* decision for either Part 2 matters or the CRPS.
- 117 We accept Mr Chapman's submissions and the evidence of the two planning witnesses that, given the recent full reviews of the key statutory planning documents (which address the relevant matters before us), there is no need for us to have further direct recourse to Part 2 matters, nor the objectives and policies of the CRPS, in our assessment of this application. Accordingly, we have not done so.

#### *Permitted Baseline*

- 118 Mr Chapman submitted<sup>39</sup> that this application is an appropriate situation for us to exercise

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<sup>34</sup> Opening legal submissions for the applicant from Mr Chapman, para 27-30

<sup>35</sup> *RJ Davidson Family Trust v Marlborough District Council* [2017] NZHC 52

<sup>36</sup> Evidence of Mr Bligh, para 4.4

<sup>37</sup> Section 42A Report from Ms Chapman, para 199

<sup>38</sup> Section 42A Report from Ms Chapman, para 32

<sup>39</sup> Opening legal submissions for the applicant from Mr Chapman, para 39-41

the discretion available under s104(2) of the RMA (referred to as the “permitted baseline”) to disregard adverse effects of the proposal on the environment where the CDP permits activities with those effects. He gave the example of dust emissions from permitted farming activities, such as from ploughing a field. Road Metals’ planning witness, Mr Bligh, did not address us on applying the permitted baseline for our assessment of this application. Mr Chilton’s evidence<sup>40</sup> briefly noted that rural activities, such as cultivation, baling of hay and shifting of livestock, can give rise to significant dust emissions on occasions. However, Mr Chilton did not provide any direct comparison between the effects of dust emissions from permitted farming activities and effects of dust emissions from the proposed quarrying activity.

119 Ms Chapman addressed the application of the “permitted baseline” in her s42A Report<sup>41</sup>. In relation to the quarrying activity in the RUF Zone, she set out the range of permitted activities that might be considered, including limitations on the scale of permitted earthworks and the number of vehicle movements generated per day. Her evidence was that none of the activities permitted in the RUF Zone would be sufficiently similar in character, scale or effects to the proposed quarry to warrant applying a permitted baseline in this instance. Having considered her evidence, and the evidence before us regarding the scale, character and effects of the proposed quarrying activity, we agree with Ms Chapman and have not exercised the discretion available to us under s104(2).

120 With respect to the aggregates-processing activity in the RQ Zone, Ms Chapman addressed the quarrying and ancillary aggregates-processing activities permitted in this zone. She noted that the continued, permitted use of the Road Metals’ RQ land is dependent on there being available gravel to be extracted from that site. We note the applicant’s evidence that there is a small amount of gravel remaining at the Yaldhurst Quarry site, but that there are practical and commercial constraints to extracting it at the moment. Ms Chapman’s opinion was that, if the remaining gravel is eventually extracted and processed on the site, the activity would be in the future and of short duration. She did not consider that ongoing quarrying activity on the RQ zoned land would form part of the relevant permitted baseline in the medium or long term, and that there is limited benefit from applying a permitted baseline comparison for activities proposed on this part of the application site. Having considered her evidence, and the limited availability of gravel for permitted quarrying or processing activities at the Yaldhurst Quarry site (particularly in the short-medium term), we do not consider this is an appropriate situation for us to exercise the discretion available to us under s104(2).

### Issues in contention

121 The principal issues arising from Road Metals’ application are essentially related to the

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<sup>40</sup> Evidence of Mr Chilton, para 45

<sup>41</sup> Section 42A report from Ms Chapman, para 50-55

effects of the activities proposed. A number of effects were raised, with the principal contentions being related to the discharge to air and associated amenity and health concerns; noise, landscape character, visual amenity, traffic and access effects; and impacts on groundwater quality.

- 122 Central to consideration of effects of the activities are the objectives and policies of the relevant plans; and the range of activities and level of amenity they provide for in this location. These were matters of contention between the parties before us.

### **Actual and potential effects on the environment**

- 123 In carrying out our assessment of actual and potential effects, we have not had regard to any effects on those who have given written approval.

#### *The Receiving / Existing Environment*

- 124 Our assessment of effects from the proposed activities requires us to understand the nature of the receiving environment for those effects. In particular, this is important for our consideration of dust, noise and visual effects for the amenity values of this area; and the submitters' concerns that their rural lifestyle is being slowly eroded by quarrying activities expanding in the area.
- 125 We have set out our understanding of this for each of the relevant effects under the following evaluation sections. However, prior to considering each specific effect, we have set out here our general understanding of the existing environment of this rural area.
- 126 The definition of "amenity values" in the RMA refers to the natural or physical qualities and characteristics of an area that contribute to people's appreciation of its "pleasantness" and "aesthetic coherence". It was Mr Bligh's evidence<sup>42</sup> that amenity values do not attach to a particular house or part of a street, but rather to the locality generally. In answer to our questions, Mr Bligh accepted that we should not ignore effects on amenity values at individual properties. However, we understood him to be saying that the appropriate lens, through which we should consider what amenity values are anticipated, is at a wider scale than an individual property. We agree that we need to consider amenity values at both scales – at an area-scale for determining existing and anticipated amenity values for this rural area generally; and at the property-scale for determining the nature and scale of potential adverse effects for individual properties.
- 127 Ms Chapman<sup>43</sup> referred us to Policy 17.2.2.3<sup>44</sup> which sets out the elements that contribute to rural amenity values. This policy states that rural amenity values vary across the district resulting from the combination of natural and physical resources present, including the location and extent of established and permitted activities. The policy identifies that rural

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<sup>42</sup> Evidence of Mr Bligh, para 6.23

<sup>43</sup> Section 42A Report from Ms Chapman, para 117-120 & Appendix 6

<sup>44</sup> Chapter 17 Rural – the RUF and RQ Zones sit within this Chapter of the CDP

productive activities (which include quarrying) can produce noise, odour, dust and traffic that may be noticeable to residents in rural areas, consistent with a rural working environment. Ms Chapman<sup>45</sup> also stated that the rural objective and other rural policies seek to support and enable the ability to carry out rural productive activities in rural zones, as long as the adverse effects on amenity values are adequately avoided, remedied or mitigated. In Ms Chapman's opinion<sup>46</sup>, the CDP's rural objective and policies emphasise that the amenity of the rural environment should be considered to include the effects of the operation of productive rural activities, which can include odour, dust, noise and traffic, albeit that adverse effects on amenity values are to be avoided, remedied or mitigated<sup>47</sup> to a level consistent with the outcomes sought by the CDP. Mr Bligh's evidence was similar<sup>48</sup> and he generally agreed with Ms Chapman's assessment of the CDP provisions<sup>49</sup>, which we have adopted.

128 Mr Chapman<sup>50</sup> submitted that we should consider all existing activities in the environs as elements that influence the baseline rural amenity of the wider area encompassing the proposed quarrying activity, haul roads and processing plant. Mr Compton-Moen's evidence<sup>51</sup> referred us to the existing quarries in the RQ Zone; the prisons (to the south of SH73); and the Ruapuna speedway (further south on Hasketts Road). In his opinion, the proximity of these institutions and the busy nature of SH73 result in the area having a mix of activities, of which rural is one, reflecting a receiving environment that is on the edge of a major urban settlement.

129 We agree that this wider locality is characterised by a mix of activities, including open farmed paddocks; large institutional facilities; quarrying, clean fill and associated rural-industrial activity; and a busy state highway. All of these activities contribute to its low level of amenity values<sup>52</sup>, with its associated traffic, visual effects, noise and dust. However, from our site visit observations, we consider this wider area and its amenity values are relevant for the area influenced by the effects of gravel haulage and the aggregates-processing activity. Whereas, the site of the proposed quarrying activity is more focused on the Buchanans Road / Old West Coast Road area and its particular amenity values.

130 For the existing environment in the Buchanans Road / Old West Coast Road area (the receiving environment for the proposed quarrying activity), we have taken the range of established and permitted activities to include the rural-residential properties (with their small-scale productive rural and light commercial activities), some limited extensive farming, the quarrying and associated processing activities (on Old West Coast Road), a trucking

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<sup>45</sup> Section 42A Report from Ms Chapman, para 119 & Appendix 6

<sup>46</sup> Section 42A Report from Ms Chapman, para 120 & Appendix 6

<sup>47</sup> CDP Policy 17.2.2.2

<sup>48</sup> Evidence of Mr Bligh, para 6.33-6.34

<sup>49</sup> Evidence of Mr Bligh, para 5.12-5.14

<sup>50</sup> Legal Submissions from Mr Chapman, para 45

<sup>51</sup> Evidence of Mr Compton-Moen, para 9.2

<sup>52</sup> Section 42A Report from Ms Chapman, Appendix 6

yard, cemetery and scout camp, as well as the levels of traffic using these roads.

131 Whilst there is a mix of activities, the area to the east of the intersection of Buchanans and Old West Coast Roads is dominated by small rural-residential properties, with well-established shelter belts, houses (and surrounding gardens) and ancillary buildings<sup>53</sup>, as well as the traffic activity on the roads. These activities establish this area's amenity values (and other permitted activities are likely to be similar in character and small-scale<sup>54</sup>). To the west of the intersection, from our site visit observations, the area is more influenced by the permitted quarrying and aggregate-processing activities, with associated traffic, dust and noise contributing to its amenity values.

132 It was suggested to us<sup>55</sup> that, as a productive rural area, we should consider the effects of agricultural activities (such as ploughing, hay baling, moving stock, drainage and irrigation construction), as well as dust from the Waimakariri River, as contributing to the existing amenity values. However, the only large farming property in the locality appears to us to be the extensively grazed, CRC-owned, farm to the north of the rural-residential properties on Old West Coast Road. We consider the likelihood is low of regular agricultural activities on this land generating dust, noise and traffic effects that would noticeably influence the area's amenity values. Similarly, the Waimakariri River is 6km to the north and we did not receive any evidence that dust from that riverbed noticeably affects this area's amenity values.

*Effects from Discharges to Air (including associated Amenity and Health Effects)*

133 We received a substantial quantity of evidence from the parties regarding the potential effects of PM<sub>10</sub> (inhalable particles having a diameter of less than 10 microns) and RCS. Air quality evidence for the applicant was provided by Mr Chilton, who had been involved in preparing the AEE and the Dust Management Plan. His evidence was reviewed by Ms Simpson for the CRC. Dr Duncan provided evidence on this matter on behalf of Mrs and Mr McDonagh. There were several areas of disagreement between Mr Chilton and Dr Duncan, particularly in relation to the effects of RCS in the context of the proposed mitigation, that were addressed in Mr Chilton's rebuttal evidence.

134 With regard to the existing levels of dust experienced in the local area, Mr Chilton<sup>56</sup> stated that the most significant existing background dust source is the adjacent quarry zone to the west and south of the RM4 site. He noted that collectively the quarry zone covers a large area in the order of 220 hectares of exposed land used for quarry purposes and related activities<sup>57</sup>. Mr Chilton also stated that rural activities (including cultivation, baling of hay, shifting of livestock) can give rise to significant dust emissions on occasion. He observed

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<sup>53</sup> Evidence of Mr Compton-Moen, para 9.1

<sup>54</sup> Section 42A Report from Ms Chapman, para 51-52

<sup>55</sup> For example, Evidence of Mr Chilton, para 45; and Section 42A Report from Ms Chapman, para 14

<sup>56</sup> Evidence of Mr Chilton, para 42

<sup>57</sup> Evidence of Mr Chilton, para 44



that the Waimakariri River is “relatively close” to the site and could be a significant natural source of dust during very strong, dry north-westerly winds<sup>58</sup>.

- 135 The evidence from submitters regarding existing dust effects experienced on their properties suggested differing degrees of effect dependent on location. Mr Morris and Ms van Gosliga at 73 Old West Coast Road stated that they experienced no excess dust on their property at present. Mr and Mrs Martini indicated that they experience low background levels of dust at their 76 Old West Coast Road property. These submitters live to the northeast of the site and are well removed from the existing quarries. In contrast, Ms McDonagh of 175 Old West Coast Road is situated relatively nearby the existing Road Metals’ quarry and the Winstone Aggregates quarry and stated that she experiences significant and very noticeable existing dust effects. Mr Prain notices significant dust deposition on vehicles at 132 Old West Coast Road. Mr Vallance stated that he experiences more dust now than four years ago at his 105 Old West Coast Road property.
- 136 Based on the evidence from the applicant and submitters and also observations during our site visit, we find that the existing background concentrations of dust at properties to the northeast of the site (including the closest dwelling that has not provided written approval) are not likely to be high. As we discussed earlier, dust from agricultural activities and the Waimakariri River some 6km distant is not expected to contribute significantly to existing dust levels at these properties. However, we accept that properties further west that are closer to the existing quarries, notably the McDonagh property, currently experience greater existing dust concentrations and a consequent lower level of amenity.
- 137 The potential effects of RCS emissions from quarrying activities is an issue that has become prominent only in recent times, particularly in the local context. We have given considerable attention to our evaluation of this issue. The proposed activity does not include crushing and screening of aggregate within the RM4 site. Mr Chilton’s evidence<sup>59</sup> confirmed that these are the primary activities expected to generate RCS emissions from quarries. He stated that the Road Metals’ crushing plant in the existing quarry is located at least 800m from neighbouring dwellings. Mr Chilton also stated that no clean-fill material will be brought onto the site other than to achieve topsoil rehabilitation depth requirements<sup>60</sup>. Ms Simpson’s supplementary report, attached to Mr Harrison’s Section 42A Report, stated that she agrees with the conclusions of the applicant’s assessment of effects that the absence of crushing/screening and stockpiling of fine material, typically sources of fine particulate matter at quarry sites, means that emissions of RCS from the site will be relatively low<sup>61</sup>.
- 138 The applicant accepted that only limited RCS monitoring data are available that are relevant

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<sup>58</sup> Evidence of Mr Chilton, para 45

<sup>59</sup> Evidence of Mr Chilton, para 23.1.

<sup>60</sup> Evidence of Mr Chilton, para 23.2.

<sup>61</sup> Supplementary Report to Section 42A Report of Mr Harrison, prepared by J Simpson and J Pene, para 5.68.

to this application. Mr Chilton's evidence<sup>62</sup> summarised the results of a CRC monitoring programme at five sites in the immediate vicinity of the Yaldhurst Quarry Zone undertaken between 23 December 2015 and 26 April 2016. He noted that the study contained flaws in terms of RCS monitoring, but that the RCS results were all below the limit of detection (LOD) for the monitoring and analysis methods used. He also referred to a study for the New Zealand Transport Agency (NZTA) conducted by Golder Associates<sup>63</sup> that assessed the impacts of exposure to dust from unsealed roads. We have been provided with a copy of the NZTA study by the applicant and note that it includes analysis of four samples, all taken in summer at locations 5 metres from an unsealed roadside, and that the sampling time at each site was between 5 and 21 hours<sup>64</sup>. Ms Simpson stated<sup>65</sup> that the measured concentrations of RCS were all below the limits of detection for the study, between 2µg/m<sup>3</sup> and 9µg/m<sup>3</sup>. However, she noted<sup>66</sup> that both the CRC and NZTA studies have significant limitations because of the small number of samples taken and, in the case of the CRC study, the inadequacy of the LOD in comparison to the recommended assessment criterion.

139 Mr Chilton's evidence discussed in some detail<sup>67</sup> the preliminary results of the current monitoring programme being conducted for the CRC (as the lead agency), CCC, CDHB and Worksafe NZ, in and around the Yaldhurst RQ Zone. Monitoring began at the 6 sites in December 2017 and the details of the programme are provided in the interim report by Mote Ltd and Emission Impossible Ltd<sup>68</sup>. We were provided with a copy of that report. The study involves monitoring of both PM<sub>10</sub> and RCS, but unfortunately RCS results are not available at this time. As we explained earlier, we questioned Mr Firth on this matter and were informed that, while RCS monitoring results for one month are available now, the CRC is unwilling to release the data until at least three months of RCS monitoring has been completed and analysed. He explained that the Council is concerned that the release of one month's data could cause misinterpretation of the results, given that several months of data are required to indicate the degree of compliance with guidelines based on annual averaging.

140 Mr Firth indicated that the initial RCS monitoring results for the first three months of the current Yaldhurst monitoring programme are likely to be available in late June or early July 2018. The uncertainty brought about by this situation was a matter that generated considerable discussion by the parties at the hearing. Mr Chapman in his closing remarks provided us with some options in this regard and the applicant also attempted to address this issue in revised conditions of consent provided to us. We return to this matter later in

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<sup>62</sup> Evidence of Mr Chilton, para 69-73.

<sup>63</sup> Impacts of exposure to dust from unsealed roads, April 2017. NZ Transport Agency Research Report 590.

<sup>64</sup> Ibid, pages 54-55.

<sup>65</sup> Supplementary Report to Section 42A Report of Mr Harrison, prepared by J Simpson and J Pene, para 5.63

<sup>66</sup> Ibid, para 5.64

<sup>67</sup> Evidence of Mr Chilton, para 31-39.

<sup>68</sup> Mote Ltd and Emission Impossible Ltd, 2018. Yaldhurst Air Quality Monitoring 22 December 2017-21 January 2018. Report prepared for Environment Canterbury, 9 February 2018.

our evaluation.

- 141 Dr Duncan's evidence contained a large amount of material concerning the potential effects of RCS, and he identified several areas of dispute with the conclusions of the air quality experts for the applicant (Mr Chilton) and the CRC (Ms Simpson). Given the importance of this issue to the determination of the application, we have carefully examined the information provided by Dr Duncan, including references where they were included. Dr Duncan provided us with a lengthy oral presentation and we had the opportunity to ask him a substantial number of questions to test his evidence.
- 142 Dr Duncan's considerable qualifications were detailed in his evidence<sup>69</sup>. However, we observe that he has limited experience in the field of air quality science. This lack of experience became apparent in his misinterpretation of some of the material he presented and in some of his responses to our questioning. Mr Chilton's rebuttal evidence identified some of these areas of misinterpretation<sup>70</sup>, namely in relation to evaluation of the K2 Environmental dust monitoring results from November 2016, misunderstanding of material in referenced documents, and inappropriate use of air quality indices. We accept Mr Chilton's comments in this regard and also note the lack of supporting references provided to some of the conclusions reached in Dr Duncan's evidence.
- 143 We find that, at times, Dr Duncan's evidence strayed outside his stated area of expertise. He discussed questions of criminal law using emotive language<sup>71</sup>. Further, in response to our questions he stated that there is a causal link between quarry RCS emissions and reported adverse health effects experienced by residents living near Yaldhurst quarries. A comprehensive analysis by a suitably qualified medical health expert with experience in epidemiology would be required to establish such a link, taking into account the various factors influencing affected individuals and robust air quality monitoring data for the contaminants of concern.
- 144 We are very mindful of the evidence presented by submitters regarding adverse health effects experienced at locations in close proximity to existing Yaldhurst quarries. Mrs McDonagh provided letters from general practitioners and a respiratory physician in relation to her condition and that of persons residing at 190 and 202 Old West Coast Road. We do not question the evidence of submitters regarding the health effects they have experienced. However, bearing in mind the limited air quality monitoring information available for these property locations at this time, we do not consider that we have been provided with sufficient evidence to conclude that PM<sub>10</sub> and RCS emissions from existing quarries are the cause of the reported effects. Furthermore, we note that contaminant concentrations experienced at these properties due to discharges from existing quarries may differ substantially from

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<sup>69</sup> Evidence of Dr Duncan, para 1-2.

<sup>70</sup> Rebuttal evidence of Mr Chilton, para 6, 8-12, 15-20

<sup>71</sup> Evidence of Dr Duncan, para 52-61.

concentrations experienced at the most affected properties near the RM4 site. That difference is due to the specific mitigation measures proposed, the limited nature of the proposed quarrying activity and the location of receptors in relation to prevailing wind conditions.

145 We do not dismiss all aspects of Dr Duncan's evidence and we recognise the substantial effort he has made to provide us with detailed information on the effects of RCS. However, given the significant areas of dispute between the experts, we are required to weigh the evidence in order to reach our conclusions regarding the effects of RCS. In this regard we have applied greater weight to the conclusions of Mr Chilton and, in particular, the evidence of Ms Simpson who was engaged as an independent air quality expert by the CRC. The submitters should be assured that we have carefully examined all the evidence, including published references and reports provided to us, in reaching our conclusion on this issue.

146 One area of agreement amongst the experts is that the Californian Office of Environmental Health Hazard Assessment (OEHHA) chronic reference exposure level for RCS of  $3\mu\text{g}/\text{m}^3$  (annual average) is an appropriate health effects guideline. Because the Californian guideline is based on an annual average, a substantial period of monitoring is required to assess measured concentrations in relation to the guideline. Recognising this issue in relation to the state of progress of the current Yaldhurst RCS monitoring programme, the applicant has proposed new conditions for the CRC consent (4 May Conditions). These proposed conditions would restrict commencement of consent until the Yaldhurst RCS Monitoring Study results are received and indicate that long term RCS exposure is likely to be at or below the Californian guideline of  $3\mu\text{g}/\text{m}^3$  (annual average). In the event that the study results are insufficient, incomplete or unreliable, or that the results indicate potential exceedance of the Californian guideline, the proposed conditions allow commencement of consent only where an independent review is undertaken that can recommend additional dust management controls.

147 We find that the overall approach now proposed by the applicant, whereby commencement of consent is subject to consideration of the first three months of monitoring results for the Yaldhurst RCS study, is appropriate and would provide further certainty regarding the health effects of RCS. However, we have amended these conditions as follows. Firstly, we have decided to include a new Condition 5 (to the 4 May Conditions – CRC) that specifically states that consent may not commence prior to the receipt of the three-month results and analysis for the Yaldhurst RCS study. Secondly, we find that Condition 6 should state that consent cannot commence until results indicate compliance with an annual average of  $3\mu\text{g}/\text{m}^3$  at one of the two RCS monitoring sites AND as an average across the two monitoring sites. This change ensures that consent could not commence as proposed if the monitoring results indicated compliance with the guideline at one site but relatively high RCS concentrations at the other site. Finally, we find that Condition 7 should be strengthened to require the independent review to recommend measures anticipated to achieve RCS concentrations at

dwelling beyond the RM4 site, not subject to written approval, of not more than 3 µg/m<sup>3</sup> (annual average) and to require that an updated DMP be completed and submitted to the CRC for certification.

148 The experts and submitters discussed in some detail the application of appropriate setback distances or buffer distances from quarrying activities to sensitive receptors. In her report Ms Simpson<sup>72</sup> analysed the EPA Victoria separation distance guidance<sup>73</sup>. She explained that for rural properties the Victoria Guideline recommends separation distances from the quarry activity boundary to a sensitive land use area (similar to the notional boundary of a dwelling) of 250m, and 500m for quarrying with RCS. She stated<sup>74</sup> that taking into account the nature of the proposed quarrying activities and their potential to generate dust (including RCS), she considered that 250m separation is a reasonable basis for identifying sensitive activities for more detailed assessment. Ms Simpson explained her understanding that a site-specific assessment would be required where a proposal does not meet the separation distance guidance. Therefore, the Victoria Guideline anticipates situations where the separation distance guidelines cannot be met. We accept her conclusions in this regard and agree that the Victoria Guideline does not set a mandatory separation distance in this context.

149 We accept the evidence of Mr Chilton and Ms Simpson that the site-specific mitigation measures now proposed in this case are comprehensive. The suite of mitigation measures proposed by the applicant and incorporated in its suggested conditions of consent (4 May Conditions) now include:

- (a) Maintaining a separation distance of at least 100m from quarrying to the notional boundary of the nearest dwelling (622 Buchanans Road) unless written approval is obtained;
- (b) Ceasing quarrying activities during dry conditions when wind is blowing from the west to west-southwest (towards the nearest dwellings) at greater than 7m/s (hourly average);
- (c) Continuous monitoring of suspended particulate matter on top of one of the bunds along the road frontage of either 581 or 619 Buchanans Road, so that monitoring is upwind of active quarrying activities relative to the closest off-site residences to the northeast, with trigger levels set that result in the site manager being alerted to control dust emissions or cease quarrying activities;
- (d) Limiting the combined open area for excavation and land being rehabilitated (prior to the establishment of vegetation cover) to not more than 4 hectares on

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<sup>72</sup> Supplementary report to Section 42A Report of Mr Harrison, prepared by J Simpson and J Pene, para 5.11-5.23

<sup>73</sup> Environmental Protection Authority Victoria. Recommended separation distances for industrial residual air emissions. Publication 1518, March 2013.

<sup>74</sup> Supplementary report to Section 42A Report of Mr Harrison, prepared by J Simpson and J Pene, para 5.18

the RM4 site;

- (e) Using only one loader and one digger with up to two dump trucks at the same time;
- (f) Undertaking no crushing, processing or stockpiling of aggregate on the RM4 site;
- (g) Applying water as required for dust control, with a water cart available for use at all times;
- (h) Re-grassing of bare soil areas as soon as practicable;
- (i) Maintaining a pea gravel cover on unsealed haul roads; and
- (j) Restricting the speed of vehicles on internal haul roads within the RM4 site to not more than 15km/hr.

150 Following presentation of evidence from the experts, we questioned Ms Simpson regarding the adequacy of the mitigation and monitoring measures proposed by the applicant. Specifically, we asked her to confirm if, in light of the proposed mitigation and the relatively small separation distance of 100m to the notional boundary of the dwelling at 622 Buchanans Road, her opinion remained that the discharges of RCS and PM<sub>10</sub> from the site would be unlikely to contribute to exceedance of the relevant air quality guidelines and standards. She confirmed in the affirmative, noting corroborating information that included available particulate matter monitoring data relevant to quarry sites, the nature of the activity (that excludes aggregate processing on the RM4 site), and the location of the most affected receptors relative to prevailing wind conditions. Ms Simpson observed that the continuous dust monitoring trigger levels proposed are set at protective levels that could be triggered in the order of two to three times per month, requiring action by the site manager.

151 We accept the conclusions of Ms Simpson in relation to the potential health effects of PM<sub>10</sub> and RCS. Based on evaluation of all the air quality evidence and having regard to the mitigation now proposed, we find that the proposed discharge is unlikely to cause adverse health effects.

152 Several submitters raised concerns regarding the effects of nuisance dust, including accumulation on cars and window sills and general soiling of surfaces. Ms Simpson addressed this issue in some detail in her report<sup>75</sup> with analysis of effects at specific receptors. She considered that nuisance effects at neighbouring dwellings would be less than minor if the dust suppression measures outlined in the DMP are rigorously implemented. We adopt her conclusion in relation to dust nuisance effects. We find that objectionable or offensive effects, as well as noxious or dangerous effects, would be avoided. Based on the evidence we conclude that significant soiling or corrosion effects are

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<sup>75</sup> Supplementary report to Section 42A Report of Mr Harrison, prepared by J Simpson and J Pene, para 5.24-5.51

unlikely.

- 153 The formation of the bunds close to neighbouring properties, as well as soil stripping and restoration, has potential to cause nuisance effects of relatively brief duration. The applicant proposed to carry out such work during favourable weather conditions and at times of least vulnerability to neighbours. We have decided to specifically include that requirement with respect to bund formation as part of the mitigation measures in Condition 23(e). We have also determined to include a specific requirement to maintain exposed bare soil in a damp condition while bunds are being formed as Condition 23(f) (4 May Conditions - CRC). We are satisfied that nuisance dust effects associated with such earthwork activities can be adequately controlled if the proposed mitigation is implemented.
- 154 The proposed activity would extend the life of the aggregate processing plant at the main Road Metals' quarry site. In response to our questions, Mr Chilton stated that the Road Metals' crushing and screening plants use water sprays to mitigate dust emissions and are located at least 800 metres from the nearest dwelling. He considered that any adverse effects of dust discharged from this source would be minor, given the separation from sensitive receptors. We accept that conclusion. The proposed conditions of the CCC land use consent require the continuation of existing dust mitigation measures at the processing plant. We are satisfied that compliance with those conditions would maintain existing amenity values.
- 155 Ms Simpson concluded<sup>76</sup> that, given the local predominant wind directions, PM<sub>10</sub> and RCS emissions from the site are unlikely to have cumulative effects with discharges from other quarrying activities. She found it unlikely that discharges from the site would contribute to exceedance of the ambient air quality guidelines and standards for PM<sub>10</sub> or the assessment criterion for RCS. Mr Chilton concluded<sup>77</sup> that overall dust effects will be less than minor, provided the proposed monitoring and mitigation measures are employed diligently. Based on analysis of the air quality evidence and bearing in mind the location of sensitive receptors in relation to existing Yaldhurst quarries and prevailing wind conditions, we find that cumulative adverse effects of dust are likely to be no more than minor.
- 156 Based on the totality of evidence presented, we find that the degree of dust likely to be experienced from the proposed activities will be consistent with what can be anticipated in this rural environment. We conclude that ambient air quality and local rural amenity values will be maintained, in terms of the levels of dust nuisance that can be anticipated in this area, being a small-scale rural working environment that is in relatively close proximity to some large quarries and aggregate processing plants. We find that the comprehensive nature of the mitigation and monitoring proposed to address uncertainty relating to limited current RCS monitoring data would also result in effective dust control, protection of health and

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<sup>76</sup> Supplementary report to Section 42A Report of Mr Harrison, prepared by J Simpson and J Pene, para 8.1(g)

<sup>77</sup> Evidence of Mr Chilton, para 86.9.

maintenance of amenity values.

- 157 In his closing remarks Mr Chapman addressed the issue of ongoing uncertainty relating to the effects of RCS emissions. He submitted that the RMA is not a “no risk” statute and that uncertainty is commonly encountered in consent applications. He also noted that certainty is required by the applicant in terms of decision making. To address this issue Mr Chapman advocated a “belt and braces” approach and we consider that such an approach is reflected in the conditions now proposed (CRC 4 May Conditions). In particular, delayed commencement of the consented activity and potential for review based on the interim (three month) results of the Yaldhurst RCS Study provides comfort that the activity would not proceed in the proposed form if the RCS monitoring results are high. We are satisfied that such an outcome is not expected based on the conclusions of both Mr Chilton and Ms Simpson after analysing existing relevant RCS and PM<sub>10</sub> monitoring information.

#### *Noise Effects*

- 158 The applicant’s evidence on this issue was provided by Mr Walton, who had prepared the noise assessment report attached to the AEE and further information following a s92 request. That was reviewed by Mr Reeve and Mr Trevathan, for CCC. There was a considerable degree of agreement between Mr Walton, Mr Reeve and Mr Trevathan, including general agreement on proposed conditions of consent.
- 159 With regard to the existing noise environment in the Buchanans Road / Old West Coast Road area, Mr Walton<sup>78</sup> had measured ambient noise levels on the roadside outside 622 and 659 Buchanans Road (being the closest houses to the proposed quarry) and at the Yaldhurst Cemetery. His initial noise survey had been undertaken mid-afternoon, however, prior to the hearing he had taken further measurements in the early morning. It was his evidence<sup>79</sup> that the daytime noise environment at houses adjacent to the application site is typified by road traffic, aircraft and animals, with existing noise levels at houses being generally determined by their proximity to local roads. He summarised the results of his measurements as the daytime ambient noise environment being between 50 and 55dB LA<sub>eq</sub> (15 min) for houses or areas set back from roads; and 55dB LA<sub>eq</sub> (15 min) or greater for houses close to roads.
- 160 Mr Reeve agreed that the noise measurements undertaken by Mr Walton appear representative of typical noise levels that may be experienced at the houses in this vicinity. He concluded that the measurements suggest the area is not a particularly high amenity area during the daytime period (with respect to its noise levels)<sup>80</sup>.
- 161 Some of the submitters also gave us their views on existing noise levels. Mr Vallance<sup>81</sup> said

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<sup>78</sup> AEE, Appendix D, Acoustic Assessment by Marshall Day Acoustics

<sup>79</sup> Evidence of Mr Walton, para 28-30

<sup>80</sup> Section 42A Technical Report from Mr Reeve, page 1-2

<sup>81</sup> 105 West Coast Road



he could hear a crusher start up at 7am, and was aware of noise from trucks travelling to and from the quarries along Old West Coast Road. Mr Crews<sup>82</sup> told us that truck noise has increased significantly since the Canterbury earthquakes. These comments appear to support the noise experts' evidence that traffic on the local roads dominates the existing noise environment. Mr and Mrs Martini's<sup>83</sup> evidence was that they had no ambient noise issues at the moment, with their property being very tranquil especially in the evenings and weekends. We noted on our site visit that Mr and Mrs Martini's house is set back from Old West Coast Road and is located further from existing quarrying activity than those of Mr Crews and Mr Vallance. Mrs McDonagh<sup>84</sup>, whose house is located closer to existing quarrying and processing activities, referred to the noise from loaders operating and gravel being dropped into trucks.

162 Ms Chapman's s42A Report assisted us with the noise environment anticipated by the CDP for this area. She explained<sup>85</sup> that the CDP sets standards for acceptable daytime<sup>86</sup> noise levels, for the protection of amenity values, in different zones, being 50dB L<sub>Aeq</sub> at the notional boundary<sup>87</sup> of rural houses and 55dB L<sub>Aeq</sub> at the boundary of the quarrying site. These standards are more stringent than comparable national and international guidance<sup>88</sup>.

163 Ms Chapman referred us to Policy 17.2.2.3<sup>89</sup>. This policy identifies that rural productive activities (including quarrying) can produce noise that may be noticeable to residents in rural areas, consistent with a rural working environment; albeit that adverse noise effects on the amenity values and health of people and communities are to be managed to a level consistent with the anticipated outcomes for the receiving environment<sup>90</sup>.

164 Although the noise experts and the submitters expressed the existing noise environment differently, we find substantial agreement between them. Our own observations from our site visit (and our findings above regarding existing and anticipated amenity values) are consistent with theirs. We accept the evidence that the existing noise environment, in the vicinity of the nearest houses to the proposed quarry site, is typified by noise from road traffic, aircraft, animals and other small-scale farming activities. Where houses are close to the roads, traffic noise dominates; with houses set back further from roads having quieter surrounds. At the rear of the McDonagh property, closer to the existing quarries and processing plants, background noise from trucks and plant was noticeable to us during our

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<sup>82</sup> 120 Old West Coast Road

<sup>83</sup> 76 Old West Coast Road

<sup>84</sup> 175 Old West Coast Road

<sup>85</sup> Section 42A Report from Ms Chapman, para 59 & Appendix 6

<sup>86</sup> No night-time quarrying operations are proposed

<sup>87</sup> "Notional boundary" is defined in the CDP to be a line 20 metres from any wall of a residential unit; ..., or the legal boundary where this is closer to the dwelling.

<sup>88</sup> AEE, Appendix D, Acoustic Assessment by Marshall Day Acoustics; and Section 42A Technical Report from Mr Reeve, page 2

<sup>89</sup> Section 42A Report from Ms Chapman, para 118 & Appendix 6

<sup>90</sup> CDP Objective 6.1.2.1

site visit. Existing noise levels, predominantly as a result of local road traffic, exceed the acceptable noise standards set in the CDP, consistent with Mr Reeve's evidence<sup>91</sup> that this is not a particularly high amenity area during the daytime period, however, neither is it particularly noisy.

165 Mr Walton had predicted noise levels from the proposed quarrying and haulage activities based on measurements of Road Metals' existing operation in 2014<sup>92</sup>. Mr Reeve agreed that the measurements appeared representative of typical operational noise from the quarry<sup>93</sup>. Mr Walton's evidence<sup>94</sup> was that noise from extraction and haulage activities will remain comfortably below the CDP 50dB L<sub>Aeq</sub> noise limit for all receivers beyond the site boundary bunds (at houses and the cemetery), and typically well below that level in the range of 40 to 45 dB L<sub>Aeq</sub>. Mr Reeve<sup>95</sup> agreed. In addition, Mr Walton stated<sup>96</sup> that noise levels will generally be below the existing levels of ambient traffic-related noise. Both Mr Walton<sup>97</sup> and Mr Reeve<sup>98</sup> acknowledged that noise from the quarrying activity will be audible and distinguishable at times, when quarrying is close to the nearest houses, and during quiet traffic periods. However, they also agreed that noise effects will be minimal at all existing houses, and that compliance with the CDP noise limits will be appropriate to ensure noise effects are acceptable.

166 Several submitters raised general concerns regarding increases in noise levels affecting the enjoyment of their properties. Mr Walton addressed the submission from Mr and Mrs Vallance<sup>99</sup> (one of the closest houses to the proposed quarrying) stating<sup>100</sup> that, although there will be increased noise from the quarrying, at the Vallance's house this will only be just noticeable and typically only audible during lulls in traffic. In answer to our questions, Mr Walton stated that the increase in noise levels (L<sub>Aeq</sub>) as a result of the quarrying activity would not be perceptible to residents as it would be masked by the ambient noise. The greatest difference in noise character between the quarrying noise and the ambient traffic noise would be the noise from gravel tipped into trucks, which Mr Walton advised had been taken into account and included in the noise predictions. Mr Trevathan agreed with Mr Walton in answer to our questions, stating that whilst the quarry noise would be audible at times at the nearest houses, the overall the change to amenity values would be insignificant.

167 Mr Trevathan responded to a matter raised by Mr Vallance regarding the reflection of traffic noise across Buchanans Road from the proposed bunds. Mr Trevathan was confident that

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<sup>91</sup> Section 42A Technical Report from Mr Reeve, page 2

<sup>92</sup> Evidence of Mr Walton, para 35

<sup>93</sup> Section 42A Technical Report from Mr Reeve, page 2

<sup>94</sup> Evidence of Mr Walton, para 36-37

<sup>95</sup> Section 42A Technical Report from Mr Reeve, page 2

<sup>96</sup> Evidence of Mr Walton, para 14, 53.2 & 64

<sup>97</sup> Evidence of Mr Walton, para 20

<sup>98</sup> Section 42A Technical Report from Mr Reeve, page 2 & 6

<sup>99</sup> 105 Old West Coast Road

<sup>100</sup> Evidence of Mr Walton, para 53

this would not occur.

- 168 The noise evidence was helpful to us; and we accept the agreed conclusions of the experts that noise from extraction and haulage activities will remain comfortably below the CDP daytime noise limits. We acknowledge that submitters have concern regarding increased noise levels and new noise sources coming closer to their houses. However, we accept the expert evidence that, whilst the quarry noise will be audible at times at the nearest houses, the increased noise effects will be minimal and consistent with the acceptable noise environment anticipated for this area by the CDP. Overall, we accept that any noise-related change to amenity values will be insignificant.
- 169 Several submitters questioned whether a noise control should apply at the boundary of their properties, rather than the notional boundary from the house. We consider the use of the notional boundary is reasonable given the rural zoning and that this is consistent with the approach of the CDP.
- 170 The noise experts agreed that noise from site preparation and rehabilitation activities (such as topsoil stripping and reinstatement, and the construction and deconstruction of the bunds surrounding the site) will create significantly more noticeable noise levels at the nearest houses. Both Mr Walton and Mr Reeve agreed<sup>101</sup> that noise from site preparation and rehabilitation should be considered as construction noise and, therefore, should comply with the relevant New Zealand Standard (NZ 6803). We received no evidence from Mr Walton assessing whether this is able to be practically achieved. However, Mr Reeve undertook an assessment, as part of his technical review<sup>102</sup>, against the 'short-term' ( $\leq 14$  calendar days in any one location) construction noise standards. Subject to a time restriction offered by the applicant (7.30am start time), Mr Reeve and Mr Walton concluded that construction noise, even at the closest site boundary to the nearest house, could comply with the 'short-term' duration requirements of the NZ Standard.
- 171 When questioned about effects for the nearest residents from the construction noise, Mr Walton stated that, although the noise would be significantly noticeable, it would be for a short duration (days, rather than weeks or months, at any one location), and be similar to other construction activities that may occur in a rural area. Mr Trevathan agreed, emphasising the limited duration and that it would not be an unusual type of noise.
- 172 We accept the evidence from the noise experts. We agree that, provided noise from site preparation and rehabilitation activities complies with the construction noise standards, the short-term duration of the additional noise is consistent with acceptable noise levels anticipated by the CDP.
- 173 In the 4 May Conditions, there remained disagreement between the applicant and CCC

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<sup>101</sup> AEE, Appendix D, Acoustic Assessment by Marshall Day Acoustics; and Section 42A Technical Report from Mr Reeve, page 3

<sup>102</sup> Section 42A Technical Report from Mr Reeve, page 3

regarding the timeframe over which the bund for each stage is to be constructed. Ms Chapman considered the bund construction should be completed over a 2 week period, because the construction noise effects have been assessed on the basis that the bund construction would comply with the time limit for 'short-term' activities in the NZ Standard. She considered that further assessment would be required to ascertain whether the Standard's lower noise levels for 'typical' duration construction activities would be complied with. The applicant seeks a one month time period, within which each bund stage is to be constructed, on the basis that bund construction is limited by weather conditions, is not likely to be continuous over this period, and a 2 week period is unworkable and would not be feasible. We have reviewed the relevant wording of NZS 6803: 1999. We note that the duration limits refer to construction work 'in any one location', whereas some of the bund stages extend for several hundred metres in length. It is not clear to us whether the 14 calendar days (in one location), for the 'short-term' duration noise limits, are intended to be continuous or not. However, irrespective of the number of days it takes to construct a bund in any one location, NZS 6803: 1999 would need to be complied with by way of proposed Condition 29 of the 4 May Conditions (CCC). We are satisfied this condition requires the consent holder to adhere to appropriate noise limits at the nearest dwellings. These would be lower noise levels if the Standard's time limit for 'short-term' duration is exceeded. We are satisfied this condition provides for sufficient noise management over a total construction period of one month for each bund stage. Given the limitations on bund construction during windy and dry conditions, we consider one month is a more reasonable and workable time period.

- 174 The AEE did not include an assessment of the noise generation and effects from ongoing operation of the processing plant at the Yaldhurst Quarry<sup>103</sup>. Mr Reeve undertook his own calculations<sup>104</sup> based on previous measurements taken of crushing and screening equipment operating in other similar quarries. He calculated the noise levels at the nearest houses<sup>105</sup> to the existing processing plant, acknowledging that the calculation is likely to be conservative (i.e. higher than expected). Mr Reeve concluded that the noise from the processing plant, including cumulatively with noise from the proposed quarrying, would comply with the CDP requirements at the nearest houses. We acknowledge that there will be ongoing noise effects from the processing plant as a result of its operation for a further 8 years, in association with the RM4 quarrying activity, and that the noise levels in the area surrounding the plant are expected to be the same as are currently experienced. Provided the noise generated from the processing activity continues to comply with the CDP requirements, we conclude that noise-related amenity values at the nearest houses will be

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<sup>103</sup> Mr Chapman provided us with a report from Marshall Day Acoustics, dated 25 August 1999, prepared for Road Metals to assess the noise impacts of a quarry expansion at 394 West Coast Road (the Yaldhurst Quarry site). We received no evidence as to the relevance of this report and have not referred to it further.

<sup>104</sup> Section 42A Technical Report from Mr Reeve, page 3-4

<sup>105</sup> 175 Old West Coast Road and 335 West Coast Road

maintained.

*Landscape Character / Visual Amenity*

- 175 The applicant's evidence on these issues was provided by Mr Compton-Moen, who also provided us with a helpful graphics supplement containing photographs from the surrounding area. There was no landscape/visual assessment report attached to the AEE, although a Quarry Rehabilitation Plan was provided<sup>106</sup>. The brief section of the AEE<sup>107</sup> referring to visual and landscape values was reviewed by Ms Dray, for CCC, who provided an assessment of potential effects on visual amenity and landscape character<sup>108</sup>. At the hearing, Ms Dray was able to advise us further, on the basis of the evidence provided by Mr Compton-Moen. There was a considerable degree of agreement between their expert opinions, although there remained some differences. Despite these differences of opinion, Mr Compton-Moen and Ms Dray liaised regarding the wording of possible conditions, for which we are grateful.
- 176 The principal focus for consideration of visual and landscape effects is the proposed RM4 quarrying activity. We address the proposed rehabilitation at the Yaldhurst Quarry site later in this section. We have considered "*rural character*" in terms of the "*landscape character*" of this rural area. We have considered visual factors as a significant aspect of "*amenity values*".
- 177 With regard to the existing landscape character of this rural area, Mr Compton-Moen characterised<sup>109</sup> the area to the north of RM4 (along Old West Coast and Buchanans Roads) as rural-residential, as opposed to rural, with small lots, well-established shelter-belts of mixed species, single houses and auxiliary buildings. He noted that the properties are very much compartmentalised by the plantings and fences. He considered the landscape character is not open, but with pleasant internal vistas within a site rather than openness beyond the sites, although some open views are possible along road corridors. Ms Dray's description<sup>110</sup> of the character of this area was similar, identifying the small rural land holdings, individual houses, shelterbelts, mature tree and garden plantings, and productive rural activities.
- 178 To the south of RM4 and West Coast Road, Mr Compton-Moen's evidence<sup>111</sup> was that the landscape is characterised by larger lots, some institutional facilities, and has a more open character with views possible to the Port Hills. However, he considered the institutional facilities and the busy SH73 influence the existing character of this area, being one with a

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<sup>106</sup> And subsequently updated, March 2018

<sup>107</sup> And further information provided in response to an RMA s92 request

<sup>108</sup> Section 42A Technical Report from Ms Dray

<sup>109</sup> Evidence of Mr Compton-Moen, para 9.1

<sup>110</sup> Section 42A Technical Report from Ms Dray, para 10-11

<sup>111</sup> Evidence of Mr Compton-Moen, para 9.2

mix of activities on the edge of a major urban settlement.

179 With respect to topography, although the area is mostly flat with no notable features, Mr Compton-Moen considered<sup>112</sup> the existing quarries and associated bunds to form part of the existing landscape, decreasing its sensitivity to further change.

180 It was Mr Compton-Moen's evidence<sup>113</sup> regarding effects on existing landscape character that the area has a low-medium sensitivity to change, due to the flatness of the area and the range of existing land uses. By comparison with the existing quarries, he considered the RM4 proposal is a relatively small, visually contained, area and not of a scale that would erode the "sense of place" of the Canterbury Plains. Although the topography of the site would be permanently altered as a result of the quarrying, Mr Compton-Moen considered the existing landscape has a high ability to absorb this change, such that the effects would be less than minor.

181 Ms Dray held a different view<sup>114</sup> regarding effects on landscape character. In her opinion, the extension of quarrying into RM4 would exacerbate the existing effects of quarrying on the landscape character and rural amenity of this area. The landform of the Canterbury Plains is being permanently altered and, in her opinion, the concentration of quarries in this immediate area is eroding the "sense of place" of the Canterbury Plains as an open, rural landscape.

182 We questioned Mr Compton-Moen about Ms Dray's concern. He gave his opinion that landscape character is not just the topography of an area, but also its other elements, such as the patterns of trees, houses, fences and buildings. He considered the area has a mixed landscape character, which overall will stay much the same as it is. He acknowledged that within the immediate RM4 site, there will be a change of topography, but he considered this just to be a change and not an adverse effect on the overall landscape character of the area. In response, Ms Dray emphasised the value of the Canterbury Plains as a known and loved landscape feature, with its flat topography and shelterbelts. She remained concerned that its value was being eroded by quarrying activities, which even after rehabilitation will remain as significant depressions in the landscape. However, in answer to our questions, Ms Dray stated that she was not saying that the RM4 quarry is a "tipping point" in this case, as it is an extension of the other excavations in the area.

183 Some submitters also expressed their concerns at the scale of landscape change from the proliferation of quarrying in their area. Mr Blanks<sup>115</sup> referred to "*another hole in the neighbourhood*". Mr and Mrs Clarkson's<sup>116</sup> written statement referred to "*green pasture*

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<sup>112</sup> Evidence of Mr Compton-Moen, para 9.3

<sup>113</sup> Evidence of Mr Compton-Moen, para 9.4

<sup>114</sup> Section 42A Technical Report from Ms Dray, para 28

<sup>115</sup> 90 Old West Coast Road

<sup>116</sup> 100 Old West Coast Road

*giving way to grey pits of nothing*'. Mrs McDonagh provided us with aerial photographs showing the rate and degree of change to the landscape in this area since 2006.

184 We acknowledge the concerns expressed by the submitters and Ms Dray about the rate and scale of change to the landscape in this area, as a result of the expansion of quarrying activities over the last decade. However, our focus is on the effects of the RM4 quarry on the character of the rural landscape in this area, albeit that we must consider the effects in conjunction with changes that have already occurred within the existing environment.

185 Having considered all the evidence, and our observations from our site visits, we agree with the evidence of Mr Compton-Moen. We agree that the surrounding landscape contains a mix of activities and elements - the landscape to the north of the RM4 site is not open and is highly compartmentalised, and the south and west contains a wide mix of institutional and rural industrial activities making it less sensitive to landscape change. We consider the RM4 quarry would be a relatively small, visually contained, extension to the existing quarries and not of a scale that would erode the "sense of place" of the Canterbury Plains, even when considered in addition to the existing quarrying. We note here Ms Chapman's opinion<sup>117</sup> that quarrying and quarry pits are a long established feature of this area and RM4 is an extension further out of an existing pit, rather than the establishment of a new quarry. Overall, we do not consider it would adversely affect the landscape character of the surrounding area to more than a minor degree.

186 With regard to visual effects, Mr Compton-Moen's evidence<sup>118</sup> considered both effects on rural amenity of the Buchanans Road / Old West Coast Road area generally (with a focus on aesthetic coherence); and specific visual amenity effects for neighbouring properties and motorists.

187 Mr Compton-Moen stated it is the well-established shelterbelts that provide the existing aesthetic coherence to this area, allowing an eclectic mix of land uses to be located close to one another, without greatly affecting the area's visual coherence or rural amenity. It is a modified area, dominated by vegetation rather than openness. He also considered that the busy roads and road infrastructure have a significant effect on aesthetic coherence and rural amenity of the area generally. From our site visits, we also find it is the established shelterbelts and other plantings that provide the strongest influence on visual coherence in this area. In Mr Compton-Moen's opinion, the area has a medium sensitivity to change as the shelter belts provide a high level of absorption for development, allowing visual effects to be internalised. He considered that the RM4 quarry expansion will have negligible effects on rural amenity values for the surrounding area.

188 We have already outlined the concerns of Ms Dray regarding the RM4 quarry extension exacerbating the existing effects of quarrying on the rural amenity of this area. Similarly, the

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<sup>117</sup> Section 42A Report from Ms Chapman, para 108-112

<sup>118</sup> Evidence of Mr Compton-Moen, sections 10 & 11

concerns of some of the submitters regarding impacts on the amenity of their area.

- 189 In terms of specific visual amenity effects for properties, Mr Compton-Moen identified 622 Buchanans Road and 105 Old West Coast Road as having the highest potential to be adversely affected by the quarrying activity within RM4. His evidence was that views into the RM4 site from these properties are not possible due to the dense hedge along the Buchanans Road frontage of both properties. This is consistent with our observations from our site visits to these properties, and to the immediate surrounding area. The retention of existing planting and construction of the proposed bund along the Buchanans Road frontage of RM4 will further restrict views into the site. In his opinion, the level of change to visual amenity for residents of these properties will be very low; and for other properties further away from the RM4 site, the visual effects will be negligible due to the intervening vegetation and distance.
- 190 Ms Dray<sup>119</sup> also considered the effects on visual amenity for nearby properties and considered visual effects can be mitigated to an acceptable degree by bunding and planting. In her technical report, Ms Dray made recommendations<sup>120</sup> regarding improvements to the mitigation proposed by the applicant, particularly to the visible slopes of the bunds, protection for existing trees, and some additional planting. We understand that these recommendations are generally included in the 4 May Conditions.
- 191 Passing motorists and visitors to the cemetery were also identified by Mr Compton-Moen as groups potentially affected. He considered that views for passing motorists would be partial and temporary, and indiscernible with retention of existing vegetation and construction of the bunds. Similarly, for visitors to the cemetery from where views into the site will not be possible once the bunds are constructed and additional planting undertaken. Mr Compton-Moen did, however, refer to management of any dust visible from the cemetery.
- 192 Having considered the evidence, and own observations on our site visits, we agree with the conclusions of the landscape experts regarding the visual effects of the proposal on amenity values for nearby residents, passing motorists and visitors to the cemetery. We acknowledge that there will be temporary visual effects during the preparation of the site, construction of the bunds (particularly along the Buchanans Road frontages) and subsequent rehabilitation works, but these will be temporary and not dissimilar in visual effect from other earthworks activities that occur in rural areas. Following the implementation of the 4 May Conditions, we accept the evidence<sup>121</sup> that these specific visual effects will be mitigated to the extent that they are no more than minor.
- 193 With respect to visual effects on the rural amenity of the Buchanans Road / Old West Coast Road area generally, particularly its pleasantness and aesthetic coherence, we refer to our

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<sup>119</sup> Section 42A Technical Report from Ms Dray, para 27

<sup>120</sup> Section 42A Technical Report from Ms Dray, para 29

<sup>121</sup> Including from Ms Chapman, Section 42A Report, para 107 & 112



previous findings regarding the existing amenity values of this area. We accept the evidence of Mr Compton-Moen that the existing shelter belts, and the compartmentalising of the small rural-residential properties by plantings and fences, provide a high level of absorption for development. This allows visual effects to be internalised and reduces the potential for quarrying within RM4 to greatly affect the area's visual coherence or rural amenity. We also note our previous adoption of Ms Chapman's evidence that the CPD's rural objective and policies emphasise that the amenity of the rural environment should be considered to include the effects of the operation of productive rural activities, which can include adverse effects that may be noticeable to residents and visitors. With implementation of the 4 May conditions, we accept any adverse visual effects on rural amenity values for this area will be mitigated to a level consistent with the outcomes anticipated by the CDP for a rural working environment, and visual aspects of rural amenity values will be maintained accordingly.

#### *Traffic and Access Effects*

- 194 The proposal does not include any vehicle access from the RM4 quarrying site to Buchanans or Old West Coast Roads<sup>122</sup>. Our focus for assessing traffic and access effects has been on the ongoing use, for 8 years, of the existing access to the Yaldhurst Quarry at similar traffic levels to its current use, and of heavy vehicles using SH73 from that access.
- 195 The applicant's evidence on this issue from Mr Metherell concentrated on the appropriate standard for the SH73 access, and the concerns of NZTA and CCC regarding gravel material being transported on to the road from the processing site. We have already summarised the evidence from Mr Metherell, the witnesses for NZTA (Mr Spowatt and Mr Fletcher) and Mr Calvert (for CCC) and do not repeat that here.
- 196 The 4 May Conditions (CCC) reflect our understanding of the agreements between these parties, that were worked on during the hearing. Condition 24, requiring access upgrading, reflects the agreed wording between the applicant and NZTA put to us at the hearing, and accepted by Mr Calvert. Conditions 25 - 26, regarding gravel material on to SH73, have moved from the management plan approach put to us at the hearing by the applicant and NZTA. Instead, the conditions propose specific actions to be undertaken by the consent holder to avoid material being deposited, dropped or tracked on to SH73; and to safely remove any material that does become deposited on the road as soon as reasonably practical. We prefer this approach, as it avoids ongoing administrative processes and costs associated with the use of a management plan, and has greater clarity and certainty of implementation.
- 197 As we stated earlier, we are grateful for the efforts to reach agreement regarding these proposed conditions. We accept Conditions 24-27 of the 4 May Conditions (CCC), which we consider will improve safety for vehicles on SH73 compared with the existing situation.

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<sup>122</sup> Condition 28 of the 4 May Conditions ensures this

198 Mr Metherell's evidence did not address the effects of extending the life of the processing plant and, thereby, extending the duration of effects from heavy vehicle traffic using SH73. Mr Metherell stated<sup>123</sup> that the wider area transport effects will be no different from existing, with a continuation of the existing and historical levels of traffic activity from the site. Mr Calvert<sup>124</sup> considered the potential for ongoing adverse effects on the wider road network and discussed the existing operation of the quarry with NZTA staff. They did not identify any wider network effects on the state highway network, nor any crashes at the access point due to the speed of vehicles on SH73. It was Mr Calvert's opinion that the effects of the continued use of the Yaldhurst Quarry on the wider road network will be less than minor. On the basis of Mr Calvert's evidence, and the lack of any concerns raised by NZTA<sup>125</sup> regarding the wider highway network, we accept that extending the duration of effects from heavy vehicle traffic using the wider road network will be less than minor in terms of road safety and efficiency.

199 One aspect that was not examined by the traffic or noise experts was the effect of prolonging heavy vehicles passing rural residential properties on SH73. Ms Chapman assisted us by addressing this in her s42A Report<sup>126</sup>. She helpfully examined the potential for effects for properties that would be passed by traffic leaving the site (primarily to and from the east). She noted that SH73 already carries a high volume of traffic, with a significant proportion of heavy traffic. In her opinion, at some point beyond the access, traffic from one site simply becomes part of the flow of traffic along a highway, rather than being identified as generated by a particular activity. Ms Chapman identified the nearest potentially affected houses at 355 and 315 West Coast Road, being more than 600m from the Yaldhurst Quarry access. Given the separation distances and level of existing heavy traffic on SH73, it was Ms Chapman's opinion that the effect of prolonging the heavy vehicle trips would be less than minor and acceptable for these rural properties, and negligible for those further afield. We accept Ms Chapman's assessment of this potential effect. We consider her approach to be reasonable and a realistic reflection of the effects on properties alongside an already busy state highway.

#### *Effects on Groundwater and Surface Water*

200 Rule 17.8.3.6 of the CDP limits the maximum depth of excavation for quarrying activity in the RQ Zone to 1m above the highest recorded groundwater level. The applicant and the Council reporting officers agreed that it is appropriate to impose the same limitation on quarrying outside the RQ Zone. We note the concerns expressed by the submitters regarding quarrying to this depth above the unconfined aquifers located in this part of the

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<sup>123</sup> Evidence of Mr Metherell, para 7 & 9

<sup>124</sup> Section 42A Technical Report from Mr Calvert, page 3

<sup>125</sup> We accept the position put to us by Mr Fletcher (Section 4 of his evidence) that potential effects on the State Highway of prolonged activity on the site, and use of the access, are reasonable matters for us to consider.

<sup>126</sup> Section 42A Report from Ms Chapman, para 76-80

district. However, the appropriateness of this depth has been considered through the recent Christchurch Replacement District Plan hearings<sup>127</sup>, and we do not consider it is our role, in this resource consent hearing, to reconsider this CDP standard.

201 As quarrying activity in the CDP requires consent as a full discretionary activity (in the RUF Zone), we can consider the potential for effects on groundwater quality from excavation to the above depth across the RM4 site. In terms of the consents required from CRC, this decision relates solely to the discharge to air consent under the CARP, which does not relate to effects of excavation on groundwater quality. Other related CRC requirements under the Canterbury Land and Water Regional Plan (LWRP), such as for excavation or deposition of material over an unconfined aquifer, are being considered by us separately as non-notified applications<sup>128</sup>.

202 The applicant's evidence regarding effects on groundwater quality was provided by Mr van Nieuwkerk. He acknowledged the high hydrological vulnerability of the Christchurch Groundwater Protection Zone in this locality. However, it was his evidence<sup>129</sup> that maintenance of a 1m separation between the quarry floor and the maximum recorded groundwater level<sup>130</sup> would provide protection for the aquifer<sup>131</sup>, provided operational controls and mitigation measures are applied. He particularly referred to controls over fuel storage and spillage; security of the site; fill materials brought on to the site, rehabilitation and future land uses on the site<sup>132</sup>. In answer to our questions, he confirmed his opinion that, even with an undetected spillage of fuel from a vehicle on the site, it is highly unlikely that any Christchurch groundwater wells would be affected, and that conditions are proposed to prevent and/or mitigate the effects of such an occurrence.

203 Ms Chapman's report<sup>133</sup> was consistent with Mr van Nieuwkerk's evidence that, in general, aggregate extraction poses a relatively low risk to groundwater, but potential for contamination can arise from fuel spills, leakages from machinery or from the placement of unsuitable backfill material with the potential to leak contaminants into groundwater. With appropriate mitigation measures and maintenance of the 1m separation from groundwater, Ms Chapman also considered that any adverse effects on ground quality to be less than minor<sup>134</sup>.

204 Several of the submitters addressed us regarding the potential for groundwater contamination, stressing the unconfined nature of the aquifer, the link to Christchurch's water

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<sup>127</sup> Decision 34 of the Independent Hearings Panel, Christchurch Replacement District Plan, Chapter 17: Rural — Stage 2 (and relevant definitions and associated planning maps), para [142] – [146]

<sup>128</sup> Where an application is required under the LWRP

<sup>129</sup> Evidence of Mr van Nieuwkerk, para 18, 21-23

<sup>130</sup> Which would be significantly larger for average groundwater conditions

<sup>131</sup> To the extent that he considered any effects on groundwater would be less than minor

<sup>132</sup> Evidence of Mr van Nieuwkerk, para 18-19, 24-25

<sup>133</sup> Section 42A Report from Ms Chapman, para 128, 137-138

<sup>134</sup> Section 42A Report from Ms Chapman, para 137-138

supply, and that they all use well water and stock water races in this locality. We agree that avoiding contamination of groundwater as a result of this proposal is very important. In this regard, we have accepted the expert evidence that sufficient protection will be provided.

205 Submitters also referred us to the potential for the CPW irrigation scheme to raise groundwater levels in this area, such that the 1m separation from the previously highest recorded groundwater level would not be sufficient. We specifically questioned Mr Harrison on this matter, who had sought information from CRC groundwater scientists. He reported to us that CPW, if developed in this area, may increase average groundwater levels, and may flatten out seasonal fluctuations, but is highly unlikely to increase the highest groundwater levels. We accept his evidence and the future appropriateness of this CDP standard.

206 Apart from the method of determining allowable depth to groundwater (which we address below), the applicant and the CCC have agreed conditions relating to numbers of heavy vehicles within RM4; management of hazardous substances, contaminated soils and fill material brought into the site for rehabilitation; and security of the site. We accept these conditions as being appropriate to manage those risks to groundwater quality that could arise as a result of quarrying at the site.

207 In the 4 May Conditions, there remained disagreement between the applicant and CCC regarding the appropriate approach to the condition which ensures that excavation does not occur less than 1m above the highest recorded groundwater level. CCC preferred the specification of a depth below ground level (bgl). The applicant preferred a more flexible approach whereby the highest recorded groundwater level is calculated across the site, "referenced" from the nearest monitoring bore (M35/1080), with a surveyed datum point used to certify the required depth across the site.

208 We questioned witnesses regarding the different approaches. Mr van Nieuwkerk, the applicant's groundwater expert, agreed that a set depth below ground level (bgl) would be clearer, more certain, and more easily enforced. This was consistent with the approach for quarrying in RM2 and RM3. He had accepted the depth of 10.1m bgl recommended by the CRC groundwater experts, acknowledging that it is conservative. However, he stated there is very little data available to determine the appropriate depth at the site; and there will be gradients of both ground level and groundwater level across the site. He, therefore, supported the conservative (10.1m bgl) approach. Mr Bligh, the applicant's planner, supported the more flexible approach, although he acknowledged that the method for calculating highest groundwater levels at the site, by reference to the nearest monitoring bore, would need to be included in the conditions. In his right of reply, Mr Chapman submitted that we should follow the more flexible approach of the applicant.

209 We do not consider the conditions put forward by the applicant<sup>135</sup> provide sufficient detail as

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<sup>135</sup> Conditions 21-23 of the 4 May Conditions

to how the highest recorded groundwater level is to be referenced across the RM4 site. We consider there remains potential for disagreement as to how this is calculated. In particular, the conditions do not appear to us to explain how gradients in ground level and in the groundwater level across the RM4 site (and between the site and the nearest monitoring bore) are to be taken into account. Given the importance of protecting groundwater quality in Christchurch's unconfined aquifers, we consider the more conservative, certain and clear approach is preferable, as supported by CCC, the recommendations from the CRC groundwater experts, and Mr van Nieuwkerk.

- 210 With respect to effects on surface water, this issue was not put before us in any detail. Mr van Nieuwkerk explained that the closest natural water body to the site is the Waimakariri River (approximately 7km to the north). He considered that quarrying at the RM4 site would not have any effects on that river<sup>136</sup>. He noted the network of water races and stormwater channels in the area, but that there is no hydraulic connection between these and the groundwater under the site<sup>137</sup>. The applicant's evidence regarding effects on surface water was accepted by Ms Chapman<sup>138</sup>. We accept the evidence of Mr van Nieuwkerk and Ms Chapman that the proposed quarrying will not result in adverse effects on surface water bodies.

#### *Rehabilitation and Future Use*

- 211 Rehabilitation of the areas to be used for quarrying and aggregates-processing is required under the CDP, by way of Policy 17.2.2.13 and Rule 17.8.3.14 (*Quarry site rehabilitation*). Although the rule applies in the RQ Zone, rather than the RUF Zone, we agree with Ms Chapman's evidence<sup>139</sup> that it provides useful guidance for assessing rehabilitation plans for a new quarry in the RUF Zone. We also agree with Ms Chapman<sup>140</sup> that Clause 17.11.2.16, which contains matters of discretion regarding "*Rehabilitation and end use*" that apply when assessing a restricted discretionary aggregates-processing activity in the RQ Zone, is also relevant for considering a new quarry in the RUF Zone. We appreciate her consideration of these matters in her report, along with the technical input from Ms Dray.
- 212 We received evidence from several witnesses<sup>141</sup> regarding the draft Quarry Rehabilitation Plan (QRP) put forward by the applicant (6 March 2018); the wording of associated rehabilitation conditions; and the end state of, and future uses for, the rehabilitated sites. Although there were various matters of disagreement in the reports and evidence before us, we appreciate the efforts made between the applicant's witnesses and the CCC reporting officers to update the QRP (the 6 March version) and the rehabilitation requirements in the

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<sup>136</sup> Evidence of Mr van Nieuwkerk, para 14-15, 17

<sup>137</sup> Evidence of Mr van Nieuwkerk, para 15

<sup>138</sup> Section 42A Report from Ms Chapman, para 139

<sup>139</sup> Section 42A Report from Ms Chapman, para 146

<sup>140</sup> Section 42A Report from Ms Chapman, para 149

<sup>141</sup> Ms Chapman, Ms Dray, Mr Forbes, Mr Compton-Moen, Mr Mthamo and Mr Bligh

4 May Conditions (CCC - Conditions 43-51). Apart from one outstanding matter (which we will address below), we have not needed to consider the previous areas of disagreement. Subject to some improvements to their clarity, we have accepted those conditions as being appropriate to manage the rehabilitation of the RM4 site following the quarrying activity, and the condition and end-use of the Yaldhurst Quarry site. We note Condition 50 requires a QRP to be submitted to the CCC for certification and Condition 51 specifies (amongst other matters) that it be based on the draft QRP (6 March) and the matters listed in Rule 17.8.3.14. We accept the evidence of Ms Chapman<sup>142</sup> that, with the changes she recommended to the draft QRP (now incorporated into the 4 May Conditions), it will be sufficient to achieve the outcomes sought through Policy 17.2.2.13.

213 The future state and use of the rehabilitated sites was addressed in the applicant's evidence from Mr Mthamo. He was asked to consider<sup>143</sup> whether the rehabilitation proposed by the applicant would return the land to a '*stable and free-draining landform capable of supporting light pastoral farming or an alternative permitted or consented activity*', as specified in the CDP definition of '*quarry site rehabilitation*'. Mr Mthamo's evidence was unchallenged and we accept his expert opinion<sup>144</sup> that the 300mm of topsoil, required by the conditions to be achieved across the RM4 and Yaldhurst Quarry areas, would be able to sustain pasture growth sufficient economically for purposes such as cut and carry (for hay or silage) or small animal grazing (e.g. sheep). We agree with his comment<sup>145</sup> that these are the types of uses for which rural-residential properties in the area have traditionally been used. Mr Mthamo provided various recommendations to improve rehabilitation success<sup>146</sup>, relating to such matters as management of stripped and stockpiled soil; reconstruction of the soil profile during rehabilitation; grass species selection; and plant establishment strategies. We note that reference to Mr Mthamo's recommendations has been included in Condition 44 of the 4 May Conditions (CCC), as matters to be incorporated into the Quarry Rehabilitation Plan. We support this, as we found Mr Mthamo's evidence to be helpful.

214 Mr Mthamo's evidence<sup>147</sup>, and his answers to our questions, stated dairying would be the highest risk rural activity for groundwater contamination. He stated that the land would not be suitable for dairying, which he considered would not be permitted by the relevant regional plan rules. We accept his evidence that dairying is unlikely to be a feasible land use option for this land, due to insufficient pasture yield; and we agree there are regional plan provisions directed to managing the effects of land uses on groundwater quality (through the LWRP). Given the high vulnerability of groundwater to contamination in this area, we consider the potential risk from future land uses on the rehabilitated land does require some management

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<sup>142</sup> Section 42A Report from Ms Chapman, para 161-162

<sup>143</sup> Evidence of Mr Mthamo, para 6

<sup>144</sup> Evidence of Mr Mthamo, para 12, 64 & 66-69

<sup>145</sup> Evidence of Mr Mthamo, para 12

<sup>146</sup> Evidence of Mr Mthamo, para 17-18 & throughout his evidence

<sup>147</sup> Evidence of Mr Mthamo, para 52

control. However, we do not consider that the land use consent under the CDP is the appropriate mechanism to achieve this. We have been asked to decide a bundle of non-notified consent applications to the CRC, at the same time as deciding the consents we are considering in this report. These consents are under the LWRP and we consider they are the appropriate mechanisms for deciding if any future land use management is required on these areas to reduce the risk of future groundwater contamination.

- 215 In the 4 May Conditions, there remained disagreement between the applicant and CCC regarding the timeframe for submitting a QRP to the CCC. CCC considered the QRP should be submitted prior to the commencement of any activities under this consent, whereas the applicant sought it should be required prior to any rehabilitation or cleanfilling activities. From the evidence of Mr Mthamo<sup>148</sup>, we understand that successful rehabilitation can depend on the management of topsoil during its initial stripping and stockpiling (including in the bunds). These activities would be the first quarrying activities to occur. Accordingly, we consider the QRP, which specifies the methods to achieve successful rehabilitation, needs to be in place prior to any activities commencing. We, therefore, prefer the approach of the CCC.

#### *Other Effects – Ecological and Ngāi Tahu Cultural Values*

- 216 Ms Chapman addressed the potential for the application activities to result in adverse effects on ecological and cultural values and soil resources<sup>149</sup> and Mr Harrison considered the potential for adverse effects on Ngāi Tahu cultural values<sup>150</sup>. Effects on ecological values and soils were also addressed in the AEE. These issues were not in contention during the hearing, but we cover them here briefly to be comprehensive.
- 217 We accept Ms Chapman's evidence<sup>151</sup> that the proposed quarry will have insignificant adverse effects on ecological values and biodiversity. We also accept the evidence from Mr Harrison<sup>152</sup> and Ms Chapman<sup>153</sup> that the site is not located within a Ngāi Tahu silent file area; and there are no recorded archaeological sites or sites of heritage or Ngāi Tahu cultural significance identified in the CDP, on or near the application site. In addition, CRC advised Te Ngāi Tūāhuriri Rūnanga regarding the application and no response was received. We agree that adverse effects on Ngāi Tahu cultural values are, therefore, likely to be insignificant. However, we support the proposed condition relating to accidental discovery of Kōiwi Tangata (human remains) or artefacts.

#### *Cumulative Effects, particularly on Amenity Values*

- 218 An "effect" is defined in s3 of the RMA to include "*any cumulative effect which arises over*

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<sup>148</sup> Evidence of Mr Mthamo, para 17 & throughout his evidence

<sup>149</sup> Section 42A Report from Ms Chapman, para 140-144

<sup>150</sup> Section 42A report from Mr Harrison, para 58-60 & 90

<sup>151</sup> Section 42A Report from Ms Chapman, para 140

<sup>152</sup> Section 42A report from Mr Harrison, para 60

<sup>153</sup> Section 42A Report from Ms Chapman, para 141

*time or in combination with other effects". We have, therefore, considered whether:*

- (a) any effects of the proposal will arise in the future, or
- (b) one effect will combine with another effect of this proposal; or
- (c) the effects of this proposal will combine with effects from other activities occurring in the vicinity.

219 In terms of the future effects of this proposal, we are satisfied that the potential adverse effects we have already assessed above will not accumulate and increase in severity over time. Rather, the proposal is for a period of 8 years, during which time stages will be progressively quarried and then rehabilitated, such that at the end of the consent period, the RM4 area will be fully rehabilitated with no ongoing effects, other than the change in landform. For the Yaldhurst Quarry area, the proposal will result in progressive improvement in the quality of, and effects from, that site over time, in accordance with the conditions proposed and, particularly, as areas not used for processing activity are rehabilitated in accordance with the QRP.

220 We agree with Ms Chapman<sup>154</sup> that we should view the combined effects of the proposal together, as there may be situations where, despite each individual effect being found to be minor, the overall effects on amenity values from noise, dust, traffic and visual effects may collectively be more adverse. As we determined earlier, this is important for our consideration of dust, noise and visual effects for the amenity values of the affected area generally and for any particularly impacted properties.

221 We have assessed the individual noise, dust and visual effects from the quarrying in RM4 on the amenity values of the Buchanans Road / Old West Coast Road area generally, and for the nearest properties<sup>155</sup>. We have not found that any of these effects would individually change amenity values in a way that is significantly adverse. The activities would be visually noticeable during the site preparation and rehabilitation stages, from the roads, cemetery and entrances to the nearest houses. Noise will be very noticeable during these short duration, construction stages at the nearest houses, and audible at times during quarrying operations, but consistent with the acceptable noise environment anticipated for this area. Dust nuisance effects at neighbouring dwellings (including cumulative effects with dust from existing quarries) will be no more than minor, if dust management measures are rigorously implemented, and the degree of dust likely to be experienced from the proposed activities will be consistent with what can be anticipated in this rural environment. We acknowledge the genuinely expressed concerns of the residents in this area that, cumulatively, these effects will erode the amenity they currently value in this area. However, with the proposed conditions, we consider the combined effects on rural amenity values will be mitigated to a

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<sup>154</sup> Section 42A Report from Ms Chapman, para 122

<sup>155</sup> In particular, 622 Buchanans Road and 105 Old West Coast Road, with 120 & 132 Old West Coast Road being directly across the open paddock on the corner of Buchanans and Old West Coast Roads.



level consistent with the outcomes anticipated by the CDP for this rural working environment of small-scale, well-planted properties (and passing traffic activity), and overall rural amenity values will be maintained accordingly.

- 222 We have also considered the effects of the proposal in combination with effects from other activities occurring in the vicinity, such as the existing quarrying and existing heavy traffic on SH73. We have considered these as part of the existing receiving environment. We acknowledge the concerns of the submitters in this regard, that their rural amenity values are being slowly eroded by quarrying activities expanding in the area<sup>156</sup>. We have needed to consider whether the effects from the RM4 quarrying and continued processing at the Yaldhurst Quarry will accumulate with the effects from the existing quarrying and processing in the vicinity.
- 223 The proposed aggregates-processing would extend the life of the existing Yaldhurst Quarry processing plant and, thereby, extend the duration of its effects, potentially noise, dust and traffic. We referred above to the progressive improvement in the quality of, and effects from, that site over time as a result of the proposed conditions, particularly the rehabilitation of areas not used for processing. We have determined that noise from the processing plant, including cumulatively with noise from other activities, would comply with the CDP requirements at the nearest houses; and that heavy traffic would become a minor and acceptable part of the general flow of existing traffic along the highway. We have accepted that any dust nuisance effects from the processing plant will be minor, given the separation from the nearest houses. As a result, with the proposed conditions, we consider extending the life of the processing plant, when combined with effects from other quarrying and processing in the vicinity, would continue to maintain local rural amenity values.
- 224 For the quarrying activity within RM4, the noise effects from other activities in the area have been taken into account when assessing the existing noise environment, and the additional noise from the quarrying. As we noted above, the existing environment potentially affected by the quarrying activity is typified by noise from passing traffic and rural activities, and not noticeably by noise from existing quarrying and aggregates-processing activities. Even in combination with existing noise, we have found that noise levels from the proposed quarrying will remain comfortably within the acceptable noise limits set in the CDP. At houses further from the RM4 site (and closer to the quarrying and processing activities to the west on Old West Coast Road), we are satisfied that noise from the RM4 quarrying will not accumulate noticeably with existing noise.
- 225 We have found that visual effects from the RM4 quarrying will be short-term, contained and only noticeable in the immediate vicinity. From further away, we are satisfied that the visual effects will be negligible due to the intervening vegetation and distance and not adversely

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<sup>156</sup> Mrs McDonagh, 175 Old West Coast Road, gave evidence regarding the purchase of rural land by quarrying companies in this area, the incremental consents for quarrying or related activities, and the existing and potential future cumulative effects on the amenity of the environment.

cumulative with visual effects from other quarrying or processing in the vicinity. In terms of effects on landscape character, we have found that the RM4 quarry would be a relatively small, visually contained, extension to the existing quarries and not of a scale that would erode the “sense of place” of the Canterbury Plains, even when considered in addition to the existing quarrying.

- 226 In relation to the dust effects from the proposed quarrying and processing activity, the effects from other activities in the area have been taken into account. We have accepted the evidence of Ms Simpson, that given the local predominant wind directions, PM<sub>10</sub> and RCS emissions from the proposal are unlikely to have cumulative effects with other discharges.

*Positive effects*

- 227 We have already referred above to the progressive improvement in the state of the Yaldhurst Quarry area over time, particularly as areas not used for processing activity are rehabilitated in accordance with the QRP.

- 228 The need for gravel was addressed by the applicant’s witnesses, Mr Francis and Mr Copeland. Mr Francis presented information regarding regional demand for gravel in Greater Christchurch and estimates of this demand, and available supply, for the period 2014 to 2041<sup>157</sup>. Drawing on the *Twelfth Knight Consulting Report*, 2014, Mr Francis stated<sup>158</sup> that gravel demand in Greater Christchurch will continue to grow. Once the earthquake rebuild is complete, this increase will primarily be driven by population growth throughout the region, along with large infrastructure projects (the underlying “Business as Usual” increase in demand). 180 million tonnes are estimated to be required to satisfy demand from Greater Christchurch until 2041, an additional 40 million tonnes over what is currently available<sup>159</sup>. Mr Francis addressed the limited, ongoing availability of gravel from the Waimakariri River<sup>160</sup>, and the lack of available private land in the RQ Zone for further quarrying expansion<sup>161</sup>. He emphasised the economic efficiencies to expanding an existing quarry and continuing to use existing processing infrastructure, compared with establishing a new quarry elsewhere, particularly where the existing quarry is close to the principal location of gravel demand in Christchurch<sup>162</sup>.

- 229 Mr Copeland drew on this information on gravel supply and demand, transport and other costs, for his observations and conclusions regarding economic effects. His evidence<sup>163</sup> was that gravel is an important component in the construction and maintenance of buildings

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<sup>157</sup> Attached to Mr Francis’ written evidence was a report prepared by *Twelfth Knight Consulting* for Christchurch City Council, as background material for the Christchurch District Plan review (the *Twelfth Knight Consulting Report*, 2014). The author of the report did not present evidence to this resource consent hearing.

<sup>158</sup> Evidence of Mr Francis, para 31-34

<sup>159</sup> The *Twelfth Knight Consulting Report*, 2014

<sup>160</sup> Evidence of Mr Francis, para 40-45, drawing from the *Twelfth Knight Consulting Report*, 2014

<sup>161</sup> Evidence of Mr Francis, para 37-38

<sup>162</sup> Evidence of Mr Francis, para 29 & 35-36

<sup>163</sup> Evidence of Mr Copeland, para 9.4-9.5, 19, 28-37

and infrastructure. It is a low value, high volume product, with its end-use cost being particularly sensitive to transport costs. Greater Christchurch is effectively self-sufficient in gravel at the moment, with its cost being significantly less than for other main centres in New Zealand, resulting in significant economic advantages for Christchurch's people and communities. Mr Copeland identified particular economic benefits from the extension of the Yaldhurst Quarry into RM4<sup>164</sup> – the continued efficient use of the existing production and processing plant; deferring the costs associated with developing new quarries; and deferring the need to transport gravel from more distant sources, all of which help delay an increase in the cost of gravel (and the associated transport effects). It was Mr Copeland's opinion, that these factors are consistent with resource use efficiency and significant positive economic benefits for Christchurch's people and communities.

230 The applicant's assessment of the positive effects of the proposal was accepted and adopted by Ms Chapman<sup>165</sup>. She accepted that the activity will make some contribution to sustaining the supply of gravel for construction and maintenance in Christchurch and that this is a benefit of the proposal.

231 Mr Copeland's evidence was not directly challenged by the submitters. However, Mr Crews challenged<sup>166</sup> the scale of the economic benefits, as RM4 would only provide a small proportion of the anticipated shortfall in gravel supply to 2041 (he estimated approximately 3.5%). He did not consider that this proposal could be seen as a significant resource in terms of Christchurch's future gravel supply and could fall within the margin-of-error with such forecasting.

232 We note here that much of the evidence regarding economic benefits drew from a report prepared by Twelfth Knight Consulting for Christchurch City Council, as background material for the Christchurch District Plan review (the *Twelfth Knight Consulting Report*, 2014). The author of the report did not present evidence to us. We had a concern as to the weight we could attach to this evidence. However, we are aware that evidence from the report's author, referring to the same information from this report, was accepted by the Independent Hearings Panel in its decision on the rural zone provisions for the Christchurch Replacement District Plan<sup>167</sup>. The report was also available to us to consider. On this basis, we are satisfied that we can accept the information provided to us from the *Twelfth Knight Consulting Report*, 2014.

233 We accept there will be positive economic benefits to the people and communities from the RM4 quarry and the ongoing processing of the extracted gravel at the existing Yaldhurst

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<sup>164</sup> Evidence of Mr Copeland, parar 9.6, 38-46

<sup>165</sup> Section 42A Report from Ms Chapman, para 186

<sup>166</sup> Written statement of evidence of Mr Crews, para 33-35. Similarly, written statement from Mr & Mrs Martini, page 28-29

<sup>167</sup> Decision 34 of the Independent Hearings Panel, Christchurch Replacement District Plan, Chapter 17: Rural — Stage 2 (and relevant definitions and associated planning maps), para [34] & [45]-[57]

Quarry plant. We accept the evidence from Mr Copeland that there will be resource use efficiencies from the continued use of the existing production and processing plant. However, we agree with Mr Crews that the RM4 site is a relatively small size and will only make a small contribution to meeting Christchurch's anticipated shortfall in gravel supply to 2041.

- 234 Several submitters<sup>168</sup> expressed concerns to us regarding the effect on their property values should this proposal go ahead. Mr Copeland addressed this directly in his evidence<sup>169</sup>. It was his evidence that property values are a reflection of, not in addition to, any adverse effects from quarrying operations for nearby residents; and that to separately consider both adverse effects for local residents and property values effects would amount to double-counting. Whilst not discounting property value effects in situations where adverse effects, such as noise or dust, do occur for residents and their properties, we have not separately evaluated the property value effects. We agree that this would double count our specific assessment of the potential adverse effects themselves.

### Relevant Planning Provisions

- 235 An analysis of the relevant planning provisions was provided by Ms Chapman in her s42A Report, Mr Harrison in his s42A Report, by Mr Bligh on behalf of Road Metals and briefly by other experts in so far as they were relevant to their areas of expertise. The relevant planning provisions were also addressed in some detail in the AEE at pages 24 to 32.
- 236 As stated previously, we have not undertaken a separate analysis of the applications in terms of Part 2 of the RMA, nor the objectives and policies of the CRPS. We accept the submissions and evidence that, given the recent full reviews of the key statutory planning documents (which address the relevant matters before us), there is no need for us to have further direct recourse to Part 2 matters, nor the objectives and policies of the CRPS, in our assessment of this application.
- 237 Section 60(2) of the Greater Christchurch Regeneration Act 2016 requires decisions and recommendations on resource consents not to be inconsistent with Recovery Plans and Regeneration Plans. Ms Chapman addressed these plans in her s42A Report<sup>170</sup>, concluding that there are no Regeneration Plans of relevance and, although the Land Use Recovery Plan (LURP) is somewhat relevant (as its recovery actions require access to an adequate supply of gravel), its provisions have been considered in the development of the more-recently developed CDP. She considered that no further specific consideration of the LURP was necessary. We agree with Ms Chapman and have not specifically considered these planning documents.

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<sup>168</sup> For example, Mr & Mrs Martini, 76 Old West Coast Road; Mr & Mrs Clarkson, 100 Old West Coast Road; Mr Main, 622 Buchanans Road; Mr Prain, 132 Old West Coast Road

<sup>169</sup> Evidence of Mr Copeland, para 51-52

<sup>170</sup> Section 42A Report from Ms Chapman, para 44-48

*Christchurch District Plan*

- 238 In terms of the CDP, relevant objectives and policies were captured, in a tabulated form, at pages 27 to 30 of the AEE. Ms Chapman helpfully attached a more extensive set of relevant objectives and policies of the CDP as Appendix 6 to her s42A Report. We agree that Ms Chapman's appendix captures the objectives and policies relevant to the application to the CCC.
- 239 Ms Chapman's analysis of the CDP objectives and policies<sup>171</sup> concluded that the proposal is consistent with the relevant objectives and policies of Chapter 6.1 (Noise) and 7 (Transport). We accept her conclusions. In particular, the activities will comply with noise levels established through the CDP as being acceptable in rural areas.
- 240 With regard to the rural objectives and policies (Chapter 17), Ms Chapman concluded that, in an overall sense, the application is consistent with the provisions which seek to enable rural land to be used for rural productive activities, provided that conflicts between incompatible activities can be avoided<sup>172</sup>; adverse effects can be internalised as far as practicable; and adverse effects on rural amenity values can be avoided, remedied or mitigated. In answer to our questions, she said she relied on the outcomes sought through the objectives and policies, and the expert assessments, to determine the acceptable level of effects management. In this instance, she considered the effects of the proposal are consistent with what could be anticipated in a rural working environment, taking into account the emphasis on enabling rural productive activities. She did, however, state that she considered the 100m separation distance from quarrying to the nearest houses to be just at a level that is adequate for effects on adjoining landowners to be acceptable. We will return to Ms Chapman's more specific comments below.
- 241 Mr Bligh generally agreed with Ms Chapman's assessment of the CDP objectives and policies, although, in his opinion, the proposal was consistent across all aspects of the policy framework<sup>173</sup>. He concluded<sup>174</sup> the design of the proposed quarry and mitigation measures proposed adequately and appropriately avoid, remedy or mitigate all potential effects of the proposal. He elaborated in answer to our questions. He emphasised the need to consider the rural objectives and policies as a whole, which provide for a range of productive rural activities, with a range of effects which may be noticeable to residents. He acknowledged that the effects of rural productive activities need to be managed, through appropriately avoiding, remedying or mitigating effects. Like Ms Chapman, Mr Bligh looked to the

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<sup>171</sup> Section 42A Report from Ms Chapman, para 190-195 & 201

<sup>172</sup> We understand from para 193 of her Section 42A Report that Ms Chapman is referring here to the requirements of Strategic Objective 3.3.14 which requires conflicts between incompatible activities to be avoided "*where they may be significant adverse effects on the health, safety and amenity of people and communities*". This is the only relevant reference we find in the CDP provisions to avoiding conflicts between incompatible activities.

<sup>173</sup> Evidence of Mr Bligh, para 5.12-5.14

<sup>174</sup> Evidence of Mr Bligh, para 5.17

objectives and policies to determine what level of effects management is appropriate (or adequate) in each instance. He concluded, from the evidence of the experts he relied on, that all effects of the quarrying and processing activities can be managed to maintain the amenity values of the surrounding area. Whilst some effects will be noticeable, he considered that they would be acceptable and consistent with the policy guidance in the CDP.

242 There is one over-arching objective for the rural provisions of the CDP. Objective 17.2.1.1 relevantly establishes a dual outcome for use and development of rural land, that it *“supports, maintains and, where appropriate, enhances”* (a) *“the function, character and amenity values of the rural environment”*; and (b) *“in particular, the potential contribution of rural productive activities to the economy and wellbeing”* of the District. We accept that the proposed quarrying and processing activities would contribute positively to the District’s economy, albeit to a small degree. Consistent with the expert planning evidence, we have looked to the policies which implement this objective (and the expert technical evidence) for guidance as to the character and amenity values of this rural environment that are to be supported and maintained.

243 We agree with the planning evidence, that quarrying and processing activities have a direct relationship with, and are dependent on, the rural resource, and have a functional and operational necessity for a rural location, consistent with Policy 17.2.2.1.

244 We agree that the groundwater in this area is a highly important resource for Christchurch, and we have accepted the evidence that, with the mitigation measures proposed, significant effects on groundwater quality will be avoided, as specified in Policy 17.2.2.2. We have not been advised of any other important natural resources identified in the CDP, that might be affected by the proposal. Policy 17.2.2.2 states that other adverse effects on rural character and amenity are to be avoided, remedied or mitigated, providing scope to an applicant in managing these effects but little guidance as to the degree of management anticipated.

245 Policy 17.2.2.3 focusses on the contributing elements to rural character and amenity values, to be recognised as varying across the District, including as a result of the established and permitted activities. This policy also requires us to recognise that rural productive activities can produce noise, odour, dust and traffic consistent with a rural working environment and that may be noticeable to residents and visitors. We have previously adopted Ms Chapman’s assessment of these CDP provisions that the amenity of the rural environment should be considered to include the effects of the operation of productive rural activities, which can include noticeable odour, dust, noise and traffic, albeit that adverse effects on amenity values are to be avoided, remedied or mitigated. We consider Policy 17.2.2.4 reinforces this assessment by linking the character and amenity values required to be recognised in the rural flat land surrounding Christchurch urban area with the rural productive activities (and recreation activities) found in that area.

- 246 Policy 17.2.2.10 requires that “adequate separation distances” “are maintained” between “quarrying activity and incompatible activities”. Consistent with the expert planning evidence, we have looked to the rural objective and policies as a whole, to determine what separation distance is adequate for this particular proposal, with the mitigation measures proposed, in this particular rural area.
- 247 Policy 17.2.2.12 provides specific direction for quarrying in rural zones (outside the RQ Zone), by stating that new quarrying is to be provided for “only where the activity” (as relevant to this application):
- (b) *avoids or mitigates effects on activities sensitive to quarrying, including residential activities;*
  - (c) *internalises adverse environmental effects as far as practicable using industry best practice and management plans, including monitoring and self-reporting;*
  - (d) *manages noise, vibration, access and lighting to maintain local rural amenity values;*
  - (f) *ensures ... visual screening maintains local rural amenity values and character.*
- 248 In accordance with this policy direction, we have considered the particular activities proposed and their management, the separation distances to the nearest houses, and the mitigation and monitoring measures, on the basis that they must ensure:
- (a) significant adverse effects on the health, safety and amenity of people and communities, as a result of conflicts between incompatible activities, are avoided;
  - (b) adverse effects, including on rural character and amenity, are avoided, remedied or mitigated;
  - (c) adverse effects are internalised as far as practicable; and
  - (d) local rural amenity values and rural character are maintained.
- 249 Ms Chapman stated in her s42A Report<sup>175</sup> that the applicant had not demonstrated that the proposed mitigation measures constitute best industry practice (as specified in Policy 17.2.2.12, however, she considered that they would adequately mitigate and internalise the effects of the activity (Policy 17.2.2.12). In answer to our questions on this matter, she noted that there are no industry standards or guidance for mitigation of quarrying effects on the environment, so “best practice” is difficult to establish. It was her opinion that best practice does not need to be all possible measures at every site and that a mix of measures can be tailored to the specific quarrying situation. Provided the mitigation measures are sufficient to internalise adverse effects as far as practicable (as required by Policy 7.2.2.12), she considered the bundle of measures would represent best practice. We accept her evidence on this matter.
- 250 We have accepted the evidence of Ms Simpson and Mr Chilton that, even with the relatively

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<sup>175</sup> Section 42A Report from Ms Chapman, para 192

small separation distance of 100m to the notional boundary of the nearest dwelling, as a result of the nature and scale of the activity, the prevailing wind conditions and the proposed mitigation and monitoring, adverse dust effects would be unlikely to contribute to exceedance of air quality guidelines and standards, and unlikely to cause adverse health effects or more than minor dust nuisance effects.

251 We have previously accepted the evidence of Ms Chapman that, with the changes she recommended to the draft QRP (now incorporated into the 4 May Conditions), the proposed rehabilitation of the quarry and processing sites will be sufficient to achieve the outcomes sought through Policy 17.2.2.13.

252 We have reached our conclusions on each of the relevant effects earlier in this decision. On the basis of these determinations, we conclude as follows:

- (a) significant adverse effects on the health, safety and amenity of people and communities will be avoided;
- (b) adverse effects, including on rural character and amenity, are avoided, remedied or mitigated to an acceptable level, consistent with the direction provided in the objectives and policies of the CPD;
- (c) local rural amenity values are maintained to a level consistent with the anticipated outcomes for this receiving environment, being a small-scale rural working environment that is in relatively close proximity to some large quarries and aggregate processing plants.

253 Accordingly, overall, given the nature, limited scale and timeframe of the proposed quarrying activity; the nature of the surrounding environments to the RM4 and Yaldhurst Quarry sites; the separation distances to sensitive receptors; and the suite of mitigation and monitoring measures proposed, we consider the proposal to be consistent with the relevant CDP objectives and policies.

254 We have accepted Ms Chapman's answer to our questions regarding the need to specifically consider the Strategic Directions of the CDP, that the Strategic Directions are not intended to be applied on a case-by-case basis, although they may be of assistance where there is a conflict between other objectives and policies of the CDP. We have not specifically assessed the proposal against the objectives of the Strategic Directions (Chapter 3), although we have found Objective 3.3.14 to be of assistance when evaluating the scale of effects between incompatible activities that are to be avoided.

#### *Canterbury Air Regional Plan*

255 In terms of the CARP, relevant objectives and policies for the discharge to air application were discussed at pages 25 to 26 of the AEE. Mr Harrison included a somewhat different list of relevant objectives and policies in paragraph 75 of his Report. We agree that, between them, they capture the objectives and policies relevant to the application to the CRC.



- 256 In his Section 42A Report, Mr Harrison concluded that the discharge to air was consistent with some of the CARP's objectives and policies as he considered it would be unlikely to have health effects for nearby residents, or exceed ambient air quality guidelines or standards. However, at the time of writing his report, he considered the application would be inconsistent with Objectives 5.7 & 5.9 and Policies 6.1 & 6.9 because the discharge (as proposed at that time) was likely to cause more than minor nuisance dust effects for nearby land uses. However, as a result of the additional written approval, the 100m separation proposed from the nearest houses, and the expert air quality advice from Ms Simpson, by the time of the hearing, Mr Harrison had altered his opinion and considered the proposed discharge to air would be consistent with the objectives and policies of the CARP.
- 257 Mr Bligh generally agreed with Mr Harrison's assessment of the CARP objectives and policies, although, in his opinion, the proposal was consistent across all aspects of the policy framework<sup>176</sup>. With respect to the appropriate location of the discharge in the receiving environment, and its separation from sensitive activities (Objective 5.7 & Policy 6.9), Mr Bligh concluded that the location is appropriate, being in a rural area, in proximity to other quarrying activities, and close to the major area of demand. In relation to the potential for offensive or objectionable effects, or nuisance effects such as soiling (Objective 5.9 & Policy 6.1), Mr Bligh relied on the evidence from Mr Chilton and Ms Simpson that, subject to the proposed mitigation measures, the effects of the discharge will be less than minor; will not appreciably increase overall concentrations of PM<sub>10</sub> and PM<sub>2.5</sub>; will not be offensive or objectionable; and will comply with the NESAQ.
- 258 We have considered the relevant objectives and policies of the CARP, as referred to in the AEE and by Mr Harrison and Mr Bligh, in light of our earlier conclusions regarding the effects of the proposed air discharge. On the basis of these determinations, we conclude as follows:
- (a) ambient air quality will be maintained;
  - (b) local rural amenity values will be maintained in terms of the level of dust nuisance that can be anticipated in this receiving environment;
  - (c) as a result of the nature and scale of the activity, the prevailing wind conditions and the proposed mitigation and monitoring, the separation distance of 100m to the notional boundary of the nearest dwelling is adequate;
  - (d) the discharge is unlikely to cause adverse health effects, including when considered cumulatively with discharges from other activities;
  - (e) offensive, objectionable, noxious or dangerous effects are likely to be avoided;
  - (f) the comprehensive suite of mitigation and monitoring measures, if rigorously implemented, will result in effective dust control and represent best practice dust

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<sup>176</sup> Evidence of Mr Bligh, para 5.5-5.11

management for this quarrying activity;

- (g) the delayed commencement of the consented activity, and potential for review based on interim results from the Yaldhurst RCS Study, provides precaution that the activity cannot proceed in the proposed form if the RCS monitoring results are unacceptably high in terms of the relevant health effects guideline.

## Section 105

259 Earlier in this decision we set out the matters in s105 we must have regard to when considering the discharge to air. Much of our decision has involved consideration of the nature of the discharge and the sensitivity of the receiving environment to adverse effects. The applicant's consideration of alternative methods of discharge and its reasons for its proposed choice were briefly set out in the Air Quality Report attached as Appendix C<sup>177</sup> to the AEE. Given the fixed location of the RM4 quarry extension, the alternatives considered for the air discharge revolved around dust mitigation measures, monitoring and responses. The AEE stated the applicant had chosen to use best practice techniques recommended by its air quality experts to control dust and monitor the impacts. We are satisfied that we have had regard to the applicant's reasons and the appropriate requirements for dust mitigation and monitoring through this decision.

## Overall Evaluation

260 We are required to come to a final determination after taking into account the relevant matters identified in s104(1) and s105 of the RMA; avoiding consideration of irrelevant matters; and allowing for consideration of conflicting contentions, the scale and degree of conflict, and their relative significance or proportion in the final outcome.

261 We have discussed in some length the actual and potential effects on the environment and the mitigation and monitoring measures proposed. We have also given close consideration to the relevant objectives and policies of the CDP and the CARP.

262 In exercising our discretion, we have considered all of the findings which we have reached in accordance with the statutory framework. We consider the effects of the proposal can be appropriately avoided, remedied or mitigated by the conditions imposed and the consents are consistent with the relevant planning frameworks.

263 Having considered the application documents, all of the submissions made, the evidence provided at the hearing, and the s42A Reports, we conclude the purpose and principles of the RMA can be best achieved by granting the resource consents sought, subject to the conditions.

## Conditions

264 Final updated conditions were provided to us by the applicant on 4 May (the 4 May

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<sup>177</sup> Section 9.0, page 33, of Appendix C to the AEE

Conditions). We have made few substantive changes to those conditions, which we generally consider are enforceable, reasonable and appropriate. We have made a number of minor wording changes for the purposes of improved clarity, certainty and consistency within, and between, the conditions and the different consents, without changing the intent of the final conditions as proposed by the applicant.

265 In relation to our substantive changes, we have mostly given our reasons for these earlier in this decision, other than the following:

- (a) Ms Chapman supported an addition to the Advice Note under Condition 14 of the CCC 4 May Conditions, to note that *“Crushing of aggregate may not comply with night time noise limits and should therefore be restricted to after 0700”*. She pointed out that switching on the plant and warming it up is likely to comply with the noise limits between 0600 (when the plant can start operating) and 0700 (when the day time noise limits start). She stated, however, that it is possible the actual crushing of aggregate may not comply. The applicant opposed the additional note on the grounds that it has not sought consent to exceed the night time noise limits and does not propose to start crushing before 0700. We have considered the need for this addition to the Advice Note, which already states the processing plant will be subject to the CDP night time noise limits between 0600 and 0700. We consider it is unnecessary to add to the initial Advice Note. It is sufficiently clear that no operations can be carried out at the processing plant that would exceed the noise limits for this time period.
- (b) We have extended the application of Conditions 32 & 33 and Condition 50 (of the CCC 4 May Conditions) to cover the aggregates-processing activity, as authorised by this consent. Both the quarrying activity on the RM4 site and the aggregates-processing activity on the Existing Yaldhurst Quarry site are the subject of this land use consent. They have both been considered as full discretionary activities, with consideration of all relevant effects. We consider it is necessary and appropriate to apply Conditions 32 and 33, requiring dust management to mitigate effects beyond the boundaries of the application site, to both aspects of the consented activities. Similarly, we consider Condition 50, which requires management of cleanfill brought on to the site for rehabilitation, should apply to both the RM4 and Existing Yaldhurst Quarry sites, as rehabilitation on both sites forms part of this land use consent.
- (c) We have included a new Condition 44 (to the CCC 4 May Conditions), which provides a process for modifying the Quarry Rehabilitation Plan. This requires the submission of a revised QRP to the Council for certification, before it can be implemented. We consider it is reasonable and practical to provide opportunity to modify the QRP during the term of the consent, to enable adaption for improved knowledge and techniques for example. The approach and wording has been adopted from similar provisions for the Dust Management Plan in the CRC consent.

- (d) We have amended Condition 31 to the CRC 4 May Conditions. This condition enables amendment to the trigger levels (from the continuous monitoring of suspended particulate matter) that result in the site manager being alerted to control dust emissions or cease quarrying activities. We accept the need for such a condition, as we have accepted Ms Simpson's evidence that the continuous dust monitoring trigger levels proposed are set at protective levels that could be triggered frequently. However, we have clarified the basis for such an amendment whereby the trigger levels could only be changed if they are found to be too low in relation to typical background concentrations occurring at the monitoring site, based on analysis of monitoring and meteorological data (not simply the experience of the consent holder, as proposed). We have determined that any amendment to the trigger levels must be supported by data analysis by a suitably qualified and experienced air quality expert. We have also made it clear that any amendment to the trigger levels is to be incorporated into the Dust Management Plan which must be provided to the CRC for written certification.

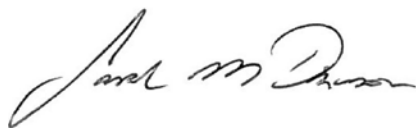
### **Duration of consent**

- 266 The application is for an 8 year term for both the land use activities and the discharge to air. We consider this is an appropriate term, recognising the nature of the environment and the scale and timeframes for the proposed quarrying activities.

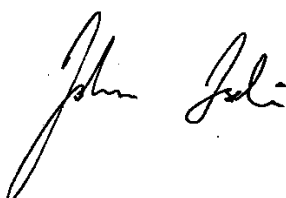
### **DECISION**

- 267 For the reasons addressed above, it is our decision that all consents are granted, pursuant to sections 104, 104B, 105 and 108, and subject to Part 2, of the Resource Management Act, subject to the conditions attached to this decision in Annexures 1 and 2.

*Dated at Christchurch this 16th day of May 2018*



**Sarah Dawson**  
**Hearing Commissioner (Chair)**



**John Iseli**  
**Hearing Commissioner**

## **Annexure 1**

### **Christchurch City Council – Land Use Consent - RMA/2017/2111 - Conditions**

## **Annexure 1**

### **Christchurch City Council – Land Use Consent**

**RMA/2017/2111**

#### **Conditions of Consent**

##### **Terms used in this consent:**

**RM4 site:** means the area labelled 'RM4' on the Staging Plan prepared by Golder Associates, dated 27 April 2018, and contains part or all of the properties at 581, 619 and 635 Buchanans Road, and 350 West Coast Road.

**Existing Yaldhurst Quarry:** means the area owned by Road Metals and operated as a quarry at 394 West Coast Road, and labelled 'Existing Yaldhurst Quarry' (coloured Green) on the Staging Plan prepared by Golder Associates, dated 27 April 2018

##### **General**

1. Except as required by subsequent conditions the development shall proceed in accordance with the information and plans submitted with the application, subsequent further information submitted on 10 November 2017 and with the Staging Plan prepared by Golder Associates, dated 27 April 2018. The Approved Consent Documentation has been entered into Council records as RMA/2017/2111 (208 pages) with the Staging Plan entered as page 27 of the Approved Consent Document.
2. The duration of this consent shall be limited to eight years from the date of granting of the consent. The consent holder is to notify the Team Leader, Christchurch City Council Compliance and Investigations Team, Regulatory Compliance Unit via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) upon commencement of extraction at the RM4 site.
3. The lapsing date for the purposes of section 125 shall be five years from the date of commencement of the consent.

##### **RM4 Site Preparation and Bunds**

4. Prior to any other preparation works at the RM4 site or the extraction of aggregate commencing at the RM4 site, the following shall occur:
  - a. Infill tree planting shall be undertaken in any gaps in the existing planting in the area labelled 'Additional planting' on the Staging Plan prepared by Golder Associates dated 27 April 2018 in order to screen views of the quarrying activity from the Yaldhurst Cemetery site. Trees shall be planted on 581 Buchanans Road in the open area to the south of the existing dwelling, in an irregular fashion, and shall be trees which are

capable of growing to 8.0m at maturity, and a minimum of 2.5m in height at time of planting. There shall be at least 12 new trees, spaced at least 5 m apart.

*Advice Note: For the purposes of achieving 'irregular' planting, the trees may be clustered into groups, as long as the 5 m minimum spacing distance is maintained between each individual tree.*

5. Prior to the extraction of aggregate commencing at the RM4 site for each stage as shown on the Staging Plan prepared by Golder Associates, dated 27 April 2018, the following shall occur:
  - a. 3 metre high earth bunds, with a flat top at least 1 metre wide, shall be constructed in advance of the extraction in five stages, as shown on the Staging Plan prepared by Golder Associates, dated 27 April 2018.
  - b. The bunds shall have a slope no steeper than 1:3 (one vertical to three horizontal) on the outer side and no steeper than 1:1 (one vertical to one horizontal) on the internal quarry side, giving a total bund width of at least 13m.
  - c. The existing tree planting (hedges and shelterbelts) along the road boundaries of 581 and 619 Buchanans Road shall be retained, and the bunds to be constructed along these boundaries shall be located behind these plantings. To ensure the survival of the existing hedges and shelter belts, bunds should not be constructed at the base of trees or over root plates.
  - d. The bund on the western side of the shelterbelt to be retained on the western boundary of 619 Buchanans Road and the quarry pit face on the eastern side of this same shelterbelt should be set back a minimum of 1m from the closest part of the shelterbelt or at least 4m from the tree trunks, whichever is the furthest, in order to avoid undermining the shelterbelt and/or damaging its roots.
  - e. Construction of bunds for each stage shall take place over no greater than a one month period.
  - f. Immediately following construction, the bunds are to be sown with grass or hydro-seeded to achieve swift grass cover and watered regularly to ensure grass cover is established immediately after construction.
  - g. To assist in achieving swift grass cover, construction of the bunds shall take place between the months of February to May or July to November to enable grassing of the bunds to occur in autumn or spring.
6. The grassed bunds shall be mown regularly or grazed to give a tidy appearance.
7. The bunds shall be watered (to suppress potential dust) until a grass cover has been established.



8. An after-hours contact phone number for a site contact shall be provided to the Team Leader, Christchurch City Council Compliance and Investigations Team, Regulatory Compliance Unit, until grass has been established on the earth bunds.
9. All landscaping required for this consent shall be maintained. Any dead, diseased, or damaged landscaping is to be replaced immediately with plants of a similar species.

## **Operational**

10. The extraction of aggregate shall only be within the area labelled 'RM4' on the Staging Plan prepared by Golder Associates, dated 27 April 2018 (**RM4 site**). The RM4 site contains part or all of the properties at 581, 619 and 635 Buchanans Road, and 350 West Coast Road on the property legally described as Lot 1 DP 25055, Lot 1 DP 23053, Lot 2 DP 319126, and Lot 2 DP 36161 contained within Certificates of Title CB6C/1499, CB3C/931, 75178 and CB15B/282.
11. The processing, crushing and screening of aggregate extracted from the RM4 site described in condition 10 shall only occur on the main Road Metals quarry site at 394 Old West Coast Road on the property legally described as Lot 9 DP 26999 and labelled 'Existing Yaldhurst Quarry' on the Staging Plan prepared by Golder Associates, dated 27 April 2018 (**Existing Yaldhurst Quarry**). No processing, crushing or screening of aggregate shall occur on the RM4 site.
12. The combined open area for extraction and land being rehabilitated in the RM4 site (prior to the establishment of vegetation cover) shall not exceed 4 hectares. For the avoidance of doubt, the proportion of excavated land to rehabilitation land that makes up the 4 hectare limit shall be for the consent holder to determine, given operational decisions to be made around the optimum time of year to rehabilitate.
13. The quarrying activity on the RM4 site shall only operate between the hours of 0700 to 1800 Monday to Friday and 0700 to 1300 Saturday. No activities, other than dust mitigation measures, shall take place on Sundays or public holidays.
14. The aggregates-processing activity on the Existing Yaldhurst Quarry site shall only operate between the hours of 0600 to 1800 Monday to Saturday.

*Advice Note: From 0600 to 0700 the processing plant will be subject to the night time noise limits from the Christchurch District Plan.*

15. The consent holder shall maintain a distance of not less than 500m from the notional boundary of the closest residential dwelling to the processing plant, marked 'X' on the Staging Plan prepared by Golder Associates, dated 27 April 2018.

*Advice Note: 'Notional boundary' shall be taken to mean a line 20m from any wall of a residential dwelling in existence at the time of the granting of this consent, or the legal boundary where this is closer to the dwelling.*

16. Unless written approval is obtained from the owners and occupiers, no extraction shall be undertaken within 100 metres of the notional boundary of the principal residential dwelling located at 622 Buchanans Road, as it existed at the time of granting this resource consent.

17. Aggregate shall be:

- a. Extracted using only one loader and one digger with up to two dump trucks at the same time; and
- b. Transported to the processing site at the Existing Yaldhurst Quarry via the haul road through RM2 and RM3 as shown on the Staging Plan prepared by Golder Associates, dated 27 April 2018.

18. All aggregate extraction shall occur with machinery on the pit floor.

19. There shall be no stockpiling of aggregate within the RM4 site.

20. The stockpiling of overburden for the purpose of rehabilitation is allowed by this consent. However, any overburden stockpiles must be stabilised and regrassed as soon as practicable.

#### **Depth of Extraction**

21. The maximum depth of extraction shall be no deeper than 10.1m below ground level and the consent holder shall ensure that at all times a minimum of one metre of gravel is retained between the floor of the quarry and the actual groundwater level at the RM4 site.

#### **Access**

22. Prior to the commencement of any activities authorised by this resource consent, the Existing Yaldhurst Quarry vehicle access on to West Coast Road (State Highway 73) shall be upgraded as follows:

- a. Quadrant kerbs/headwall protection shall be installed on the north-eastern side of the access at the culvert to prevent damage to the edge of seal at exit point;
- b. On the north-eastern shoulder installation of kerb and channelling or similar treatment approved by NZTA to make sweeping/maintenance easier within 50m of the access;
- c. The northeast shoulder of the access shall be remarked as an acceleration lane (rather than current shoulder bars); and
- d. The south-western unsealed shoulder of the access shall be fully constructed and sealed with an NZTA Diagram E widening to allow an additional shoulder width of at least 2.0 m for west bound right turning trucks exiting the quarry.

23. To avoid material being deposited, dropped or tracked onto State Highway 73 from the RM4 site and the Existing Yaldhurst Quarry, the following measures shall be put in place:

- a. The unsealed roads connecting to the main access road and labelled 'Unsealed roads that are to be chipped' on the Staging Plan prepared by Golder Associates dated 27 April 2018, is to have clean chip placed on it to minimise dust and movement of larger material to the sealed portion of the access;
  - b. A water cart is to be used regularly on unsealed access roads near the entrance, to minimise dust;
  - c. The sealed access road from the West Coast Road boundary of the Existing Yaldhurst Quarry site down into the quarry pit is to be swept regularly, as and when required, and shall be swept as soon as practicable should it be identified that there is a build-up of material on the access road;
  - d. The edges of the sealed access road shall be inspected and maintained, particularly where pot holes emerge. Before they are filled, pot holes shall be coned off to avoid further damage and likelihood of material transfer to the road;
  - e. The consent holder shall visually inspect all trucks for overloading and loose gravel on or around the body of the truck before exiting the Existing Yaldhurst Quarry site, with the purpose of identifying and minimising the risk of material being carried onto the State Highway.
24. The consent holder shall be responsible for ensuring any material from the Existing Yaldhurst Quarry site deposited on the State Highway is removed as soon as reasonably practicable, at their cost. Any works on the State Highway shall be carried out in accordance with a Traffic Management Plan (TMP) certified by the Christchurch Transport Operation Centre (CTOC). A traffic management plan shall be forwarded to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) for certification, within one month of the date of granting this consent. The TMP shall identify the nature and extent of temporary traffic management and how all road users will be managed by the use of temporary traffic management measures and shall comply with the NZTA Code of Practice for Temporary Traffic Management (CoPTTM). Activities on the State Highway should be planned so as to cause as little disruption, peak traffic delay or inconvenience to road users as possible without compromising safety.
25. The consent holder shall notify the Team Leader Compliance & Investigations at the Christchurch City Council and NZ Transport Agency within 24 hours of receiving a complaint of material from the Existing Yaldhurst Quarry site being on the State Highway, and within 48 hours the consent holder shall advise both parties as to the reason the incident occurred and what measures have been taken to address the issue.
26. Vehicular access to the RM4 site shall be via the internal haul road only, with no access from Buchanans Road.

## Noise

27. All construction activities on the RM4 site shall be designed and conducted to ensure that construction noise from the RM4 site is controlled so as to comply with NZS 6803:1999 – Acoustics: Construction Noise.
28. Hours of operation for construction activities shall be limited to 0730 to 1800 Monday to Friday and 0730 to 1300 Saturdays. No construction activities, with the exception of dust mitigation activities, shall be undertaken on Sundays or public holidays.
29. For the purpose of conditions 27 and 28, construction activities shall be defined as being any work required to prepare the RM4 site for extraction and rehabilitation works. In particular, activities associated with the construction of earth bunds and stripping/reinstatement of topsoil shall be considered construction activities.
30. Operational noise from the quarrying activity on the RM4 site and the aggregates-processing activity on the Existing Yaldhurst Quarry site shall comply with the following noise limits:

<b>Daytime (0700-1800)</b>	
Measured at the notional boundary of any dwelling not located on the RM4 site	50dB L <sub>Aeq</sub>
Measured at the boundary of the site receiving noise from the activity	55dB L <sub>Aeq</sub>
<b>Night time (0600 – 0700) – processing site only</b>	
Measured at the notional boundary of any dwelling not located on the RM4 site	40dB L <sub>Aeq</sub> / 65dB L <sub>Amax</sub>
Measured at the boundary of the site receiving noise from the activity	45dB L <sub>Aeq</sub> / 70dB L <sub>Amax</sub>

31. The loader and any dump trucks working on the RM4 site shall be fitted with broadband directional reversing beepers as opposed to tonal reversing beepers.

## Dust

32. The quarrying activity on the RM4 site and the aggregates-processing activity on the Existing Yaldhurst Quarry site shall not cause suspended or deposited particulate matter, which has a noxious, dangerous, offensive or objectionable effect, beyond the boundaries of the RM4 site and the Existing Yaldhurst Quarry.
33. The consent holder shall undertake all practicable measures to ensure compliance with Condition 32 of this consent. Such measures shall include but not be limited to:
- Applying water to unconsolidated surfaces (including roads) and stockpiles, as necessary, to minimise dust emissions during dry and windy conditions;

- b. Making a water cart with a water gun capable of reaching the tops of stockpiles available for use on the RM4 site and the Existing Yaldhurst Quarry at all times;
- c. Using a sprinkler system to dampen aggregate during crushing and screening processes at the processing plant;
- d. Minimising the areas of exposed ground within the exposed land area limit of Condition 12. The consent holder shall ensure that the overburden of the next stage is only removed once quarrying of a stage is nearing completion;
- e. Regrassing bare areas such as bunds, overburden stockpiles and rehabilitated areas as soon as practicable;
- f. Carrying out land stripping and land restoration, including bund formation, during favourable weather conditions and at times of least vulnerability to neighbours;
- g. Maintaining exposed bare soil in a damp condition while bunds are being formed;
- h. Taking current and predicted wind conditions into account in planning and carrying out work to minimise dust discharge;
- i. Maintaining a cover of road metal on unsealed haul roads to reduce dust caused by truck movements;
- j. Applying a speed restriction on all internal haul roads and within the RM4 site to not more than 15 km/hr at all times and erecting a sign at the start of the haul road advising of this;
- k. Checking trucks for load security before they leave the RM4 site and the Existing Yaldhurst Quarry to prevent truck overloading to avoid spillages;
- l. Minimising drop heights when depositing any material as part of the site preparation, loading of haul trucks, extraction or rehabilitation;
- m. Retaining the established shelterbelts along the northern and western edges of the site. and
- n. Applying surface treatment (such as pea gravel) to areas of exposed ground in the RM4 site and the haul roads servicing RM4 that will not be disturbed for the period set out in the Dust Management Plan required under Air Discharge consent CRC181274 from the Canterbury Regional Council. This treatment need only be undertaken where the undisturbed period falls wholly or partially between the months of November to April.

### **Hazardous Substances**

- 34. No hazardous substances shall be stored on the RM4 site and all refuelling of vehicles shall take place at the Existing Yaldhurst Quarry at 394 West Coast Road.

35. All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery, including:
- a. There shall be no storage of fuel or lubricants within the RM4 site.
  - b. There shall be no re-fuelling of vehicles or machinery within the RM4 site.
  - c. A spill kit that is capable of absorbing the quantity of oil and petroleum products that may leak or be spilt shall be kept on the Existing Yaldhurst Quarry site at all times.
36. In the event of a spill of fuel or any other contaminant, the consent holder shall clean up the spill as soon as practicable and take measures to prevent a recurrence.
37. The consent holder shall inform the Team Leader, Christchurch City Council Compliance and Investigations Team, Regulatory Compliance Unit within 24 hours of any spill event greater than 4 litres and shall provide the following information:
- The date, time, location and estimated volume of the spill;
  - The cause of the spill;
  - The type of contaminant(s) spilled;
  - Clean up procedures undertaken;
  - Details of the steps taken to control and remediate the effects of the spill on the receiving environment;
  - As assessment of any potential effects of the spill and measures to be taken to prevent a recurrence.
38. A maximum of one loader and one digger shall extract material from the working face at any time, with up to two dump trucks at any time.
39. Outside of working hours, the RM4 site shall be made secure, to ensure that no member of the public can gain access. Signage shall be erected stating that unauthorised access is prohibited.

#### **Contaminated Material**

40. In the event that soils are unexpectedly found that have visible staining, odours and/or other conditions that indicate soil contamination then work must cease and all workers shall vacate the immediate area, notify the site manager and ensure that the local authorities are informed (via Christchurch City Council at [envresourcemonitoring@ccc.govt.nz](mailto:envresourcemonitoring@ccc.govt.nz) and the Environment Canterbury pollution hotline on 0800 76 55 88). No excavation of such soil shall occur without advice from a Suitably Qualified and Experienced Practitioner (SQEP) on land contamination and the agreement of local authorities.

## Rehabilitation and Cleanfilling

41. Prior to the commencement of any activities authorised by this resource consent in the RM4 site, the consent holder shall submit a Quarry Rehabilitation Plan (QRP) via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) for certification by the Head of Resource Consents (or their nominee).
42. The overarching objective of the QRP shall be to ensure that the RM4 site and the Existing Yaldhurst Quarry are rehabilitated in a way which enables subsequent use of the land for other permitted or consented activities. The QRP shall be based on the draft QRP submitted to the Christchurch City Council on 6 March 2018. It shall include those matters listed in Standard 17.8.3.14 in the Christchurch Replacement District Plan and incorporate the recommendations made by Victor Mthamo in his evidence for the resource consent hearing dated 15 March 2018.
43. If the Christchurch City Council confirms receipt but then fails to provide any further response to the consent holder within one month then the QRP shall be deemed to be certified.
44. The QRP may be modified at any time following submission of a revised QRP via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) and its certification by the Head of Resource Consents (or their nominee);
45. Rehabilitation of the Existing Yaldhurst Quarry site and the RM4 site shall be undertaken in accordance with the certified Quarry Rehabilitation Plan.
46. The RM4 site shall be fully rehabilitated within one year of the completion of extraction.
47. Rehabilitation of the Existing Yaldhurst Quarry and the RM4 site shall be by means that include, but are not limited to:
  - a. Re-shaping the quarry walls to a maximum gradient no steeper than 1 vertical:3 horizontal;
  - b. Spreading enough topsoil to allow for a minimum compacted depth of 300mm of topsoil across the base;
  - c. Scheduling rehabilitation in autumn or spring wherever practicable, or by watering, to ensure that grass cover is established quickly.
  - d. Re-grassing within 60 days of placement of the final topsoil capping to minimise dust generation and erosion losses; and
  - e. All finished surfaces to be designed and constructed to be free draining.
48. The rehabilitation of the RM4 site, in accordance with conditions 45 to 47 shall be undertaken so that a completed grass cover is achieved no later than 12 months upon completion of all extraction activities in the RM4 site. Dust mitigation measures in accordance with this consent and CRC181274 shall continue to be employed on the RM4 site until this completed grass cover is achieved.

49. The area labelled 'Retained operational area (16.0 Ha)' on the 'Yaldhurst Quarry Rehabilitation Plan' prepared by Golder Associates and dated 6 March 2018, included as part of the draft Quarry Rehabilitation Plan submitted to the Council on 6 March 2018, shall be fully rehabilitated within 12 months of the cessation of this consent, unless a further resource consent has been obtained for an ongoing aggregates-processing activity or other activity on the Existing Yaldhurst Quarry site.
50. Where additional fill is required to be brought into the RM4 site or the Existing Yaldhurst Quarry for rehabilitation purposes, the consent holder shall ensure that all material deposited in the excavated area is:
- a. Only material defined as 'Cleanfill' as set out in the advice note attached to this condition;
  - b. Not deposited into groundwater; and is at least one metre above the highest groundwater level expected at the site (which for the RM4 site is determined in accordance with Condition 21);
  - c. Material is deposited in accordance with a management plan which has been prepared in accordance with Section 8.1 and Appendix B of "A Guide to the Management of Cleanfills", Ministry for the Environment, January 2002;
  - d. Checked by the site manager prior to deposition. If the material is not classified as Cleanfill, the consent holder shall immediately remove the material and arrange for the disposal of it at an appropriate location; and
  - e. Recorded in a log book by the site manager. The log book shall include a detailed record of all materials deposited into the Cleanfill site and shall provide to the CCC upon request.

*Advice Note: 'Cleanfill' is defined as:*

*Material that when buried will have no adverse effect on people or the environment. Cleanfill material includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete or brick that are free of:*

- *combustible, putrescible, degradable or leachable components*
- *hazardous substances*
- *products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices*
- *materials that may present a risk to human or animal health such as medical and veterinary waste, asbestos or radioactive substances*
- *liquid waste.*

## **Other**

51. The consent holder shall keep a record of any complaints relating to dust and shall provide the record to the Team Leader, Christchurch City Council Compliance and Investigations Team, Regulatory Compliance Unit, upon request. The record shall include:



- a. The location where the dust was detected by the complainant;
  - b. The date and time when the dust was detected;
  - c. A description of the wind speed and wind direction when the dust was detected by the complainant;
  - d. The most likely cause of the dust detected; and
  - e. Any corrective action undertaken by the consent holder to avoid, remedy or mitigate the dust detected by the complainant.
52. In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall:
- a. Immediately cease earthmoving operations in the affected area; and
    - i. Mark off the affected area until earthmoving operations recommence;
    - ii. Advise the Team Leader of the Resource Consents Team, Christchurch City Council, of the disturbance; and
    - iii. Advise the Upoko Runanga of Tuahuriri, or their representative (contact information can be obtained from the Christchurch City Council) and the New Zealand Historic Places Trust, of the disturbance; and
  - b. Not recommence earthmoving operations until either:
    - i. The consent holder provides a certificate in writing to the Team Leader, Christchurch City Council Compliance and Investigations Team, Regulatory Compliance Unit, signed by Upoko Runanga of Tuahuriri, or their representative(s), stating that appropriate action has been undertaken in relation to the discovered culturally sensitive material; or
    - ii. After five working days after advising Tuahuriri Runanga, a certificate signed by an archaeologist (i.e., a person with a post graduate degree in archaeology and who is a member of the New Zealand Archaeological Association) is provided to the Team Leader, Christchurch City Council Compliance and Investigations Team, Regulatory Compliance Unit, that states that in the archaeologist's professional opinion appropriate action has been undertaken in relation to the discovered culturally sensitive material. That certificate shall detail the action that has been undertaken by the consent holder. A copy of the archaeologist's qualifications shall also be provided with any such certificate.

*Advice Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or Heritage New Zealand Pouhere Taonga. This condition does not replace other legal responsibilities, such as those under the Heritage New Zealand Pouhere Taonga Act 2014.*

## Review

53. The Christchurch City Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purpose of:

- a. Dealing with any adverse effect on the environment which may arise from the exercise of this consent including, but not limited to:
  - i. The measures in Condition 23, which are intended to minimise the risk of material being dropped or tracked on to State Highway 73. The purpose of the review shall be to address any identified issue and can, if necessary, include the need to implement additional measures including physical structures/improvements as agreed by all the parties. Additional measures might include rumble strips/judder bars.
- b. Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

### **Further Advice Note:**

- *Monitoring*

*The Council will require payment of its administrative charges in relation to monitoring, as authorised by the provisions of section 36 of the Resource Management Act 1991. The current monitoring charges are:*

- *A monitoring fee of \$444 to cover the cost of setting up a monitoring programme and carrying out two site inspections to ensure compliance with the conditions of this consent; and*
- *Time charged at an hourly rate of \$118.50 incl. GST if additional monitoring is required, including non-compliance with conditions.*

## **Annexure 2**

### **Canterbury Regional Council – Discharge Permit - CRC181274 - Conditions**

## **Annexure 2**

### **Canterbury Regional Council – Discharge Permit (s15 Discharge Contaminants to Air)**

**CRC181274**

#### **Conditions of Consent**

- 1 The discharge of contaminants to air shall only be from quarrying activities located at: 581, 619 and 635 Buchanans Road and 350 West Coast Road, legally described as Lot 1 DP 25055, Lot 1 DP 23053, Lot 2 DP 319126 and Lot 2 DP36161 at or about map reference NZTM 1557266 mE, 5182299 mN as shown as the area shown as 'RM4' in red on the Staging Plan prepared by Golder Associates, dated 27 April 2018, which is attached to these conditions.
- 2 The contaminants authorised by this discharge to air consent shall only be generated on site from the following quarrying activities:
  - (a) Site preparation and overburden removal and storage;
  - (b) Bund formation and maintenance;
  - (c) Extraction, loading and transportation of material;
  - (d) Site rehabilitation; and
  - (e) Movement of vehicles associated with the above activities.
- 3 The quarrying activities authorised by this consent shall be carried out between 0700 and 1800 Monday to Friday and 0700 to 1300 Saturday. No activities except for dust mitigation measures shall take place on Sundays or public holidays.
- 4 Vehicular access to the site shall be through the southern boundary only, with no access permitted from Buchanans Road.

## PRIOR TO QUARRYING ACTIVITIES

### Baseline RCS Monitoring Results

*Advice Note:*

*Data is currently being collected as part of a baseline Respirable Crystalline Silica (RCS) monitoring programme commissioned in the Yaldhurst area by Canterbury Regional Council, Christchurch City Council and Canterbury District Health Board. Results from this study (the Yaldhurst RCS Study) with analysis of levels by Mote Limited are expected by July 2018.*

- 5 The exercise of this consent may not commence prior to the receipt of the results and analysis from the Yaldhurst RCS Study.
- 6 The exercise of this consent may commence if the long-term exposure level for RCS is predicted by Mote Limited, based on data collected and analysed in the Yaldhurst RCS Study, (the exposure level) to be at or below 3 µg/m<sup>3</sup> (annual average) based on three months of data:
  - (a) at at least one of the study's two RCS monitoring stations; and
  - (b) as an average across the two monitoring stations.
- 7 If there is insufficient, incomplete or unreliable RCS monitoring data to predict the long term (annual average) exposure level by 31 July 2018, or if the predicted RCS exposure level is greater than 3 µg/m<sup>3</sup> (annual average) as specified in Condition 6(a) and (b), the exercise of this consent may only commence when:
  - (a) the consent holder and the Canterbury Regional Council have agreed upon and commissioned a suitably qualified person ("the Reviewer") to review the analysis and results of the Yaldhurst RCS Study and recommend measures anticipated to achieve RCS concentrations at dwellings beyond the RM4 site, not subject to written approval, of not more than 3 µg/m<sup>3</sup> (annual average) ("the Review"); and
  - (b) the Review has been completed, an updated DMP has been completed and submitted to the Canterbury Regional Council in accordance with Condition 9, and certified in accordance with Condition 15.

- 8 The Review may contain, but not be limited to, recommendations for additional dust management controls and monitoring. The Review shall be produced within 40 working days of the reviewer being contracted and a copy shall be provided to the Canterbury Regional Council (CRC), Attention Regional Leader - Monitoring and Compliance. The consent authority's costs of the Review shall be paid by the consent holder.
- 9 Any recommendations of the Review accepted by the consent holder may be incorporated into the Dust Management Plan (DMP) and a copy of the revised DMP provided to the Canterbury Regional Council in accordance with Condition 15 within 20 working days of receiving the Review.
- 10 In addition, following consultation with the consent holder, the Canterbury Regional Council may serve notice of its intention to review the conditions of this consent under s128 of the RMA for the purposes of addressing the outcomes of the Review not adopted by the consent holder. This review condition is independent of the general consent review conditions. The notice must be served within 20 working days of the consent authority receiving the updated DMP in accordance with Condition 9.

## **General**

- 11 No quarrying activities may commence in the area 'RM4' as shown on the Staging Plan prepared by Golder Associates, dated 27 April 2018 (**RM4 site**) until the quarrying activities in 'RM2' and 'RM3' as shown on the Staging Plan prepared by Golder Associates, dated 27 April 2018 are partially rehabilitated.

Partially rehabilitated means that:

- (a) All extraction works and any backfilling activities are completed; and
- (b) Stabilisation and regrassing of the batters and majority of the quarry floor are completed.

The only area to not be rehabilitated in 'RM2' and 'RM3' is the internal haul road used to access the RM4 site and an area adjacent to the working face to enable excavation in the RM4 site to be commenced at quarry floor level.

- 12 At least two weeks prior to the commencement of the quarrying activities listed in Condition 2 of this resource consent, the consent holder shall inform the Canterbury Regional Council, Attention Regional Leader - Monitoring and Compliance in writing of the start date of quarrying activities.
- 13 Prior to commencing quarrying activities, the consent holder shall provide a copy of this resource consent to all persons undertaking quarrying activities authorised by this consent, and explain to those persons how to comply with the consent conditions.
- 14 The consent holder shall provide the contact details of the site manager for the quarry site, or nominated person(s), to the Canterbury Regional Council, Regional Leader - Monitoring and Compliance. This person(s) shall be available at all times (including outside quarry operation hours) to respond to dust emission complaints.
- 15 At least two weeks prior to commencing quarrying activities, the consent holder shall submit a DMP to the Canterbury Regional Council (CRC), Attention Regional Leader - Monitoring and Compliance for written certification. The DMP shall be based on the activities listed in Condition 2, and:
  - (a) If the CRC confirms receipt but then fails to provide any further response to the consent holder within one month then the DMP shall be deemed to be certified.
  - (b) The DMP may be modified at any time subject to written certification by Regional Leader - Monitoring and Compliance.
  - (c) The DMP will include the methods for ensuring compliance with the conditions of this consent, and in particular the dust mitigation measures set out in conditions 23-32 and any monitoring required by this consent.
  - (d) The consent holder shall implement the measures in the DMP, and all quarrying activities carried out on the consent holder's site must be consistent with the DMP and the conditions of this consent.
  - (e) Where there is an inconsistency between the DMP and the conditions of this consent the conditions of this consent shall prevail.

16 Prior to the commencement of quarrying activities, instruments capable of continuously monitoring and providing representative meteorological data for the RM4 site and surrounding area shall be installed. The instruments shall be capable of measuring the following:

- (a) Wind speed; and
- (b) Wind direction; and
- (c) Rainfall; and
- (d) Temperature.

The meteorological monitoring instruments shall be installed and used in accordance with the following:

- (e) The anemometer shall be installed at a height of at least six metres above natural ground level and in accordance with AS2923 – 1987 Ambient Air Grade for Measurement of Horizontal Wind for Air Quality Applications;
- (f) The meteorological monitoring results shall be continuously recorded using an electronic data logging system with an averaging time for each parameter of not more than two minutes. The results shall be available to the consent holder in real time and the logging system shall be able to send alerts to the consent holder via text message;
- (g) The meteorological data shall be retained in the form of an electronic record for the duration of this resource consent and copies provided to the CRC on request.
- (h) A report on the operation and maintenance of the meteorological monitoring instruments shall be provided to the CRC on request.

17 Prior to commencing extraction works, and after the construction of bunds, the consent holder shall ensure the installation and operation of a continuous dust monitor for the purpose of monitoring PM<sub>10</sub>. The monitor shall:

- (a) Be located on top of one of the bunds along the road frontage of either 581 or 619 Buchanans Road, so that it is upwind of active quarrying activities relative to the closest off-site residences to the northeast.



- (b) Be a nephelometer capable of measuring PM<sub>10</sub> concentrations in real time, in general accordance with the AS/NZS 3580.12.1:2015 guidelines.
- (c) Be fitted with an alarm system that will send a warning to the Environmental Manager or other nominated person(s) who has the responsibility of managing dust effects on the RM4 site. This person(s) shall be available at all times to take immediate action to investigate and reduce site dust emissions.

## **LIMITS**

- 18 The discharge shall not cause suspended or deposited particulate matter, which has a noxious, dangerous, offensive or objectionable effect, beyond the boundary of the RM4 site.
- 19 The combined open area for excavation and land being rehabilitated (prior to the establishment of vegetation cover) shall not exceed 4 hectares on the RM4 site. For the avoidance of doubt, the proportion of excavated land to rehabilitation land that makes up the 4 hectare limit shall be for the consent holder to determine, given operational decisions to be made around the optimum time of year to rehabilitate and form bunds.
- 20 A maximum of 400 tonnes per hour of aggregate shall be excavated from the RM4 site.
- 21 Aggregate shall be extracted:
  - (a) Using only one loader and one digger with up to two dump trucks at the same time; and
  - (b) Via access from the RM2 and RM3 sites located at 290 to 350 West Coast Road and shown as 'RM2' and 'RM3' in red on the Staging Plan prepared by Golder Associates, dated 27 April 2018, which is attached to these conditions.
- 22 Aggregate shall:
  - (a) Not be crushed, screened and/or processed in the RM4 site; and
  - (b) Not be stockpiled in the RM4 site; and

- (c) Be transported offsite for processing at the Road Metals Existing Yaldhurst Quarry processing site.

*Advice Note: The stockpiling of overburden for the purpose of rehabilitation is allowed by this consent. However, any overburden stockpiles must be stabilised and re-grassed as soon as practicable.*

## **MITIGATION MEASURES**

23 The consent holder shall undertake all practicable measures to ensure compliance with Condition 18 of this consent. Such measures shall include but not be limited to:

- (a) Applying water to unconsolidated surfaces (including roads) and stockpiles, as necessary, to minimise dust emissions during dry and windy conditions;
- (b) Making a water cart with a water gun capable of reaching the tops of stockpiles available for use on the RM4 site and the Existing Yaldhurst Quarry at all times;
- (c) Minimising the areas of exposed ground within the exposed land area limit of Condition 19. The consent holder shall ensure that the overburden of the next stage is only removed once quarrying of a stage is nearing completion;
- (d) Regrassing bare areas such as bunds, overburden stockpiles and rehabilitated areas as soon as practicable;
- (e) Carrying out land stripping and land restoration, including bund formation, during favourable weather conditions and at times of least vulnerability to neighbours;
- (f) Maintaining exposed bare soil in a damp condition while bunds are being formed;
- (g) Taking current and predicted wind conditions into account in planning and carrying out work to minimise dust discharge;
- (h) Maintaining a cover of road metal on unsealed haul roads to reduce dust caused by truck movements;
- (i) Applying a speed restriction on all internal roads and within the RM4 site of not more than 15 km/hr at all times and erecting a sign at the entrance to the site advising of this;

- (j) Checking trucks for load security before they leave the RM4 site to prevent truck overloading to avoid spillages;
  - (k) Minimising drop heights when depositing any material as part of the site preparation, loading of haul trucks, excavation or rehabilitation of the RM4 site;
  - (l) Retaining the established shelterbelts along the northern and eastern edge of the RM4 site; and
  - (m) Applying surface treatment (such as pea gravel or polymers) to areas of exposed ground in the RM4 site and the haul roads servicing RM4 that will not be disturbed for a period set out in the DMP required by Condition 15 and during the months of November to April.
- 24 Unless written approval is obtained for excavation by the owners and occupiers of 622 Buchanans Road, the excavation shall be set back at least 100 metres from the notional boundary of the principal dwelling on that property as it existed at the time of granting this resource consent. If written approval is obtained, an updated map showing where the excavations can occur shall be sent to the Canterbury Regional Council (CRC), Attention Regional Leader - Monitoring and Compliance before quarrying activities occur in the new area.
- 25 All quarrying activities shall cease (excluding dust suppression activities) when:
- (a) Wind speeds are greater than seven metres per second (rolling one-hour average); and
  - (b) Wind is blowing from the south to the west-southwest (170°N to 275°N); and
  - (c) Weather conditions are dry (1 millimetre of rain or less has fallen during the past 24 hours or ground conditions are visibly dry).
- 26 If quarrying activities cease under Condition 25, they may resume once the rolling one-hour average wind speed falls back to or below seven metres per second.
- 27 All bund formation and dis-establishment activities shall cease (other than dust suppression activities) when:

- (a) Wind speeds are greater than five metres per second (rolling one-hour average); and
- (b) Wind is blowing from the south to west-southwest (170 N to 275 N); and
- (c) Weather conditions are dry (1 millimetre of rain or less has fallen during the past 24-hour or ground conditions are visibly dry).

28 If bund formation or dis-establishment activities cease under Condition 27, they may resume once the rolling one-hour average wind speed falls back to or below five metres per second.

*Advice Note: This condition has a lower wind speed threshold than Condition 25, in recognition that bund formation is the closest potential dust generating activity to neighbours and that dust monitoring is not a useful measure for this activity.*

29 The continuous dust monitoring as required by Condition 17 shall have the following trigger levels, when the wind is blowing from the south to west-southwest (170°N to 275°N), that alert the environmental manager or other nominated person and requires a response as follows:

- (a) 1-hour average at 55 µg/m<sup>3</sup> or higher will require immediate actions to investigate and reduce site dust emissions.
- (b) 1-hour average at 65 µg/m<sup>3</sup> or higher will require immediate cessation of all quarry activities (excluding dust suppression activities) and taking actions to investigate and reduce site emissions.

30 If quarrying activities cease under Condition 29(b), they may resume once the 1-hour average falls back to or below the level in Condition 29(a).

31 The trigger levels in Condition 29 may be amended if, based on analysis of monitoring and meteorological data, they are found to be too low in relation to typical background concentrations occurring at the monitoring site. Any amendment to the trigger levels shall be incorporated into the DMP and the revised DMP provided to the Canterbury Regional Council, Attention: Regional Leader - Compliance and Monitoring for written certification. Any amendment to the trigger levels in the DMP shall be supported by data analysis by a suitably qualified and experienced air quality expert. Amended trigger levels shall only apply following written certification of the revised DMP by the Regional Leader, Canterbury Regional Council.

*Advice Note: The CRC and the consent holder's air quality experts have been deliberately conservative in setting the above trigger levels, and so have recommended the ability to review the levels through Condition 31.*

32 The environmental manager or other nominated person shall undertake two separate inspections every day for visible dust emissions. Any findings, mitigation and improvements implemented shall be recorded. The inspections shall:

- (a) Be undertaken in accordance with the DMP; and
- (b) Be taken from inside the RM4 area and along Buchanans Road.

#### **DUST MANAGEMENT PLAN**

33 The DMP required in accordance with Condition 15 shall:

- (a) Be reviewed and updated at least once every two years for the period of this consent; and
- (b) Be available on the Existing Yaldhurst Quarry site at all times.

34 The DMP shall include but not be limited to:

- (a) The actions required to be carried out to ensure compliance with the conditions of this consent; and
- (b) Identifying the persons responsible for carrying out all actions in relation to meeting the requirements of this consent; and
- (c) The frequency and triggers for the use of water sprays; and
- (d) The triggers in which all quarrying activities (except water spraying) must cease; and
- (e) Details of actions to be taken in response to non-compliance with Condition 18.

## **RECORDS AND REPORTING**

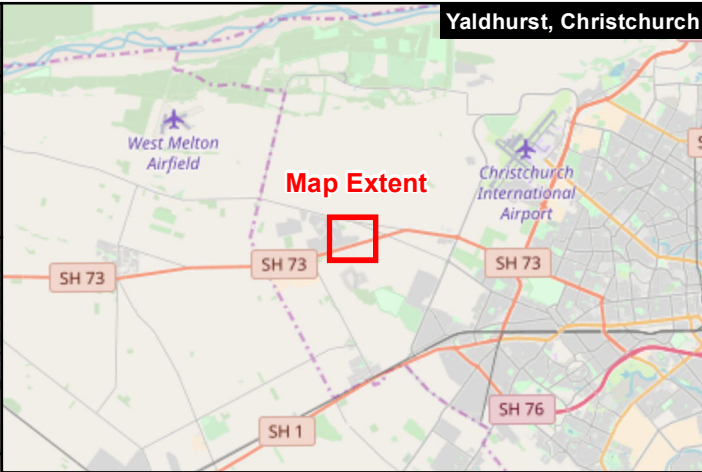
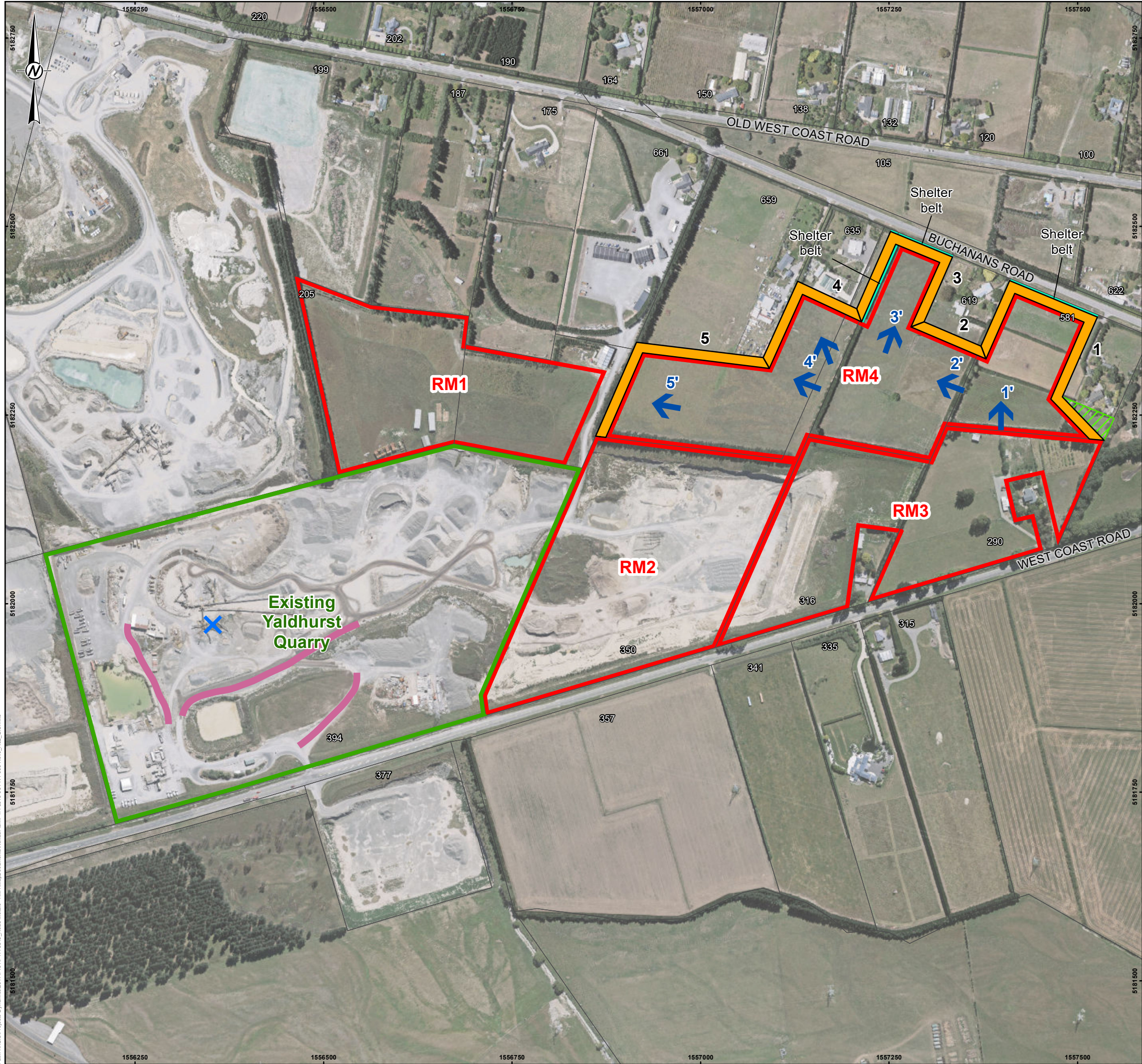
- 35 The consent holder shall keep a record of the volume of excavated aggregate, in cubic metres, to show compliance with Condition 20. This record shall be provided to the Canterbury Regional Council, Attention: Regional Leader - Compliance and Monitoring, by the 31st of January each year for the previous year, for the duration of this consent.
- 36 A record of all complaints made to quarry staff or management relating to the discharge of contaminants into air shall be maintained and shall include:
- (a) The location where the contaminants were detected by the complainant;
  - (b) The date and time when the contaminants were detected;
  - (c) A description of the wind speed and wind direction when the contaminants were detected by the complainant;
  - (d) The most likely cause of the discharge of contaminants detected; and
  - (e) Any corrective actions undertaken by the consent holder to avoid, remedy, or mitigate the effects of the contaminants detected by the complainant.

The record shall be provided to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance by the 1 December each year for the duration of this consent.

## **ADMINISTRATION**

- 37 The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 38 The lapsing date for the purposes of section 125 shall be 5 years from the date of commencement of this consent.





**LEGEND**

- Processing plant
- Proposed staging sequence (1'-5')
- Unsealed roads that are to be chipped
- Proposed bunding sequence (1-5)
- Proposed bund (13 m wide)
- RM1, RM2, RM3 & RM4
- Existing Yaldhurst Quarry
- Additional planting
- Shelter belt
- Parcel boundary
- House number

**NOTES**

1. Aerial: Environment Canterbury, Urban Imagery 2016, CC-BY-3.0-NZ.
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0 100 200 METRES

REFERENCE SCALE: 1:5,000 (at A3)

PROJECTION: NZGD 2000 New Zealand Transverse Mercator

CLIENT  
ROAD METALS

PROJECT  
QUARRY EXPANSION

TITLE  
STAGING PLAN

CONSULTANT	YYYY-MM-DD	2018-04-27
	PREPARED	KC
	REVIEW	RK
	APPROVED	KB

PROJECT NO. P1778513 REPORT 001 REV. 0

FIGURE 03

Path: K:\GIS\Projects\Dynamic\2017\401\1778513\_Road Metals - RM\MapDocuments\RehabPlan\1778513-401-R-F003Rev0\_A3\_GIS.mxd