

BEFORE THE COMMISSIONER APPOINTED BY:

OTAGO REGIONAL COUNCIL

AND

CENTRAL OTAGO DISTRICT COUNCIL

In the Matter

of applications by Cromwell Certified Concrete Limited to the Otago Regional Council and Central Otago District Council for discharge permits, a water permit and a land use consent relating to expansion of an existing quarry at 1248 Luggate-Cromwell Road

Between

**CROMWELL CERTIFIED
CONCRETE LIMITED**

SUPPLIMENTARY EVIDENCE OF DONOVAN VAN KEKEM FOR OTAGO REGIONAL COUNCIL

SUPPLIMENTARY EVIDENCE OF DONOVAN VAN KEKEM

1. My name is Donovan Van Kekem. My qualifications and experience are outlined in my evidence in chief¹.
2. This is a supplementary statement of evidence to my evidence in chief that which was included in Mr Whyte's Section 42A report.
3. Since preparing my evidence in chief I have had the opportunity to visit the site and its surrounds, review Mr Cudmore's evidence, the evidence of Mr Stacey, and that of other experts and submitters.
4. I have also participated in expert conferencing with Mr Cudmore, Ms Ryan, and Mr Stacey and helped prepare a joint witness statement.
5. Having reviewed and considered all of this additional information I have been able to clarify my professional opinions with regard to the applicant's proposal.
6. In my opinion, the potential for adverse air quality effects associated with the proposed quarry expansion is elevated due to the very close proximity of a number of sensitive receptors to the proposed quarry activities.
7. I agree with the other experts that a very high level of mitigation will be required to effectively manage dust discharges from the site. The mitigation required will need to be consistent with or exceed industry best practice.
8. In my experience there are very few quarries in New Zealand which have sensitive receptors as close as that proposed in this application. Most quarries will have a minimum setback of 100m between the quarrying activities and the nearest receptors (many have much larger separation distances).

¹¹ Brief of evidence of Donovan Van Kekem for Otago Regional Council for the resource consent application by Cromwell Certified Concrete Limited (CCCL) relating to the Amisfield Quarry, dated 23 November 2021

9. The Fulton Hogan Parkburn quarry has been discussed by the experts and the Commissioner in this hearing. I consider that this quarry is a good point of comparison as:
 - (i) It is located nearby and therefore will have similar weather patterns.
 - (ii) It is likely to be quarrying a similar resource (with similar silt content, etc),
 - (iii) It has sensitive receptors within similar separation distances to that proposed by the applicant.
10. I have reviewed information relating to the Fulton Hogan Parkburn Quarry provided to me by ORC. I note that the Parkburn quarry is consented to extract 300,000 t/yr and therefore is broadly in the same quarry size category as that proposed by the applicant.
11. I am also aware that whilst the Fulton Hogan Parkburn quarry consent conditions are not overly prescriptive (likely due to the age of the consent), Fulton Hogan are implementing a high level of dust mitigation at this quarry. My understanding is that the dust mitigation measures at the Fulton Hogan Parkburn Quarry include:
 - (i) The use of a conveyor system to transport aggregates from the extraction face to the processing plant.
 - (ii) Continuous weather and dust monitoring on the site boundary with real time alarms.
 - (iii) The continuous monitoring is used to trigger fixed/automated dust control such as water cannons, sprinkler lines, etc.
 - (iv) Elevated water misting lines which are used to limit fugitive dust discharges/plumes from stockpiles and other exposed surfaces.

12. Whilst I am still awaiting a record of the air quality complaints data from ORC, there is no mention of any complaints in the most recent compliance report.
13. I consider that the mitigation measures employed at the Fulton Hogan Parkburn quarry should be considered by the applicant and this is mirrored in my recommendations in the attached draft condition commentary.
14. I have had the opportunity to conference with the other air quality experts (Mr Cudmore, Ms Ryan, and Mr Stacey) and have prepared an annotated set of draft conditions. These are attached as Appendix A.
15. Some of the notable recommendations in these amended consent conditions are:
 - (i) The addition of a minimum setback distance of 50 m from the Clark residence (R12), the Clark storage facility (R1) and any dwelling built on the consented build platform on the AOL land (R6). Note that for the dwellings the setback distance is to be measured between the edge of the curtilage area (20 m from the façade of the dwelling) and the material extraction area.
 - (ii) The requirement for no quarrying activities to occur within 100 m of a sensitive cropping activity (i.e. cherry orchard) during the times of year when that cropping activity is sensitive to dust deposition (as defined by the horticultural experts). Based on the information I have been presented, this will enable the material to be quarried without generating an adverse effect on the adjacent crops.
 - (iii) A suitably qualified and experienced professional (SQEP) best practicable option (BPO) review condition which investigates the use of conveyors for extraction works in the expansion area. However, this BPO review need not be limited to the use of conveyors, any technology/mitigation

methodology which would better limit the potential for off-site effects should also be considered.

- (iv) The implementation of a 10 minute average 'alert' dust monitoring trigger.
- 16. In addition to the condition changes presented in Appendix A, it is my recommendation that the main haul road which is proposed to be constructed on the northern boundary of the existing quarry (abutting the Clark property), be moved to be more central to the existing quarry area. It appears that this new haul road will only be constructed and used once the expansion area is operational. I consider that the applicant should consider diverting traffic onto the existing haul road within the quarry pit (as marked on Map 3 of Mr Allison's slideshow). This would increase the separation distance between this dust source and neighbouring receptors. It is also my understanding that it would then also be further below natural ground level.
- 17. I also consider that at a minimum, aggregate conveyors should be used when excavating aggregate in the expansion area within 100 m of a dwelling (R12 and R6).
- 18. During expert conferencing on 16th Dec 2021, the rehabilitation works which will be required within the 'encroachment area' were discussed. It is my understanding that some of the material within this encroachment area may be overburden or have an elevated level of fine material. Given its proximity to neighbouring cropping activities, any material disturbance activities in this area will need to be closely monitored and appropriately mitigated. I consider that when the activities which are to occur in this area are finalised, appropriate mitigation measures are to be written into the DMP and certified by ORC. These mitigation measures are likely to be similar to that for the bund construction activities.
- 19. I also want to highlight, for the avoidance of doubt, that it is my understanding that the bund vegetative cover and maintenance requirements in the draft consent conditions are applicable to all boundary bunds (not just the ones in the expansion area).

20. In my professional opinion the proposed quarry expansion and associated activities can be undertaken without resulting in off-site adverse air quality effects if my recommendations in this statement and the attached draft consent conditions (and associated DMP) are adhered to.

Date: 17 December 2021

A handwritten signature in black ink, appearing to read "DVK".

Donovan Van Kekem

Commented [DVK1]:

Key:
 RC = Roger Cudmore
 DVK = Donovan Van Kekem
 PS = Peter Stacey
 DR = Deborah Ryan

DISCHARGE PERMIT

Pursuant to Section 104B of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: Cromwell Certified Concrete Limited

Address: 810 Great South Road, Penrose, Auckland 1061

Activity: To discharge contaminants to air for the purpose of operating an alluvial quarry

Term: 25 years

Location of consent activity: 1248 Luggate-Cromwell Road (State Highway 6)

Legal Description of consent location: Lots 3, 5 and 8 DP 301379

General Conditions

- 1 If this consent is not given effect to within a period of five years from the date of commencement of this consent, this consent shall lapse under Section 125 of the Resource Management Act 1991. The consent shall attach to the land to which it relates.
- 2 Aggregate extracted from the site must not exceed 200,000 cubic metres in any 12-month period.
- 3 The discharge shall not cause dust or the deposition of particulate matter that causes a noxious, dangerous, n objectionable or offensive effect beyond the boundary of the site.
- 4 The Quarry Manager or another nominated person, must be available at all times (including outside quarry operation hours) to respond to dust emission complaints and issues in accordance with measures described in the Dust Management Plan (DMP).
- 5 The maximum area of unconsolidated land comprising of the excavation area, backfilling areas and rehabilitation area shall not exceed two hectares.

Advice Note: The maximum area of unconsolidated land does not include the haul roads, processing area, stockpiles, areas which are covered with 50mm (or more) of washed gravels or stabilised with a dust suppressant, portacoms or workshop.

Dust Management Plan (DMP)

- 6 At least 20 working days prior to the commencement of quarry activities, the Consent Holder must prepare a Dust Management Plan (DMP) for the certification of the Consent Authority.
- 7 Works must not commence until the Consent Holder has received written certification of the DMP. Notwithstanding this, the works may proceed if the Consent Holder has not received a response from the Consent Authority within 20 working days of the date of the submission of the DMP.
- 8 The DMP must include, but not be limited to:
 - (a) A description of the purpose of the DMP;
 - (b) A description of the dust sources on site;
 - (c) A description of the receiving environment and identification of sensitive receptors within 250 metres of site boundaries;

- (d) The methods (including dust reduction through design methodologies), which will be employed as necessary to ensure compliance with the conditions of this consent;
 - (e) A description of site rehabilitation methodology and associated dust control measures;
 - (f) A description of particulate matter and wind monitoring requirements including:
 - (i) The location of the wind monitoring equipment;
 - (ii) The location of particulate matter monitors between active work areas within and sensitive off-site activities;
 - (iii) Details of wind speed trigger levels as set out in Condition [910](#) and associated alarm system. This shall also include the wind direction to be used in fulfilment of Condition [1014\(b\)](#);
 - (iv) Details of the particulate matter trigger levels as set out in Condition [109](#) and associated alarm system; and
 - (v) Monitoring instrumentation methodology, setup requirements, maintenance and calibration procedures;
 - (g) A description of procedures for responding to dust and wind condition-based trigger levels and associated follow up investigations, actions and recording of findings;
 - (h) A system for training employees and contractors to make them aware of the requirements of the DMP;
 - (i) Names and contact details of staff responsible for implementing and reviewing the DMP in order to achieve the requirements of this consent, and procedures, processes and methods for managing dust outside of standard operating hours;
 - (j) A method for recording and responding to complaints from the public;
 - (k) A maintenance and calibration schedule for meteorological and particulate matter monitoring instruments;
 - (l) Contingency measures for responding to dust suppression equipment malfunction or failures, including wind and particulate matter monitoring instruments.
 - (m) A procedure for completing an end-of-day dust mitigation checklist;
 - (n) Separate Standard Operating Procedures (SOPs) dedicated to the management of potential dust discharges from specific sources, including but not limited to:
 - (i) Stockpiles;
 - (ii) Site roads – sealed and unsealed;
 - (iii) Triggers for the use of water for dust suppression;
 - (iv) The use of dust suppressants other than water;
 - (v) Aggregate excavation and backfilling areas;
 - (vi) Topsoil and overburden stripping and stockpiling;
 - (vii) Bund construction, maintenance and the recontouring of slopes during rehabilitation;
 - (viii) Any automated dust suppression for dust prone areas that can be activated outside of working hours;
 - (ix) Location and calibration of particulate matter and meteorological monitoring equipment;
 - (o) Environmental information management for recording, quality assurance, archiving and reporting all data required for dust management of the site.
- 9 The consent holder shall carry out its activities in accordance with the Dust Management Plan at all times.

Advice Note: For the purpose of this consent, sensitive receptor means:

- a) Residential dwellings and associated private property, including the area within 20m of the façade of an occupied dwelling;

Commented [DVK2]: DVK supports the use of automated dust suppression (i.e. fixed sprinkler systems, etc). DVK considers that the use of such systems should be included as a backup measure in the DMP. The other experts agree with this in principle.

Commented [PS3R2]: Including water cannons

- b) Public roads;
- c) Areas of significant indigenous vegetation and significant habitats of indigenous fauna; and
- d) Commercially important or sensitive plants, crops or farming systems

Trigger Levels and Dust Mitigation

Trigger Levels

- 10 Quarry activities (except dust suppression measures) within 250 metres of a sensitive receptor location must not be undertaken when:
 - (a) Wind speed reaches or exceeds 7 m/s (~~1-hour~~^{10 minute} average); and
 - (b) Quarry activities would be directly upwind of a sensitive receptor (10-minute average wind direction).
 - (c) Less than 1 mm of rain has fallen during the preceding 12 hours.
- 11 The trigger concentration which indicates the potential for excessive quarry derived dust at or beyond the site boundary is a real time PM₁₀ concentration of ≥ 150 micrograms per cubic metre, as a rolling 1-hour average, which is updated every ten minutes.
- 12 If at any time, including outside normal operating hours, visible dust is blowing beyond the site boundary or if the particulate matter monitoring trigger in Condition 1~~10~~ is breached the Consent Holder must:
 - (a) Cease all quarry activities except dust suppression measures and heavy vehicle movements along the site access road;
 - (b) Continue all dust suppression activities including but not limited to the immediate watering of both active and inactive exposed surfaces;
 - (c) Investigate possible sources of the dust;
 - (d) Only resume quarry activities (other than dust suppression) once there is no longer visible dust blowing beyond the site boundaries and when the monitoring trigger in Condition 9 is no longer being breached; and
 - (e) Notify the Consent Authority as soon as practicable, detailing its cause and the dust suppression actions undertaken.

(e) Advice note: The site access road is the road between the main entrance and the product processing and sales area.
- 13 If the investigation required under condition 1~~21~~(c) determines the source of dust is localised to the excavation area only and is only impacting on areas downwind of this source, then activities within the central processing area, including sales of product can continue. This is contingent on all activities within the existing processing and load out area to be not causing visible dust blowing beyond the site boundary and their downwind real time PM₁₀ monitors not reaching or exceeding the trigger in condition 1~~10~~.
- 14 The consent holder shall submit a report by a Suitably Qualified and Experienced Practitioner (SQEP) to confirm that trigger levels set in Conditions 10 and 11 are sufficiently protective of adverse effects of dust discharges. The report shall contain data from two early summer/late autumn periods (1 October to end of May) and be submitted to Otago Regional Council [insert contact details] prior to 31 August 2023.

Mitigation Measures

- 15 The Consent Holder must take all practicable measures to minimise the discharge of dust from quarry activities, including but not limited to:

Commented [DVK4]: The experts agree that the plants in the DOC reserve have a lower sensitivity to dust discharged from the site. Therefore for the purposes of this consent it is proposed that this be removed from the definition of 'sensitive receptor'.

Commented [DVK5]: DVK considers that there should be a 10 minute average alert trigger level (set at 150 micrograms per cubic metre) which will be used by site to investigate the dust source and begin to instigate mitigation measures. This alert alarm will enable site staff to more quickly respond to a potential dust event such that actions can be taken to prevent stop work conditions. This eliminates the lag time which might occur when being reliant on a 1 hour rolling average.

The other experts support the use of an alert trigger.

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Commented [PS6]: Can I suggest that this review also takes into consideration feedback provided by adjacent landowners, regarding any dust nuisance events/effects.

Commented [DVK7]: DVK considers that whilst it is appropriate for the applicant to review the monitoring trigger levels within the first two years, this will likely only be during works in the existing quarry only, and possibly not at the peak extraction and processing rates proposed. DVK considers that a follow up SQEP review of the monitoring triggers should be conducted once works begin within the expansion area (likely to be ~10 years away). The other experts agree with this in principle.

DVK also considers that the SQEP review should also review whether or not the PM10 triggers are adequately mitigating off-site effects or if TSP or dust deposition monitoring should be included.

The experts also agree that it would be appropriate to have a follow up condition which outlines the actions to be taken in the event that the SQEP review identifies that the trigger levels are not appropriate. We note that this was raised by Ms Irvine. We think that a suitable condition to this effect should be proposed by the applicant's legal team. It may also be applicable to have a follow up SQEP review once the triggers are changed.

Commented [DVK8]: There are a number of items in this list which the experts consider should be stand alone conditions and not to be implemented only if they are "practicable". These are identified below.

- (a) Placing clean reject gravel over extraction areas if they are not being actively used by the consent holder, areas where clean reject gravel cannot be placed will be stabilised using polymers;
- (b) Assessing weather and ground conditions (wind and dryness) at the start of each day and ensure that applicable dust mitigation measures and methods are ready for use prior to commencing quarry activities;
- (c) Taking wind direction and speed into account in planning quarry activities to minimise the risk of dust dispersion towards any residential dwellings that are within 250 metres of the site boundary;
- (d) Water suppression such as using water carts or fixed sprinklers will be applied as required to dampen down disturbed areas and stockpiles. This must occur during dry weather, irrespective of wind speed;
- (e) Pre-dampening topsoil and overburden with a water cart or sprinklers prior to its extraction and removal.
- (f) Constructing and maintaining unsealed internal haul roads so that their surfaces consist of a crushed clean aggregate layer that is free of potholes;
- (g) Minimising drop heights when loading trucks and when moving material;
- (h) Carrying out land stripping and land rehabilitation shall be carried out during winter months when ground conditions are damp and winds are below 7 m/s (10 minute average);
- (i) Operating fixed and mobile crushing plant in conjunction with water dust suppression (either sprays or high-pressure fogging system) as necessary to avoid the dust trigger level, as specified in Condition 15, being reached or exceeded;
- (j) Undertaking routine onsite and offsite inspections of visible dust emissions and deposited dust throughout each day of quarry activities and electronically logging findings and any dust suppression actions, and to make the results of the inspections available to the Consent Authority when requested;
- (k) Maintaining an adequate supply of water and equipment on site for the purpose of dust suppression at all times;
- (l) Imposing a speed restriction on all internal haul and access roads to 30 km/hr;
- (m) Sealing the first 125m of the access road from the entrance off Luggate-Cromwell Highway to the site;
- (n) The haul road in the expansion area (Lot 3 DP 301379) shall be centrally located;
- (o) The height of fine aggregate stockpiles shall be maintained below the height of site perimeter bunds/natural ground level;
- (p) No stockpiling of material shall occur within the expansion area.
- (q) Application of water via watercart or fixed irrigation of dust suppression water onto any section of the external access road shall only be used as a contingency/back up measure.
- (r) Fixed and mobile crushing and screening plant shall be located in the areas identified on [insert plan reference];

Meteorological monitoring

- 16 Prior to exercising this consent, the Consent Holder shall install a meteorological monitoring station at the location described in the DMP. The meteorological monitoring station shall be capable of continuously monitoring:
- (a) Wind speed and direction at a height of a minimum of 6 m above the natural ground level;
 - (b) Relative humidity; and
 - (c) Temperature.
- 17 The meteorological monitoring instruments shall:

Commented [PS9]: Should the batter slopes also be included here?

Commented [DVK10]: Should be a standalone condition

Commented [DVK11]: Standalone condition

Commented [DVK12]: Standalone condition

Commented [DVK13]: Standalone condition

Commented [DVK14]: The experts discussed this at conferencing and these amendments are agreed.

Commented [DVK15]: We agree that this figure needs to be provided and reviewed by the experts. The experts consider that the area should be drawn around the existing product processing area and crusher. The applicant is to supply this figure for review.

Commented [DVK16]: RC suggested this and it was agreed by the other experts. It will help inform any potential blips in the dust monitoring data which may be associated to high humidity.

Commented [PS17R16]: PS, Agrees

- (a) Measure wind speed as 1-minute scalar averages with maximum resolution of 0.1 metres per second (m/s), have an accuracy of at least within +/- 0.2 m/s, and a stall speed no greater than 0.5 m/s;
 - (b) Measure wind direction as 1-minute vector averages with maximum resolution of 1.0 degree and accuracy of at least within +/- 1.0 degree, and a stall speed no greater than 0.5 m/s;
 - (c) Measure screened temperature with accuracy of +/- 0.5 degree;
 - (d) Measure relative humidity with an accuracy of +/- 1%;
 - (e) Located on the subject property in accordance with AS/NZS 3580:14-2014 (Methods for sampling and analysis of ambient air – Part 14 Meteorological monitoring for ambient air quality monitoring applications). If the monitoring station cannot be located in accordance with AS/NZS 3580:14-2014 an alternative location shall be agreed in writing with the Consent Authority;
 - (f) Maintain a data and time stamped electronic record for at least 36 months of meteorological monitoring results, recorded as rolling 10-minute averages, which are updated every one-minute in real-time.
 - (g) An alarm to the Quarry Manager (for example via mobile phone) must be provided if the rolling average wind speed and downwind trigger levels in Condition 109 are reached or exceeded.
 - (h) Maintained and calibrated in accordance with the manufacturer's specifications.
- 18 All meteorological monitoring data shall be made available to the Consent Authority on request.
- Particulate Matter Monitoring**
- 19 Prior to exercising of this consent, the consent holder shall operate and maintain one permanent real-time dust management monitor for continuous monitoring of ambient 10-minute average PM₁₀ concentrations, which is installed and operated at a fixed location at the existing quarry's southwest boundary and in accordance with the DMP.
- Advice Note: The permanently located real-time dust management monitor shall be an accepted method for general dust management/monitoring purposes, and does not need to be a certified US EPA, or National Environmental Standards for Air Quality (NESAAQ) compliant method.*
- 20 The permanent monitor shall be installed, operated, maintained and calibrated in accordance with the AS/NZS 3580.12.1:2015 *Methods for sampling and analysis of ambient air - Determination of light scattering - Integrating nephelometer method*, or else an equivalent, or superior standard which is approved by the Consent Authority;
- 21 Prior to the exercising of this consent, the consent holder shall operate and maintain at least two mobile real-time dust management monitors for continuous monitoring of ambient ten-minute average PM₁₀ concentrations, whose location changes for different stages of the quarry development and in accordance with the DMP.
- 22 The mobile real-time dust management monitors can be equivalent to that used for the permanently located dust monitor, or else be a lower cost method, on the basis that this can be effectively calibrated against the permanent dust monitor.
- 23 The two mobile dust monitors shall be positioned at different site boundary locations, such that real-time dust monitoring is undertaken at locations, which are between active excavation and central processing areas and downwind sensitive receptor locations, when the latter are within 250 m of the dust source.
- 24 Other general requirement for all three dust monitors includes the following:

Commented [PS18]: My preference would be for a BAM method for the fixed monitor. I don't have a copy of the light scattering standard, however, I would assume that the method would require validation against a reference method eperiodically - so might end up being more cost effective to use something like an E-BAM.

Commented [PS19]: There is nothing in here regarding ongoing calibration of the low-cost monitors. I'm not too sure on an appropriate method, but note MCERT Certified Ambient Particulate Monitors have the following calibration requirements for quantitative measurements:

Nothing too onerous - two weeks of co-location which allows 12 months of independent monitoring.

For quantitative measurements

Providing measurement data with the uncertainty defined for indicative instruments ($\pm 50\%$), as specified by the Air Quality Directive (2008). This can be achieved on condition that each instrument used for measurement has been calibrated on the specific site where monitoring is taking place against a standard reference method for a period of two weeks and the resulting slope and intercept have been used for instrument calibration. Using non-standard filters and procedures for this purpose is not acceptable. To maintain the validity of data this calibration has to be repeated at least every twelve months or when the instrument is moved to a different site. Consistent results of the calibration may lead to less frequent repetition of the calibration process, in agreement with a competent authority, such as the Environment Agency or other Environmental regulator.

- (a) Sited in general accordance with AS/NZS 3580.1.1:2016 Methods for sampling and analysis of air - Guide to siting air monitoring equipment;
 - (b) Have a GPS location service (or similar technology) which enables their locations to be remotely monitored and recorded.
 - (c) Able to provide and record the results continuously using an electronic data logging system with an averaging time for each parameter of not more than one minutes;
 - (d) Able to record monitoring results in real-time as rolling 10-minute averages in an appropriate electronic format;
 - (e) Fitted with an alarm system that is able to send warnings and alerts to the Quarry Manager or other nominated person; and
 - (f) Maintained in accordance with the manufacturer's specifications.
- (f)(g) Verified monitoring particulate, meteorological and video data shall be made available to adjacent landowners upon request.

Bund formation

- 25 When constructing the bunds, the following controls apply:
- (a) ~~Wherever possible~~ The the bunds shall be constructed during winter months (1st May to 1st September);
 - (b) Maintain a buffer distance of 250 m when wind speeds are above 7 m/s (10 minute average) in a direction towards the nearest sensitive locations;
 - (c) Material to be excavated must be thoroughly wetted using a water cart, if not already damp, ahead of excavation and wetted thoroughly thereafter;
 - (d) Wind monitoring must be carried out and dust generating activities shall cease when the wind is blowing towards sensitive locations and the wind speeds exceed 7 m/s (hourly 10 minute average) in accordance with Condition 109;
 - (e) Vegetated cover shall be established as soon as practicable and maintained to ensure healthy cover during dry months.

Commented [DVK20]: It was mentioned that the land use consent required mulch. If so it is appropriate to mirror this here.

Complaints Register

- 26 The Consent Holder shall maintain a Complaints Register for any complaints received. The Complaints Register must include:
- (a) The date and time the complaint was received;
 - (b) The nature and location of where the complaint has originated, if provided;
 - (c) A summary of the complaint;
 - (d) Particulate matter and wind conditions at the time the when the dust was observed by the complainant; and
 - (e) Any corrective action undertaken by the Consent Holder to avoid, remedy or mitigate the issue raised.
 - (f) Any amendments made to the Dust Management Plan in response to the complaint(s).

27 The Complaints Register must be provided to the Consent Authority on request.

Commented [PS21]: Could I also suggest a condition that requires the complainant to be informed of the outcomes of any investigation?

Annual Report

- 28 On the annual anniversary of this consent the consent holder shall provide a report to the Consent Authority to include the following:
- (a) The number of occasions that the particulate monitors recorded a breach of the trigger level in condition 110.
 - (b) Complaints Records for the preceding 12 months.
 - (c) Maintenance and calibration records for the particulate monitors.
 - (d) Any amendments made to the Dust Management Plan.

Review

- 29 The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within 3 months of each anniversary of the commencement of this consent for the purpose of:
- (a) To deal with any adverse effect on the environment which may arise from the exercise of the consent that was not foreseen at the time of granting of the consent, and which is therefore more appropriate to deal with at a later stage; and/or
 - (b) To require the Consent Holder to adopt the best practicable option to reduce any adverse effects on the environment resulting from the activity; and/or
 - (c) Ensuring the conditions of this consent are consistent with any National Environmental Standard or National Planning Standard.

30 There was also discussion about a number of additional consent conditions which could/should be considered by the applicant. These are as follows:

DR suggests a BPO condition as follows:

- (a) Prior to commencing operations in the expansion area the consent holder shall undertake a Best Practicable Option (BPO) evaluation for installing and operating a conveyor to transport pit run material from the expansion area to the Central Processing Area (CPA). The report shall be subject to review by a suitably qualified and experienced practitioner (SQEP).

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The BPO evaluation report shall be provided to the council six months prior to operations commencing in the expansion area. Depending on the outcomes of the report the council may initiate a review under Section 128 of the RMA to require the consent holder to adopt the BPO.

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DVK agrees with this BPO condition and that the proposed wording is appropriate. However, he does not that his recommendations regarding works within 100m of a dwelling requiring the use of conveyors is in addition to this condition.

RC and PS are supporting of the BPO condition as worded by DR.

DVK considers that there should be a requirement for the applicant to install continuous video monitoring of the site. The other experts support this, although Mr Cudmore considers this is something the application should have discretion to consider the merits, where to place such devices and extent of image archiving for future review. Mr Cudmore also considers use of this tool in an efficient manner, is likely to be in the applicants interest. DVK suggests that following wording for the condition:

- (b) The consent holder shall install and maintain video cameras at locations which provide a clear view of the site activities (i.e. on the boundary bunds, looking in). Data collected by the video cameras shall be recorded and kept for a minimum period of six months and supplied to Otago Regional Council on request.

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Commented [DVK22]: Mr Cudmore considers the following:

Regarding the set backs from R6 and the storage facility I reiterate my view that the available buffers are sufficient to enable the quarry operator to avoid adverse dust impacts at R6 dwelling or the Clarke storage shed - the latter I consider not to be as sensitive as a residential dwelling to dust exposure (either short term or chronic exposures over time).

DR considers that as for the Clark residence, there should be a consent condition which requires a 50m setback distance within which no extraction works are to occur, from the Clark storage facility and the consented build platform (identified as R6 in Mr Cudmore's evidence). This recommendation is in her supplementary statement of evidence.

DVK agrees with DR that a 50 m setback distance should be applied to the Clark residence, storage facility and the consented build platform (R6). In addition to this, DVK considers that there should be a condition which restricts the applicant from undertaking quarrying activities within the expansion area within 100 m of adjacent cropping activities during the times of year when these crops are sensitive to dust discharges (as has been defined by the horticulture experts). The applicant is to schedule works within these zones outside of these sensitive times of year. DVK considers that this is likely to be practicable.

Commented [PS23]: Spraying occurs Late August to March. Flowering Last Week September to Last week October

DVK also considers that for extraction works in the expansion area which are occurring within 100 m of a dwelling (this is the area between 50 m and 100m from the Clark and R6 dwelling (once built)) should be undertaken using a conveyor. This will restrict vehicle movements within this buffer zone (100m from a dwelling) to essentially one loader/excavator and eliminate the need for haul trucks in this area. The conveyor will only need to convey material beyond the 100m setback and therefore could be a mobile conveyor. Note that this requirement would be voided if the BPO condition required conveyors to be installed regardless.

PS considers that there should be a 150m setback from all sensitive receptors and that there should be a condition to this effect if consent is granted.

1.2

(e)

Commented [DVK24]: RC considers:
I DVK's idea re the mobile conveyor – but rather they are required to consider this as part of the BPO review prior to operating in the expansion area.

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