

**BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY WAIPA
DISTRICT COUNCIL**

IN THE MATTER of the Resource Management Act 1991 (Act)

AND

IN THE MATTER of an application for resource consent under section 88
of the Act for the establishment and operation of a sand
quarry and cleanfill operation located at 928 Kaipaki
Road, Cambridge

BETWEEN **SHAW'S PROPERTY HOLDINGS LIMITED**

Applicant

AND **WAIPA DISTRICT COUNCIL**

Consent Authority

**STATEMENT OF EVIDENCE OF CAMERON JAMES RODERICK FOR THE
APPLICANT**

(Quarry Operational Management)

Dated: 6 November 2020

INTRODUCTION

1. My full name is Cameron James Roderick.
2. I am currently a director at Curin Contractors Limited ("Curin Contractors"). Curin Contractors is a locally owned and operated business that has been providing residential, farming, and commercial clients with professional earthworks in the Waikato and Bay of Plenty since 1996. At Curin Contractors we pride ourselves on our ability to work with our clients and the community to ensure minimal disruption to the environment whilst providing fit for purpose services.
3. I have over 15 years' experience in civil construction and have worked in the industry in both New Zealand and the United Kingdom. I hold Diplomas in Business, ICAM Investigation and Health and Safety Management. I have extensive experience in managing a range of large- and small-scale projects within high environmental areas. Most of the projects I manage are subject to resource consent requirements, including management plans.
4. I have been the project manager for over 35 bridge construction projects in New Zealand. I have also been the project manager for the construction of over 10 stock underpasses and 15 culvert installations. Recently, I was the Manager for Civil Works for Transpower New Zealand's Manukau Harbour Pylon upgrade project. This project had a number of complex and challenging health and safety elements to it as we were managing the use of helicopters, concrete and barges within large sea swells. We received Transpower New Zealand's highest health, safety and environment award for the project in 2016.
5. Curin Contractors will be contracted by Shaw's Property Holdings Limited ("Shaw's" or "the Applicant") to operate the Kaipaki Road quarry if it proceeds. I am going to be responsible for managing the operation and associated site staff.

6. I have been retained by the Applicant to prepare a statement of evidence in support of its application for resource consent approval from Waipa District Council (“WDC”) and Waikato Regional Council (“WRC”) to establish and operate a proposed Sand Quarry and Cleanfill operation (“Sand Quarry”), located at 928 Kaipaki Road, Leamington, Cambridge (“Application”).
7. The scope of my evidence will cover:
 - (a) A brief overview of the local sand market;
 - (b) An overview of the proposed activity, considering, from my own experience:
 - (i) The key components of the proposed activity;
 - (ii) The processes associated with sand extraction;
 - (iii) The processes associated with cleanfilling.
 - (c) An overview of how the various effects associated with the proposed activity will be managed from an “on the ground” practical perspective.
8. I am familiar with the Application site and have visited the site on many occasions.

CONTEXT – THE LOCAL SAND MARKET

9. In my opinion the gravel and sand quarrying market in the wider Waikato Region is diminishing. Several the existing quarries have closed or have very limited raw stock. For example:
 - (a) Porritt Sand Quarry on Hooker Road in Tamahere, Hamilton has closed;

- (b) Tamahere Quarry – Winstone Aggregates has very limited raw pit sand stock;
 - (c) Revital Aggregates in Cambridge West only has seasonal sand for construction (i.e. wet in the winter and dry in the summer which is not desirable for the compaction levels required for building platforms); and
 - (d) Highgate Trust in Cambridge East also has limited access and quantities of sand available.
10. Companies wishing to source large quantities of sand stock are currently having to seek supplies from other regions.
11. The site for the Proposed Sand Quarry is located between Hamilton and Cambridge urban centres and is also relatively close to Te Awamutu. In my opinion the site is ideally located to help meet demand generated by local growth and development while minimising cartage distances and associated haulage costs. It will provide a reliable and closer sand product option for the local market.

Sand Quality

12. I have seen and handled samples of sand on the Proposed Sand Quarry site. In my opinion, it is a very high-quality pit sand. It is coarse with some pebble which is the desired make up content for building foundation construction. The sand from the site is also clean and will be damp when extracted which in turn minimises the potential for windblown fines/dust. I discuss this further in my evidence when considering the potential adverse effects of dust from the site.

THE APPLICATION – PROPOSED ACTIVITY FOR A SAND QUARRY AND CLEANFILL OPERATION

The purpose and key components of the proposed activity

13. The Application seeks resource consents for the operation of a sand quarry and cleanfill operation at 928 Kaipaki Road, Cambridge. The primary purpose of the quarry is to extract sand from the ground for use in building and roading construction. As a director at Curin Contractors, I am familiar with the sand products that will be produced for use in building and roading construction.
14. The sand extraction is proposed to be undertaken in stages in order to minimise the potential visual and amenity effects, and effects from dust, erosion and sediment run off. As such, the Application limits the area of construction activities to a total area of 3 hectares (for both sand extraction and cleanfill).
15. There are two key components of the proposed activity, the first being the sand extraction and the second being the receipt of cleanfill for compaction and rehabilitation of the disturbed extraction areas. The two components work together and, apart from the initial pit construction phase, will always be operating contemporaneously on site.

Sand extraction

16. The sand extraction process involves the use of heavy machinery. There are a number of steps to the process before sand products are ready for sale to the market. As stated above, the excavation process is to occur in stages. This means that the below processes will be occurring at various and different times throughout the Sand Quarry's operational lifetime.
17. Firstly, the existing vegetation needs to be removed. Typically, existing vegetation is removed using bulldozers, excavators and trucks. For this site, grass and topsoil will be intermittently and progressively stripped using a bulldozer. All internally located trees will remain in place for as

long as possible. However, they will eventually be felled by an arborist prior to topsoil removal in those areas (as per the staging plan). Felled trees will then be cut and carted for firewood.

18. After the existing vegetation is removed from the relevant portion of the site, the topsoil and organic materials will be stripped. This requires the use of bulldozers and/or excavators and trucks. The topsoil and organic materials will, in this case, be stored on site, and some used for the construction of bunds for landscaping, noise control and erosion and sediment control.
19. The land is then available for sand extraction. Excavators, trucks and/or loaders are used to excavate material to approximately 7m depth. In some circumstances stockpiles of sand may be constructed within the quarry area, however, to avoid double handling of material, most excavated material will be loaded directly onto customer trucks parked within the quarry area. From there, these trucks transport the sand to construction sites without the need for any processing. It is inevitable that some of the excavated material will be unsuitable for this type of direct use. I understand that the unsuitable material will be added to the cleanfill to supplement landscaping/rehabilitation efforts.

Cleanfill management

20. The Application also proposes to receive cleanfill as part of its quarry operations. Cleanfill is typically natural soils such as clay, soil and rock. It can include some manufactured materials i.e. concrete, bricks, tiles or any similar materials that do not produce leachate. Trucks will arrive at the site to unload cleanfill which will then be spread and compacted into the excavated areas using bulldozers or excavators.
21. The compaction of the cleanfill that is spread into the excavated areas is important, as the compaction process ensures that the cleanfill that fills the excavated site is at the same in-situ density as the original material

prior to excavation. To achieve this, cleanfill is placed in the excavated site in layers with a depth of approximately 300mm and then compacted.

22. Cleanfill is defined in accordance with the WasteMINZ Technical Guidelines for Disposal to Land. These Guidelines provide the technical guidance for the final, or more than short term deposit of clean and managed fill materials onto land. In this case, the site is defined as a Class 5 landfill. As a Class 5 landfill, the waste acceptance criteria is the principal control on contaminant discharges to the environment. In addition, visual monitoring of cleanfilling process, as well as random load inspections minimise the risk of inappropriate constituents being compacted into an excavated area. The cleanfill discharge consent granted by WRC prescribe these criteria along with the required cleanfill monitoring, sampling and testing regimes.

MANAGEMENT OF EFFECTS

23. As with any quarries and open batter surfaces, there will be adverse effects associated with the activities occurring on site. The excavated area may have adverse visual and amenity effects. There also may be effects from dust, erosion and sediment run off, traffic, and noise associated with the activities occurring on site.
24. In my experience, these effects can be easily and well mitigated and managed by having well trained staff on site. In my opinion, the mitigation and management of the potential effects associated with the Sand Quarry as set out in the Application demonstrates good practice and can be easily implemented by both management and staff at the quarry. It is critical that mitigation and management processes are easily implemented 'on the ground', otherwise, from my experience, they do not get implemented satisfactorily.
25. Curin Contractors require all staff to be inducted to the company as well as undertake site specific inductions before working on individual work

sites. All staff are also required to undertake annual competency assessments. All machinery operators will hold relevant and current licences and tickets and monitoring will be undertaken to maintain their performance. With respect to the Sand Quarry, a key part of the site specific induction for staff will be to ensure they understand the key requirements of the resource consents, the Quarry Management Plan and associated operational processes, monitoring procedures and contingency plan implementation steps for minimising or addressing effects such as dust or ensuring cleanfill acceptance criteria are met.

Quarry Management Plan

26. Attached to the Application at Appendix D is a Draft Quarry and Cleanfill Management Plan ("QMP"). The site is proposed to operate in accordance with the comprehensive QMP. I am familiar with the contents of the draft QMP.
27. The QMP sets out in detail the processes to mitigate and manage potential effects that are associated with the sand quarry. In my opinion, the QMP is clear and contains management processes that will be easily implemented. The QMP covers the following operational matters:
 - (a) Site responsibilities and contacts;
 - (b) Health and safety;
 - (c) Staging procedures and plans;
 - (d) Sand extraction procedures;
 - (e) Cleanfill management procedures;
 - (f) Accidental discovery protocols;
 - (g) Erosion and sediment control procedures and plans;

- (h) Dust Management procedures;
 - (i) Traffic management procedures;
 - (j) Complaints procedures;
 - (k) Rehabilitation processes;
 - (l) Reporting and record keeping requirements; and
 - (m) Plan review procedures.
28. The next section of my evidence addresses the potential adverse effects associated with the sand quarry and discusses the management processes as set out in the QMP to mitigate and manage those potential effects.

Visual and amenity effects

29. The sand extraction is proposed to be undertaken in stages in order to minimise the potential visual and amenity effects, and effects from dust, erosion and sediment run off. The Application and QMP limits the area of construction activities to a total area of 3 hectares (for both sand extraction and cleanfill). As the quarry expands, the mined and disturbed areas will be rehabilitated with the placement of cleanfill material to reinstate the previous/existing ground levels. This will then be topsoiled and re-grassed and/or revegetated. In my experience, since the sand is to be used as construction site foundation sand where it replaces excavated subsoil materials from foundation areas, there will be a near 1:1 ratio of cleanfill to sand. However, in the unlikely event that cleanfill volumes lag behind sand extraction volumes, it may be that temporary stabilisation of some cleanfill areas is required below previous/existing ground levels in order to maintain the 3 hectare quarry area limit. This simply means that these temporarily stabilised areas will need to be revisited for full rehabilitation at some point when cleanfill inflow volumes allow.

30. In my opinion, the rehabilitation and landscape works will be easily implemented as the staging of open quarry areas means that the amount of rehabilitation, and therefore the amount of cleanfill required to infill the disturbed areas will be undertaken in achievable steps.

Dust management

31. Both the sand extraction and cleanfill operations have the potential to generate dust. There are several factors which can heighten the dust generated from activities, such as wind, traffic movements and dry weather. I have previously set out the processes associated with sand extraction and cleanfilling compaction and note that majority of these processes have the potential to generate dust. I have previously described that the sand from the site will be clean and damp when extracted which minimises the potential for windblown fines/dust.
32. The QMP proposes to manage and control dust on site via both site design and operational principles. The design principles proposed and relevant to this Application include:
- (a) Minimising the open quarry area to no more than 3 hectares;
 - (b) Securing a reliable supply of water from a bore recently constructed on the site;
 - (c) The use of an onsite water cart for dust suppression;
 - (d) The use of a truck wheel wash for all trucks exiting the site;
 - (e) Retaining and utilising existing shelterbelt vegetation along property boundaries; and
 - (f) Sealing of the site entrance and first 300m of the site access road and locating the access way parallel to the existing shelterbelt.

33. The WRC consent also requires the implementation of a specific Dust Management Plan which incorporates these design principles and management processes while also requiring dust monitoring near the closest submitter's property.
34. In regards to operational principles in the QMP, these include:
 - (a) Staff training and awareness of risk factors and mitigation measures;
 - (b) Visual monitoring;
 - (c) Enforcement of on-site speed restrictions;
 - (d) Wheel wash to minimise tracking of sediment by outbound trucks; and
 - (e) Water spray and water cart use to dampen dust in dry/windy conditions.
35. A bore with a recently granted groundwater take consent for up to 205 m³ per day will be the primary mitigation mechanism for controlling dust on site. Accordingly, lack of water is simply not an issue for the site.
36. Staff training and familiarity with the Dust Management Plan will be necessary to ensure that staff can identify specific dust risk factors and act accordingly. Typically, activities that generate higher dust levels are undertaken in the morning when wind is generally lower. Soil conditions and weather will also need to be monitored by staff.
37. In some circumstances stockpiles of sand may be constructed within the quarry area which can cause a source of dust. To mitigate and control the effects, stockpiles will be oriented to maximise wind sheltering where possible, and staff on the ground will be trained to ensure that the stockpiles exist for the shortest possible time. Other mitigation includes

positioning stockpiles away from property boundaries, reducing the height and slope of the piles, and ensuring the surfaces remain damp to reduce dust emissions.

38. These management methods are common in the quarry industry and are generally accepted as sufficient to minimise and mitigate dust generated from excavation and cleanfill activities.

Traffic and Access

39. The proposed consent conditions require records of truck movements to be kept. These also require that the maximum number of heavy vehicle movements generated by the activity shall not exceed:

- (a) Daily maximum of 132 HCV movements / day; and
- (b) Daily average of 106 HCV movements / day (calculated over a one-month period).

40. In my experience, the most effective and efficient method of recording truck movements is to equip loading trucks with an electronic device attached to the loading arm to record loads. Digger drivers typically also have a tablet to record clients and load numbers. This system keeps a running daily total and can be programmed to provide warnings to staff of load number/ HCV limits approaching.

41. To ensure road safety and traffic related impacts and risks are appropriately managed, and to achieve compliance with traffic related requirements of the consent, it will be important that customers visiting and using the Quarry are aware of these. In my experience, this can be achieved by the following:

- (a) Monitoring truck driver behaviour on site and issuing reminders and/or warnings in the event of unsafe practice or poor performance; and

- (b) Customer communication to heighten awareness of expectations and key consent requirements.

42. I record that as part of the quarry management we intend to send a letter to prospective site customers to ensure that they are aware of key expectations the Quarry and the local community and to ensure the Applicant achieves compliance with its resource consents and retains its wider community licence. This is a standard form letter that includes, but is not limited to:

- (a) Strict hours of operation;
- (b) Site entry and exit procedure (including wheel wash);
- (c) On site speed limits;
- (d) The cleanfill acceptance criteria;
- (e) Procedure for unloading and loading.

43. I have been advised that the QMP will be updated to include a copy of this standard form letter as an Appendix.

Noise

44. The QMP requires the machinery equipment to be operated and maintained in accordance with the manufacturer's specifications (as required by the QMP). Furthermore, I am advised that the noise expert for the Applicant has concluded that the noise mitigation as proposed will mean the noise from the site is reasonable.

45. Day to day operations as set out in the QMP are proposed to be constrained so that before any topsoil stripping occurs within 180 m of any dwelling without a bund in place, the written approval and/or planning permission should be obtained from that party. In addition,

before sand extraction can occur within the areas of constraint, an earth bund of 2.0 m (gradient 1:3) must be established.

46. From experience, communicating with nearby dwelling owners/occupants when works are to occur near their property is appropriate and desirable, and is proposed in this Application.

Erosion and sediment run off

47. Erosion and sediment run off is a key adverse effect of quarrying activities that needs to be mitigated and managed well. In my opinion, the QMP provides clear and satisfactory management processes for minimising erosion and sediment runoff. The overall management philosophy proposed is to utilise the sandy soils, sub-soils and the working quarry pit, and associated high soakage capabilities, as the primary destination for the majority of runoff generated from unstabilised surfaces on site.
48. The QMP proposes to control erosion and sediment run off by adopting the following practices:
- (a) Extract sand by excavating down, effectively creating an in-situ bund around the perimeter of the quarry works. The soakage capacity of the quarry pit, and the 3-hectare limitation on unstabilised ground surface area will ensure avoidance of any sediment discharge from active quarry / cleanfill areas to the Mangawhero Stream.
 - (b) To minimise the volume of stormwater entering the quarry pit, perimeter controls (diversion drains, silt fences and/or earth bunds) will be implemented to divert clean water away from work areas.
 - (c) Ensure that any hazardous substances (i.e. fuel, vehicle maintenance materials and areas) are located away from the gully edge.

- (d) Implement wheel wash procedures to ensure that vehicles to not deposit material out of the site and do not track sediment onto the road.

49. Based on my previous experiences, I consider that the above mitigation measures are straight forward to implement by staff on the ground.

Dated this 6th day of November 2020



Cameron James Roderick