



## Roydon Quarry Noise Management Plan

Rev. no	Description	Prepared by	Checked by	Reviewed by	Approved by
1	Draft for comment	MM			
2	For Council Certification	SE	RS	RS	SE
3	Council Amended for certification 10/3/2022	SE	SDC	SE	SE
	Certified 11/3/2022	SE	RM	SDC	SDC

Next review due – Nov 2022 (following quarry operations starting)

---

**TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION</b>	<b>3</b>
1.1	<i>Background</i>	3
1.2	<i>Document Purpose</i>	3
1.3	<i>Overarching Noise Management Philosophy</i>	3
1.4	<i>Environmental Policy</i>	3
<b>2.0</b>	<b>SITE CONTEXT AND OVERVIEW</b>	<b>3</b>
2.1	<i>Site Location</i>	4
2.2	<i>Site Character and Proposed Activities</i>	4
2.3	<i>Surrounding Site Character</i>	4
2.4	<i>Site Responsibility</i>	5
2.5	<i>Sources of noise effects</i>	5
2.6	<i>Factors that affect sound Transmission</i>	6
2.7	<i>Key mitigation to be applied</i>	6
<b>3.0</b>	<b>ASSURANCE</b>	Error! Bookmark not defined.
3.1	<i>Staff Training</i>	9
3.2	<i>Inspection and Maintenance</i>	9
3.3	<i>Environmental Auditing</i>	9
3.4	<i>Non-Conformances and Complaint Response</i>	9
<b>4.0</b>	<b>DOCUMENT REVIEW</b>	<b>10</b>

---

## 1 INTRODUCTION

### 1.1 Background

Fulton Hogan Limited (Fulton Hogan) is a leading infrastructure, construction, roadworks and aggregate supplier in New Zealand. Fulton Hogan currently has three fixed aggregate quarries located in the greater Christchurch area and began its operations in the Canterbury region over 50 years ago.

The Roydon Quarry site, located in Templeton, is proposed to be a long-term gravel resource with an estimated life of 40 years.

Fulton Hogan has been granted a Selwyn District Council Land Use Consent, RC185627, to establish and operate a alluvial gravel quarry at 220 Jones Road Templeton. This management plan is based on the expert evidence presented to the consent hearing by Jon Farren of Marshall Day Acoustics Limited.

### 1.2 Document Purpose

This Noise management Plan has been developed to address key aspects of the management of noise beyond the site boundary and contains the following elements:

- site context and overview;
- receiving environment;
- noise management;
- auditing and conformance; and
- document review.

### 1.3 Overarching Noise Management Philosophy

Noise is generated by the quarrying activity and can, if not adequately mitigated, affect local residents' quiet enjoyment of their environment.

The rural environment is not a quiet space and is affected by a number of natural and man-made noise; the aim of this management plan is to mitigate additional noise effects from the consented activity.

### 1.4 Environmental Policy

Fulton Hogan is serious about its environmental obligations and seeks ongoing improvement in its environmental performance through ISO 14001 certified environmental management system. Fulton Hogan's Environmental Policy is included as **Appendix 1**.

## 2 SITE CONTEXT AND OVERVIEW

---

## 2.1 Site Location

The site is located within a block of land bound by Curraghs Road, Dawsons Road, Maddisons Road, and Jones Road, and comprises an area of approximately 170 hectares, as shown on Figure 1. The site is located on the edge of the Selwyn District, with the opposite side of Dawsons Road being the western border of Christchurch City: the street addresses of the site are 107 Dawsons Road and 220 Jones Road.

## 2.2 Site Character and Proposed Activities

The site is an old farm and horse stud. Shelter belts exist along a number of the site boundaries including much of the northern boundary, part of the Dawsons Road boundary and along the entirety of the Curraghs Road boundary.

The development quarry will take place in a number of phases, comprising the following activities:

- Use of on-site material to create perimeter bunds, together with planting to establish boundary screening.
- Development of quarry including infrastructure such as site roading, processing plant and associated buildings
- Extraction of aggregate and
- Rehabilitation of worked out areas.

## 2.3 Surrounding Site Character

The surrounding area is generally rural in nature, although a number of indications of the Christchurch urban area are evident, including the site being within the noise contours associated with the Christchurch International Airport, and the construction of the Christchurch Southern Motorway extension. Templeton township lies approximately 700 m east of the site boundary.

The site is directly under the approach path for runway 02 of Christchurch Airport, eight kilometres to the runway threshold. While the aircraft engines are powered down during landing approach, there is a significant, but intermittent, contribution to then the local acoustic environment.

Rural activities within the immediate vicinity include farming (both intensive and pastoral), horse training facilities and some forestry. These rural land uses often have a dwelling associated with them, including to the north and west along Maddisons and Curraghs Road. On Maddisons Road there is a Samadhi Buddhist Vihara facility and the Weedons NZCMA (Caravan Park) is located some 270 m west of the site at 286 Jones Road.

---

The neighbouring land to the east, adjacent to Dawsons Road is owned by Christchurch City Council and is in pasture. Fulton Hogan understands that the Council's longer-term plans for this land may include playing fields, urban growth, greenspace and 60 ha proposed for a future cemetery. South of the site is a thin strip of berm between Jones Road and the Main South Line railway. To the south of the railway line, between Main South Road, is an industrial yard (Farm Chief, 10 Curraghs Road), a dwelling located at 1090 Main South Road and a small production woodlot.

### 3 NOISE CONTROLS

#### 3.1 Site Responsibility

The overall management of the site will be the responsibility of the Roydon Quarry Manager or delegated authority and will include:

- Ensuring compliance with relevant resource consents conditions;
- Communicating resource consent requirements to staff, contractors and all other relevant parties;
- Ensuring compliance with the NMP and all other associated documents;
- Investigating effectiveness of operating procedures and communicating if any changes need to be made;
- Implementation of inspection and maintenance activities;
- Holding records for any inspections and maintenance activities;
- Reviewing environmental incidents;
- Leading staff to ensure environmental responsibility is being practiced.

#### 3.2 Sources of noise effects

The key noise generating activities associated with the consented activity are:

- Topsoil removal and formation of perimeter bunds;
- Sound dominated by engine and track noise, from slow moving earth moving equipment;
- Road construction;
- Dominated by engine and track noise, excavation and truck loading and deposition of spoil;

- 
- Gravel extraction – whilst front-end loader engine noise is a key feature of this activity, it is unlikely to be particularly noticeable at the boundary of the site;
  - Crushing and screening (fixed and mobile) – the mechanical action of the crushing and screening plant and the sound of stones being processed on a continuous basis are the dominant noise sources. Whilst this noise will be noticeable at the site boundary, it will be at a relatively low-level and will generally be inaudible above passing cars, planes or trains;
  - Hardfill – hardfill being deposited from trucks onto the floor of the central processing area will be heard as a short duration rumble at a relatively low level. When being backfilled into the excavated pit, mechanical engine noise from trucks and loaders will dominate;
  - Transportation – engine noise from the front-end loader and quarry trucks are a key feature of this activity along with the noise from the placement of the first scoop of gravel into an empty truck. However, neither of these noise sources are likely to be particularly noticeable at the site boundary.
  - Vibration generated by gravel crushing and processing will be barely noticeable at the site boundary.

### 3.3 Factors that affect sound Transmission

Sound is transmitted from its source by wave propagation through air and soil; the speed and intensity is affected by sound frequency, medium density, wind speed and distance from source, the intensity reducing generally by inverse square of the distance to the source.

With respect to the local Roydon Quarry environment, the low altitude (~45 metres above sea level), and silt loam soils: noise transmission intensity is influenced by wind speed and direction, relative humidity and soil moisture content.

For a given noise generating activity, distance from source has the largest effect on the reduction of sound intensity.

### 3.4 Key mitigation to be applied

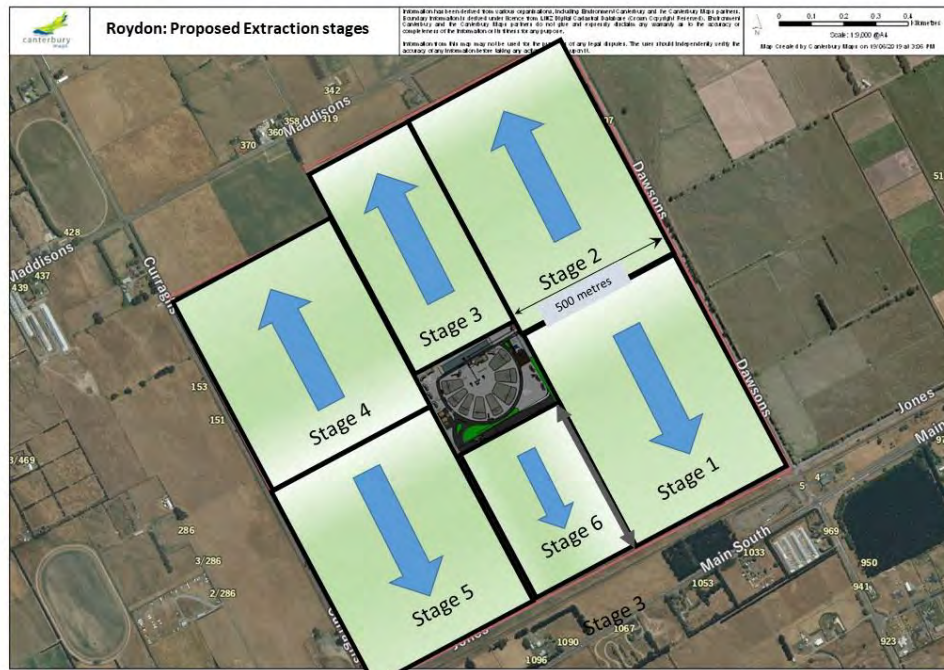
- **Operating hours:** Night time, public holidays and weekends are key times when there is increased sensitivity to noise effects. Consented operating hours are specified in RS185267 and as per table 1 :
- **Processing equipment location:** The Central Processing and Stockpiling Area (CPSA) and processing plant is located at least 500 metres from any site boundary.

- 
- **Haul Roads:** The main access road into and out of the site will be sealed to reduce road noise
  - **Engine breaking:** This is not allowed within the quarry site and adjacent areas as per the Code of Conduct in the TMRP.
  - **Truck Movements:** Heavy vehicle movements are not to exceed 1200 per day and not exceed 800 movements per day as a 60 day average. with no more than 30 movements per hour between 20:00 hr and 06:00 hrs on only 60 days per year.
  - **Quarry Entrance:** All vehicles will exit the site to the Southern Motorway roundabout as per the Code of Conduct in the TMRP.
  - **Outside normal works hours activity:** When after hours activities are planned, after 18:00 hrs and 0600 hrs the next day or works on Sundays or public holidays, residents within 500 metres of the proposed works will be notified, where ever possible, at least 24 hours of the activity commencing. The advice may be by either SMS test, e-mail or letterbox drop as is appropriate.

Table 1: Hours of quarry activities and other associated activities:

Hours	Duration	Range of Activities	Condition 57 Noise limits
6.00 am to 7.00 am	Monday to Saturday	Load out of trucks, site pre-start up including operational warm up of conveyors and machinery. Clean fill deposition.	45 dB LAeq and 70 dB LAmax
7:00 am to 6:00 pm	Monday to Saturday	Full range of quarry activities.	55 LAeq
6.00 pm to 8.00 pm	Monday to Saturday on 150 days per annum.	Full range of quarry activities with the exception of processing using mobile plant and backfilling.	50LAeq
8.00 pm to 10:00 pm.	Monday to Saturday on 30 nights per annum	Load out of trucks and truck movements, and ancillary activities such as operation of weighbridge and site offices and clean fill deposition.	45 dB LAeq and 70 dB LAmax
Sunday and public holidays	For up to 15 days per year	Truck movements - load out of aggregate and clean fill deposition.	55 LAeq

**Figure 1: Indicative Staging Plan**



**4 ASSURANCE**

**4.1 Staff Training**

The Quarry Manager will ensure that all staff and contractors on-site have been inducted to the requirements of this Spill Management Plan, and have undertaken any necessary training.

**4.2 Inspection and Maintenance**

The inspection and maintenance of the spill kits etc will be the responsibility of the Quarry Manager, with particular attention to ensuring all equipment is replaced after use or other consumption.

**4.3 Environmental Auditing**

The Roydon Quarry site will be audited annually against its resource consent requirements and associated management plans including the SMP, by the Fulton Hogan Environmental team. Formal compliance monitoring by SDC and Ecan will be at their instigation. Informal monitoring and checks will be conducted by the Roydon Quarry Manager or appropriate delegate, on an ongoing basis through the likes of Stay Safe Engagements or Spot Audits.

**4.4 Non-Conformances and Complaint Response**

All incidents including non-compliance with environmental controls, environmental incidents, complaints, hazards and near misses will be entered into the Fulton Hogan's

---

incident management system (CAMs – Case and Action Management Systems) to allow recording, tracking, investigated and closed off when dealt with appropriately.

As well as the standard details recorded in CAMS, for complaints it will be ensured that the following details are recorded

- Complainant details;
- Information about the incident as described by the complaint;
- Who received the complaint and how it was received;
- Weather conditions at the time of the complaint;
- Identification of the possible cause of the complaint following the investigation;
- Details of the corrective action taken at the time to resolve the incident;
- Details of the preventative actions to be taken to ensure the likelihood of such events occurring in the future are minimised.

The Quarry Manager will lead all responses to the complainant

A summary from CAMS will be provided at the CLG meetings.

## 5 DOCUMENT REVIEW

- Condition 63 of the SDC landuse consent requires an assessment of noise emissions at the quarry boundary within the first 12 months of Quarrying activity and when quarry excavation initially approaches the residential dwells at 151 Cuarraghs Road and 319 Madisons Road. The results of these surveys may require a review of the Noise Management Plan.
- Otherwise, although there is no fixed period for a review to occur, Fulton Hogan will review this document on a five yearly basis, or under the following circumstances:
  - In response to validated noise complaints;
  - For the purpose of improving the efficacy of noise management control measures at the site;
  - Consistent with the conditions of Canterbury Regional Council consent requirements.
  - Following significant environmental incidents;
  - At the completion of environmental audits