

**APPENDIX F**

# Draft Cleanfill Management Plan



# Roydon Quarry Cleanfill Management Plan

Proposed Roydon Quarry  
Templeton

*This page has been left blank intentionally*

## REPORT DETAILS

**Project Name:** Roydon Quarry Draft Cleanfill Management Plan

**Document Type:** Draft Cleanfill Management Plan

**Date:**

**Document Author:**

## AUTHORISATION FOR ISSUE

**Environmental Advisor**

Name:

Date:

**South Island Resources and  
Sustainability Manager**

Name:

Date:

*This page has been left blank intentionally*

**TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	Background .....	1
1.2	Cleanfill Management Plan Status .....	1
1.3	Environmental Policy.....	1
<b>2.0</b>	<b>SITE CONTEXT AND OVERVIEW.....</b>	<b>2</b>
2.1	Site Location .....	2
2.2	Surrounding Site Character .....	2
<b>3.0</b>	<b>SITE MANAGEMENT .....</b>	<b>4</b>
3.1	Owner and operator .....	4
3.2	Right of Access .....	4
3.3	Operating Hours.....	4
3.4	Staff Requirements .....	4
3.5	Training .....	4
3.6	Health and Safety.....	4
3.7	Regulatory Compliance.....	5
<b>4.0</b>	<b>DESIGN AND OPERATION .....</b>	<b>6</b>
4.1	Site Preparation .....	6
4.2	Signage .....	6
4.3	Screening .....	6
4.4	Fencing and Security .....	6
4.5	Traffic Management .....	6
4.6	Final Landform and Cover Requirements .....	7
4.7	Proposed Staging.....	7
<b>5.0</b>	<b>WASTE ACCEPTANCE .....</b>	<b>8</b>
5.1	Acceptable Cleanfill.....	8
5.2	Unacceptable Cleanfill Material .....	8
5.3	Testing Requirements .....	9
5.4	Waste Acceptance Controls.....	9
5.4.1	Method of Inspection .....	9
5.4.2	Suspect Material Indicated at Tip Area .....	10
5.5	Documenting and Record Keeping .....	10
<b>6.0</b>	<b>ENVIRONMENTAL CONTROLS AND MONITORING .....</b>	<b>11</b>
6.1	Spills.....	11
6.2	Dust.....	11
6.3	Noise .....	12
6.4	Sediment and Erosion Control .....	12
6.5	General Site Appearance and Management.....	12

<b>7.0</b>	<b>COMPLAINTS RESPONSE .....</b>	<b>13</b>
<b>8.0</b>	<b>DOCUMENT REVIEW .....</b>	<b>14</b>

#### **List of Tables**

Table 1: Certificates of Title .....	2
--------------------------------------	---

#### **List of Figures**

Figure 1: Roydon Quarry - Site Location .....	3
---	---

#### **List of Appendices**

Appendix 1: Environmental Policy	
----------------------------------	--

## 1.0 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 another long-term operation.

This Cleanfill Management Plan has been prepared in accordance with the Ministry for the Environment's 2002 document "A guide to the management of Cleanfills" (2002 MfE Guide) to set out practices that Fulton Hogan will apply to the cleanfilling operations at its "Royden Quarry" site at 220 Jones Road, Templeton, Christchurch (the site). The use of this land for cleanfilling is authorised by resource consent CRC **[insert consent number]** from Canterbury Regional Council (CRC) (granted on **[insert date]**) and resource consent **[insert Council reference]** from Selwyn District Council (SDC) (granted on **[insert date]**).

### 1.2 Cleanfill Management Plan Status

This management plan is a draft document prepared to accompany the resource consent application to CRC and SDC. It will be updated should resource consent for the activity be granted. (granted on **[insert date]**).

### 1.3 Environmental Policy

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



## 2.0 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 site is legally described in accordance with Table 1, below, and the street addresses of the site are 107 Dawsons Road and 220 Jones Road.

Table 1: Certificates of Title

Certificate of Title	Legal Description
CB20F/554	Rural Section 6475 and Rural Section 6324
CB291/71	Lot 1 Deposited Plan 4031
CB39/215	Rural Section 6342
815228	Section 7 Survey Office Plan 510345
815227	Rural Section 5381 and Section 6 Survey Office Plan 510345

### 2.2 Surrounding Site Character

The surrounding area is 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's respective boundary.

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 railway line. 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.





**LEGEND**

 Site boundary

**NOTES**

1. Aerial: LINZ and Eagle Technology, CC-BY-3.0-NZ.  
2. Map image: © OpenStreetMap (and) contributors, CC-BY-SA  
Sourced from the LINZ Data Service and licensed for re-use under the Creative Commons Attribution 3.0 New Zealand licence  
3. Schematic only, not to be interpreted as an engineering design or construction drawing.

**COPYRIGHT**

Information contained in this drawing is the copyright of Golder Associates (NZ) Ltd. Unauthorised use or reproduction of this plan either wholly or in part without written permission infringes copyright. © Golder Associates (NZ) Ltd.

0 200 400  
METRES

REFERENCE SCALE: 1:10,000 (at A3)

PROJECTION: NZGD 2000 New Zealand Transverse Mercator

CLIENT  
FULTON HOGAN LIMITED

PROJECT  
ROYDON QUARRY

TITLE  
**SITE LOCATION PLAN**

CONSULTANT	YYYY-MM-DD	NOVEMBER 2018
	PREPARED	RK
	REVIEW	KB
	APPROVED	KB

PROJECT NO. 1781870 REPORT 001 REV. 0

FIGURE 01

Path: K:\GIS\Projects\Dynamic\2017\4011781870\_RC\_Dawsons\_Road\MapDocuments\1781870-001-RP-F001-Rev0\_A3L\_GIS.mxd

25mm  
© THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN. THE SHEET SIZE HAS BEEN MODIFIED FROM A3



### 3.0 SITE MANAGEMENT

#### 3.1 Owner and operator

The overall management of site will be the responsibility of the Royden Quarry Manager or by delegated authority. Responsibilities include:

- Managing daily quarry operations – extraction and manufacturing of aggregates to supply orders.
- Ensuring compliance with the conditions of all resource consents pertaining to the site.
- Communicating resource consent requirements to staff, contractors and all other relevant parties.
- Records are kept of cleanfilling operations and regular inspections of material deposited at the site:

The Quarry Manager's contact details are:

[insert Quarry managers name here]

Fulton Hogan Limited

P O Box 16-064,

Hornby

Christchurch 8441

Phone: [insert number]

Email: [insert address]

#### 3.2 Right of Access

The delivery and acceptance of all material to be deposited will be subject to the inspection of the material by the cleanfill operator and under staff supervision. Outside of operating hours the site will be gated.

#### 3.3 Operating Hours

The proposed hours of operation are proposed to be the same as the quarry, which are 24 hours, however it is expected that Cleanfill will be received between 6 am (0700) to 6 pm (1800) Monday to Saturday and 7 am (0700) to 12 pm (1200) on Saturday.

#### 3.4 Staff Requirements

Staff are responsible for ensuring that the site is operated in accordance with all relevant consents, regulations and acts that apply to the works and the works site.

#### 3.5 Training

Staff are provided with specific training to be able to identify acceptable and unacceptable cleanfill materials and will ensure that the site is operated to meet all resource consent conditions.

Staff will also be trained in spill management procedures, and operators of noisy machinery shall be instructed and trained in noise minimisation techniques.

#### 3.6 Health and Safety

Health and Safety procedures on the site will be in accordance with Fulton Hogan's overall Health and Safety Procedures and Relevant Health and Safety Legislation.

### **3.7 Regulatory Compliance**

It is the responsibility of Fulton Hogan to ensure compliance at all times with all relevant consents, regulations and acts that apply to the works and the works site. This responsibility applies equally to Fulton Hogan's employees and other sub-contractors using the site, and also extends across health, safety, quality and environmental elements of all activities undertaken within the site.

## 4.0 DESIGN AND OPERATION

### 4.1 Site Preparation

The bulk of the site is proposed to be excavated to a depth of approximately 9 to 10 m below original ground level, with the exception of boundary setbacks containing bunds around the site's boundaries. Site preparation for the proposed quarrying activities will take into account cleanfilling requirements such as haul roads to the tipping area head and bunding.

Cleanfill, which complies with the 2002 MfE Guide and Canterbury Land and Water Regional Plan definition, will be brought to the site from suitable locations and will be placed on floor and pushed up to finish height by a loader. Fill will then be track-rolled to achieve greater compaction.

Visual inspections of the quality of the fill material coming to the site will assist in ensuring that the material is consistent with any resource consent requirements, and any unacceptable loads will be turned away from the site. This will take place by inspecting all material once it is placed at the fill tipping area. Should any unacceptable loads reach the tipping area and be unloaded, it will be removed from the site for transportation to landfill.

### 4.2 Signage

Warning notices that can be read from a distance of five metres shall be erected and maintained at the entrance to the cleanfill site. This notice shall state:

- The name of the site.
- The name of the quarry operator.
- The name and number for a 24-hour emergency contact.
- That groundwater in this area is vulnerable to contamination and is a source of drinking water.
- That only approved cleanfill material is accepted at the site.

### 4.3 Screening

Established and grassed bunding will exist around the quarry site boundary and will be retained until the completion of cleanfilling on the site. The bunding will be constructed prior to quarrying and cleanfilling activities occurring on the site. Planting will be established on the outer side of the bunds.

### 4.4 Fencing and Security

The site will be fully fenced, and signage will be erected stating that unauthorised access is prohibited. The Quarry will be locked outside of operating hours preventing access to the site and security cameras will be installed on site to monitor the site for any unauthorised access. On site buildings and offices will be alarmed and monitored to prevent unauthorised access.

### 4.5 Traffic Management

A dedicated heavy vehicle access to the site from Jones Road is proposed as a part of the application. Fulton Hogan intends to develop a new dedicated heavy vehicle access to the site from Jones Road. The proposed access point is to be located approximately 350 to 550 metres to the west of the existing Dawsons and Jones Road intersection.

#### 4.6 Final Landform and Cover Requirements

Cleanfill will be unloaded at the fill 'tipping area' prior to being spread across the cleanfill area by a loader. In wetter months, a bulldozer or tracked loader may be also be used. Fill will then be track-rolled to achieve greater compaction.

Cleanfill will form a in important component in enabling the creation of 3:1 batter slopes, leaving premium topsoil for final rehabilitation surfaces.

Extraction and cleanfilling and subsequent rehabilitation will operate one stage apart to enable rehabilitation to follow progressively and not hinder operational requirements.

The final finished floor level is still unknown at this stage but will not be above original ground level that predated quarrying.

Following completion of filling in an area, rehabilitation will take place. Rehabilitation primarily involves the spreading and contouring of fill materials and, imported topsoil and stored onsite material, stabilisation of quarry faces, and grassing of completed areas to create a free draining and stable landform.

Topsoil and subsoil materials which have been stored in bunds following site preparation will be used in the site rehabilitation by providing a final topsoil layer. Cleanfilling and subsequent rehabilitation activities at the site will be based on the following principles:

- Development of a free draining landform following completion of backfilling.
- Re-grassing by spreading stored topsoil and subsoil, and replanting with suitable grass species as soon as practicable to reduce erosion.
- Establishment of worked areas to a slope of no more than 1v:3h to reduce erosion and to leave the site in a safe and stable condition.
- Control of weeds.
- Monitor and maintain cleanfilled/rehabilitated areas to ensure they are functioning appropriately post-closure for a period of 12 months and/or until 80 % groundcover is established.
- On completion of filling and rehabilitation activities, Fulton Hogan will remove all mobile machinery from the site and secure the site so as to be suitable for its ongoing use.

The site will be rehabilitated in accordance with the site rehabilitation management plan to a predominantly flat landform. The final levels depend on commercial cleanfilling availability of suitable fill. This means that a variation of ground levels in some parts of the site could resemble a slight terracing effect, with higher areas adjacent. At this stage Fulton Hogan's intention is to leave battered slopes with a gradient of 1 (vertical) to 3 (horizontal).

#### 4.7 Proposed Staging

Cleanfill material will form a key component of site rehabilitation and, as such, it is proposed to cleanfill areas pursuant with staging outlined in the Quarry Rehabilitation Plan.

## **5.0 WASTE ACCEPTANCE**

### **5.1 Acceptable Cleanfill**

Cleanfill material deposited shall only include material defined as being Acceptable Cleanfill Material as set out in Canterbury Land and Water Regional Plan and Section 4.2 of the 2002 MfE Guide, including:

- Uncontaminated soil, rock, gravel, sand, silt and clay.
- Glass.
- Bricks.
- Concrete.
- Ceramics.
- Cured asphalt.
- Tiles.
- Road sub-base.
- Untreated wood comprising less than one percent of any load by volume.
- Vegetative material comprising less than three percent of any load by volume.
- Metals such as reinforcing rods that cannot be reasonably separated from materials listed above.
- Additionally, cured asphalt may be used as cleanfill material but must only be placed in the land at least one metre above the highest groundwater level recorded at the site.

### **5.2 Unacceptable Cleanfill Material**

Unacceptable cleanfill material includes, but is not limited to:

- Abrasive blasting sand/agents.
- Dredging spoil.
- Radioactive waste.
- Asbestos.
- Electrical insulation.
- Separated metals.
- Wet asphalt.
- Hazardous materials.
- Wet or dry lead-based paint.
- Cables.

- Household waste.
- Wet paint.
- Carpet.
- Medical waste.
- Tar.
- Containers plastics.
- Tyres.
- Contaminated soils.
- Electrical insulation.
- Laminated wood.

All material not listed in Acceptable Cleanfill Material will be excluded from the site. Any material not specified in either acceptable or unacceptable materials must demonstrate that it is not leachable, degradable, putrescible, combustible, hazardous, liquid or unsafe if excavated to be accepted for deposit.

Any unacceptable material detected at the site will be removed and disposed of at an appropriate facility. In the event that unacceptable material is identified, an investigation of source and appropriate response will occur through the OFI system to avoid any repeat of the non-compliance.

### **5.3 Testing Requirements**

Any cleanfill material or soil deposited at the site shall not be sourced from any site on the Listed Land Use Register, or where a Hazardous Activities and Industries List activity (as defined by the Ministry for the Environment) has been occurring before the date the cleanfill material is received, unless the cleanfill or soil has been analysed for the appropriate contaminants and has been shown to be not contaminated, defined in the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 as at or below background concentrations.

### **5.4 Waste Acceptance Controls**

#### **5.4.1 Method of Inspection**

The following procedures will be followed when material arrives at the quarry site:

- All imported fill will be received to a pre-determined receiving area where it will be unloaded/tipped from the vehicle/truck/trailer that brings it for the purpose of inspection.
- Imported fill will be inspected for moisture content. Imported fill that is visibly wet, has the appearance of mud, or that does not readily break apart due to the presence of moisture will be laid aside and not inspected until dry.
- Soils displaying evidence of contamination will either be set aside for chemical testing or rejected. If the material is unsuitable the carrier will be turned away and an alternative licensed land-fill site will be suggested. Details of this will be recorded.



- No person may tip any load in an area that does not correspond to the area specifically directed by the Cleanfill Operator. If tipping occurs at a location other than that indicated, records of this will be kept at the Dispatch office and corrective action taken.

#### 5.4.2 Suspect Material Indicated at Tip Area

If prohibited substances are suspected or confirmed at the tip-head the area shall be marked and the area closed off. Tipping will not take place within 15 metres of the quarantined area. Once prohibited substances are removed and the quarantined area is cleared tipping may resume in that area

The material will be reloaded onto the truck and an authorised landfill site will be recommended. The driver/customer will be issued with a copy of a rejection notice which will double as a written warning.

A copy will be kept on file. If it is a first offence permission to tip may be restored when the Quarry Manager is satisfied that future material is not from the suspect source. If it is a repeat offence the Quarry Manager may permanently withdraw the right to tip.

#### 5.5 Documenting and Record Keeping

A declaration record of all material accepted on site shall be kept, which shall include the following information:

- The name of the company delivering the material.
- The date of deposition.
- The physical address of the land the material was sourced from.
- A description of the material.
- The weight or volume of the material deposited;

Records of the declarations shall be kept as well as records of inspections carried out on the material. Any material that does not meet acceptance criteria shall be removed immediately with records kept of such incidents.

## 6.0 ENVIRONMENTAL CONTROLS AND MONITORING

### 6.1 Spills

All practical measures shall be undertaken to prevent spills of fuel or any other hazardous substances within the site. Spill kits will be available on site.

In the event of a spill, the spill shall be cleaned up as soon as possible in accordance with the Fulton Hogan Spill Response Guideline. The area affected shall be inspected and cleaned, and measures taken to prevent a recurrence. Spill kits are to be restocked following deployment. An OFI shall be generated to record the nature of the spill, cause, response, and remedial action required/taken.

Details of the spill shall be communicated to the Canterbury Regional Council within 24 hours, and the following information provided:

- The date, time, location and estimated volume of the spill.
- The cause of the spill.
- The type of hazardous substance(s) spilled.
- Clean up procedures undertaken.
- Details of the steps taken to control and remediate the effects of the spill on the receiving environment.
- An assessment of any potential effects of the spill.
- Measures to be undertaken to prevent a recurrence.

### 6.2 Dust

To limit dust emissions from the cleanfill operation the following mitigation measures are proposed:

- Adherence to the Dust Management Plan.
- Vehicle movements on unpaved surfaces are the primary source of dust emissions. The key measure to controlling these emissions is the suppression of the dust through the application of water on dry days. To achieve this, a water cart(s) will be used for dust suppression during dry weather so that working areas, haul roads and stockpiles are kept damp.
- Vehicle movements on unpaved surfaces are also proportional to the vehicle speed. Accordingly, vehicle speeds will be kept below 20 km per hour on the site during dry or windy conditions. With respect to this and the preceding bullet point, it is noted that vehicle movements through the life of the cleanfill will be no greater and most likely considerably less than those associated with the existing quarry.
- Areas backfilled with cleanfill will be re-grassed by spreading stored topsoil and subsoil and replanting with suitable grass species as soon as practicable. This will limit potential for dust generation by minimising exposed surfaces.

### 6.3 Noise

Fulton Hogan apply the following best practicable options for noise mitigation:

- Maintain haul roads and access ways to a good standard so as to limit noise from road trucks and mobile plant.
- Cleanfilling will occur on-site during consented operational hours for quarrying.
- Maintaining the existing bunding around the cleanfill site.
- Ensuring that all construction activities such as rehabilitation works comply with the construction noise standards NZS6803:1999.
- Operators of noisy machinery shall be instructed and trained in noise minimisation techniques.
- A complaints register will be kept to record, document and respond to complaints associated with the quarry, including those arising from noise generation. Annual reporting of complaints received can occur to allow review of compliance and the effectiveness of conditions.

### 6.4 Sediment and Erosion Control

Erosion and sediment control mitigation shall be in place, as required, to prevent erosion of open pit faces and/or the transportation of sediment off site. No water courses run through the site and being a relatively uniform excavation, all run off will be contained within the cleanfill site.

### 6.5 General Site Appearance and Management

The site shall be kept in a tidy condition at all times. Any litter on site will be appropriately disposed of at an approved disposal site.

Site management shall include attention to weed control, with a particular focus being on cleanfilled and rehabilitated areas and around boundaries. Cleanfill stockpiles will be inspected and pushed over the working face on a regular basis. At least annually, a site inspection shall be carried out which will direct works required to maintain the overall amenity of the site.

## 7.0 COMPLAINTS RESPONSE

All external complaints from stakeholders, including the general public, neighbours, clients and regulators shall be recorded and retained at the Royden Quarry site office and a Complaints Register kept. The Register shall record complaint details including:

- The date, time, location and nature of the complaint.
- The name, phone number and address of the complainant, unless the complainant refuses to supply these details.
- The most likely cause of the alleged issue.
- Any remedial actions undertaken.

Each complaint shall be investigated and reported in accordance with Fulton Hogan internal complaint management procedures. Where changes to practices or procedures are identified as appropriate through the complaints procedure, amendment of this Cleanfill Management Plan may be required. Copies of the Complaints Register shall be made available to the Canterbury Regional Council and/or the Christchurch City Council on request.

## 8.0 DOCUMENT REVIEW

In order to provide a general update on cleanfill-related activities, Fulton Hogan proposes to report on an annual basis. This includes covering circumstances arising during the gradual development at the site, which may alter the timing and staging of cleanfill works. It is expected that the quarry's consents will include a condition about reviewing the need for updating site management plans, including the cleanfill management plan. In some years it may not be necessary to alter the contents of the plan if there are no unexpected occurrences, however in other years Fulton Hogan may wish to adjust their strategy.

As a minimum for the cleanfill management plan, Fulton Hogan proposes to conduct a more thorough revision on a five-yearly basis. Should any of the following circumstances occur, this will trigger an unscheduled update (out of annual review timeframe):

- When there is a fundamental shift in operational activities (e.g. unscheduled move to a new area).
- Following significant environmental incidents (e.g. flooding on the site, causing damage to assets).

In a scheduled review of the cleanfill management plan, it is proposed that the following matters be considered. This is in terms of suitability of existing content and whether new information is required:

- Outlining cleanfilling activities undertaken during the reporting period.
- Areas of the site to be quarried (extraction) over the next 12 months.
- Plans for cleanfilling, earthworks and overburden stripping and disposal, over the next 12 months.
- Areas of vegetation removed and areas planted during the reporting period.

## Appendix 1: Environmental Policy

# Environmental Policy



**Working together to protect our environment**

## **We will:**

- Work towards minimising our environmental footprint through innovation, energy and resource efficient operations focused on reducing, reusing and recycling
- Meet or exceed all obligations and consent conditions applicable to our activities
- Recognise that environmental management encompasses diverse aspects including flora, fauna, water, community and cultural interests
- Identify impacts to the environment and implement effective controls
- Set objectives and targets to measure, manage and improve our performance
- Train our people to identify environmental risks and opportunities to improve our performance
- Work closely with our subcontractors and suppliers to ensure they meet our expectations
- Drive continual improvement through the proactive use of environmental management systems

## **Our people will be environmental leaders by:**

- Minimising the long term environmental impact of our activities
- Planning for and addressing all environmental risks and opportunities
- Pursuing innovative ways to improve our environmental performance

**C W Bruyn**  
Group Chief Executive Officer

December 2017