

Beyond the Front Gate

Building Communities



JUNE 2018

In this issue

Recycled glass an unlikely ingredient for our roads

Fulton Hogan blends glass with several of its building products and is now New Zealand's second largest user of recycled glass.

It has been reusing glass since the 2000s using the Glass Packaging Forum (GPF). The forum works with councils, recyclers and waste management companies to maximise the amount of glass recycled and reused, using 3R Group Ltd.

Fulton Hogan South Island Resources and Sustainability Manager Don Chittock said the products recycled glass was blended into was dictated by customers and sales. "In the last year, Fulton Hogan received just over 15,000 tonnes of material which was then blended into product."

GPF Scheme Manager Dominic Salmon said Fulton Hogan was

taking most of the glass from the Christchurch area and finding a solution for something that could be put to alternative use.

Mr Chittock, who is also a GPF Steering Committee member, said the forum was funded through levies from glass users. "Any bottle of wine or jar of pickles... a portion of that sold goes to fund this forum."

Fulton Hogan Quarry Operations Manager Kelvyn Jolly said the majority of glass Fulton Hogan received was three to 15 millimetres in size. This was used in AP65—a base layer used for construction purposes. Mr Jolly said AP65 had many purposes, such as being a base layer for foundations, roads and carparks. Zero to three millimetre sized glass was also used as an A2 sand replacement. Mr Chittock said the

Christchurch Northern Corridor used this fine glass blend as a storm water medium. This prevented potential contaminants, such as oil or dust from braking, from entering surface water.

"You put it in a basin and it helps filter the water that's coming off roads." It could also be used underneath floor slabs in homes, to protect the slabs from sharp stones.

Mr Chittock said there was a perception that recycled glass would injure people, but it was perfectly fine to use. He hoped to see these recycled glass blends recognised as normalised products.

Fulton Hogan aimed to work closely with 3R Group to better establish the glass and aggregate market.

What is the real story about quarry dust?

How can we understand this nuisance element in layman's terms? [More on page 2/3.](#)



A partial rehabilitated quarry now home to award-winning vineyard [More on Page 2/3.](#)



Quarry

Q's

with Jared Johnston,
your South Island
Quarries Manager

The editor sat down with Jared and asked him some pointed questions:

1. When you think about quarrying what does that mean to you, what is the importance of it?
"A lot of people don't understand quarrying and what it means. To me it is about what it enables, it is an integral part of everything we do, from housing, road to rail. It's pretty cool to be a part of that. It is about providing the raw materials that are essential to carry out the build phase of any project".

2. What does a normal day look like for you, if there is such a thing?

"Most of the day for me is about the people that I am connecting with. We are very lucky to have a lot of "good buggers" working in the quarry space. Day to day I connect with the South Island managers and our clients helping them with any issues, dealing with what it takes to ensure they are supported in fulfilling their day's work".

3. Come back to the importance of quarrying in terms of not just for Fulton Hogan, but also for the greater good/purpose.
"It covers a range of scenarios, quarries to me are important for a number of reasons; we employ a large number of people across the

country. It provides a great career pathway if you look for it. The industry is doing a great deal to correct many of the negative connotations associated with quarrying. For me that is one of the best parts of the job, doing the right thing on a day-to-day basis both for the community and the business."

Jared's Quarry Q's is all about 'Quarry Dust', refer to Page 2/3.

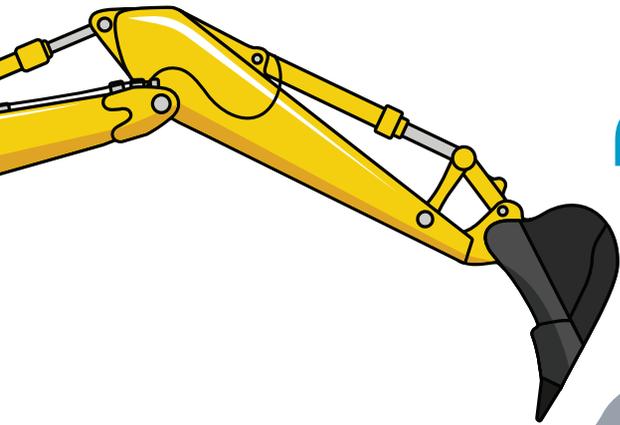


Fulton Hogan is passing native trees onto the community to bring more native wildlife back to Canterbury. [More on Page 4.](#)



Q's

Quarry Dust



Dust Mitigation

Dust is generated from 3 primary points. The crushing process, truck movements, and general open areas.

CRUSHING PROCESS

Fulton Hogan use foggers; a dust suppression system using water. The tiny water droplets absorb even the smallest dust particles in the air. These are installed on both the Miners Road and Mcleans Island plants + We locate the plant centrally, away from the boundaries.

TRUCK MOVEMENTS

Fulton Hogan chip seal the main haul roads and use water carts for the remainder of the quarry. The Christchurch quarries have a fleet of (4) 20,000 litre water carts, one per quarry (these are the largest carts out of all of Fulton Hogan's competitors).

GENERAL OPEN AREA

Limit open area through progressive rehabilitation (grassing) + Cover open area with clean rounds (doesn't generate dust) + Water carts.

ABOVE AND BEYOND

Fulton Hogan have dust monitoring equipment at all of their operations. Roberts Road has continuous monitoring + Fulton Hogan undertake personal tests on their quarry staff yearly + It is expected that there will be a Best Practice programme established in Canterbury shortly moving towards automated dust suppression systems.

Partial rehabilitated quarry now award-winning vineyard

It has strange roots, but one Marlborough winery is flourishing to produce unique, award winning wines. Dig into the history of what is now Lake Chalice Wines and you will discover one of its vineyards is part of a rehabilitated Fulton Hogan quarry.

Fulton Hogan won the Ministry for the Environment's Green Ribbon in 2004, to recognise its contributions to protecting and enhancing New Zealand's environment with its partial rehabilitation of Renwick Quarry—the rest of the quarry is still being used. Fulton Hogan Civil General Manager Tony Gallagher said he was approached by one of Lake Chalice Wines'

founders to convert the quarry's clean fill into a vineyard. "We experimented to see if it worked and sure enough it did." In 2004, the first Sauvignon Blanc and Pinot Noir were harvested.

Lake Chalice Wines Brand Manager Ben Leggett said it was a "bit of an uphill battle" growing the grapes on the rehabilitated site in the beginning, but they had showed great results. "It's a good example of the industry working with viticulture and a good outcome for the environment," said Mr Gallagher.

Fulton Hogan Marlborough Regional Manager Tim Glanville said the quarry would continue to be rehabilitated once extraction had finished. He hoped to lease the land to become another vineyard. The rehabilitated quarry site, now a slice of Falcon Vineyard, yields low grape harvests but produces

What does 'Nuisance Dust' mean?

Nuisance dust is a term that is used to describe any airborne liquid, or solid, that is not harmful to the human body if the levels of concentration in the air and the duration of exposure to the environment is kept below a specific level.

Dust particles resulting in nuisance effects are typically in the coarse, PM10-2.5, and TSP size fractions, and are formed through mechanical and abrasive processes.

However, some particles less than 2.5 microns in diameter may occur as a result of particular activities. Particles may become elevated as a

result of natural processes such as winds or anthropogenic activities including mechanical interactions such as transportation or the tilling of land.

Examples of sources of dust nuisance in New Zealand include vehicle movement on unpaved roads, quarrying, aggregate crushing, stockpiling of materials, tilling of land, erosion of soils and riverbeds, construction sites and abrasive blasting. In some areas high levels of pollen have been reported as an air quality concern. In the workplace, employees may be required to work in, or be exposed to, environments that contain nuisance dust. Fulton Hogan takes the responsibility to provide a safe environment and protect the employee from illness or harm very seriously, by ensuring

that nuisance dust levels are controlled and respiratory protection equipment (if needed) is supplied. The acceptable dust levels are determined by the territorial authorities, in this instance Environment Canterbury, Christchurch City Council and Selwyn District Council. Whilst the Canterbury District Health Board also takes an interest in the monitoring. Factors that are taken into consideration are the particulate size and type, the concentration of the particulate in a given area and the duration of exposure to the particulate.

Proposed management measures include conditions such as "no dust beyond the boundary which causes an offensive or objectionable effect".



Quarry Code of Practice

In September 2017 representatives of the Christchurch quarry industry agreed to work with Environment Canterbury and Christchurch City Council in the development of a Quarry Code of Practice.

The Code of Practice (COP) has been worked on over the past 9 months with input from a number of quarry operators in and around Christchurch. The focus of the COP is to clearly set a standard of operation for all quarries.

The COP covers all aspects of quarrying from the initial site setup, traffic management flows in, out and on the site, water quantity

and usage, water quality both on site and downstream, dust management, clean filling, refuelling, site rehabilitation and other key practices.

Regulators and communities have lifted their expectations and scrutiny of the quarry industry's work practices and the possible impacts on these and the operators take this very seriously. They believe that the community input into the ongoing development of quarry sites plays a large part in how quarries will be established and managed in the future. The COP intends to provide a simple direction for what is expected to be standard operating practice and on-going improvement to "good and

best operating" standards. The intention of the COP is to future proof the way that quarry operators think, and to operate to maintain the social license of operation whilst being good neighbours in our communities.

It is hoped the COP will be finalised between the various quarry operators and the local councils and that it will be operational before Spring 2018.

intensely flavoured fruit on its stony, sandy soils. Mr Leggett said six varieties of grape were grown on the 14.6 hectare vineyard. The vineyard encompassed both sides of the operating quarry. Two unusual pinot noir rosés were amongst some of the wines made with the vineyard's grapes. Mr Leggett said pinot noir rosé was a "unique choice" as pinot noir was labour intensive and rosé usually used a less laborious grape to deliver a medium priced wine.

A Lake Chalice Wines pinot noir and a Riesling both won the Blue-Gold Top 100 Award at the Sydney International Wine Competition this year.

The vineyards were managed by the Ibbotson family, the pioneers of Saint Claire Family Estate, after Phil Binnie and Chris Gambitis founded the brand in 1989.



New planting initiative has high hopes for the birds and bees

Fulton Hogan is passing native trees onto the community to bring more native wildlife back to Canterbury. Its new programme, the Indigenous Planting Programme, donates native plants with the aim of improving the environment around Fulton Hogan worksites and throughout the wider Canterbury region.

Fulton Hogan gave Environment Canterbury permission to plant 300 kowhai trees from its stores. It donated a further 20 kowhai trees which were recently planted on a local dairy farm by students, as a part of the Untouched World Charitable Trust's Waterwise programme. Fulton Hogan's Pound Road site was also planted with 120 kowhai.

Fulton Hogan Environmental Advisor Marsha Mason hoped this planting initiative would result in areas where birds, bees and geckos could thrive. She said Fulton Hogan planted around its worksites with locally sourced, native species to improve biodiversity and provide habitat for native wildlife, such as the native trees, flax and grasses which surrounded Pound Road quarry.



Environment Canterbury Biodiversity Officer Johannes Welsch said: "Fulton Hogan have this really strong commitment of giving back, especially from the land they're using for the quarries, weaving plants back into the land that they usually occur on."

Working with DOC to save sea lions on Campbell Island

Fulton Hogan's Christchurch Northern Corridor Zone Manager, Reuben Saathof, has certainly picked up the mantle. Reuben won our conservation engineering challenge to design a predator proof culvert to protect native species in sanctuaries around New Zealand.



This was a precursor to his next challenge – travel to sub-Antarctic Campbell Island and devise a way to save sea lion pups who fall into holes and die of starvation or drowning because they can't climb out. Reuben visited two main sea lion colonies on Campbell Island and saw first-hand how the weight and movement of the sea lions combined with the almost constant rain and wind conditions have eroded the peat soil, creating deep hollows and holes that trap sea lion pups.

"The sea lions were really inquisitive. As soon as we pulled up on shore they came to see us," said Reuben. Reuben concluded that erosion is causing the holes to form in the sea lion colonies. In his final report, Reuben will be recommending suitable erosion control materials to fill the holes. If Reuben's recommendations are actioned by the Department of Conservation, there may be an opportunity for a Fulton Hogan staff member to supervise the works – so watch this space!

A promotional banner for Family Day at a quarry. The banner features a man in a white hard hat and orange high-visibility shirt pointing towards the camera, a woman in a blue top, and a young boy in a blue shirt. The background shows a quarry site with mountains in the distance. The banner includes the text "Building Communities" in a blue box on the left, "Family Day at the quarry" in an orange box on the right, and "Sunday 29 July 11am - 4pm 24 Miners Road" in an orange box. Below the date and time, it says "Family-friendly, educational quarry open day. Site tours, information stalls, machinery on display, food & loads of entertainment for the kids." The Fulton Hogan logo is in the bottom right corner, and a small cartoon character is in the bottom right corner of the banner.

Building Communities

Family Day
— at the quarry —
Sunday 29 July
11am - 4pm
24 Miners Road

Family-friendly, educational quarry open day. Site tours, information stalls, machinery on display, food & loads of entertainment for the kids.

Fulton Hogan