

Silicosis risks and Bournda Downs quarry

What is silicosis?

Silicosis is an entirely preventable disease. It is a [debilitating and often fatal](#) lung disease and is caused by inhaling microscopic silica dust. There are [three types of silicosis](#). *Chronic silicosis* can occur after 10 - 30 years exposure to silica dust (also known as respirable crystalline silica). However, *Accelerated silicosis* occurs within 10 years of frequent silica exposure and *Acute silicosis* can occur within a few weeks or years of silica exposure.

There is no cure. In its early stages it is often without symptoms. Silicosis is sometimes called the “[new asbestos](#)”.

The Bournda Downs quarry will mine rhyolite. Rhyolite has a high silica content of [69-80%](#).

Silica dust and other dust diseases

Silica dust is a carcinogen and can also cause [other diseases](#) including lung cancer or kidney disease. An estimated [230 people](#) in Australia develop lung cancer each year due to past exposure to silica dust.

While some people may have heard about silicosis from engineered stone - a 2022-2023 case study by Queensland Health found that [57% of new cases of silicosis](#) among workers were from mining and quarrying.

Exposure to silica dust can occur during [common quarrying tasks](#) where dust is generated, including drilling, blasting and rock breaking, as well as [crushing](#), screening and bulk handling and mobile plant movement on unsealed roads.

Australia has only recently adopted work-place dust disease registers that include reporting of new silicosis cases for workers. The NSW register does not include mining in its statistics.

There is no similar register to track any silica dust-related diseases in people living near quarries or open mines.

How do you monitor silica dust?

Silica dust can be 100 times smaller than [a grain of sand](#) so you can breath it in [without knowing](#). It is invisible and can stay in the air for a long time. While Australia has silica dust exposure limits for workplaces, the [Cancer Council](#) notes that “there is currently no evidence to suggest a safe level of silica dust exposure”.



Image: Cancer Council. Breathing in the amount of silica dust shown in this

picture each day means you have exceeded the workplace exposure limit of 0.05mg/m3

The Bournda Downs quarry Development Application (DA) proposes to operate an open pit quarry with periodic blasting, crushing and truck transport down Sapphire Coast Drive - entering in the section of road near the Hobart Beach turn-off. When Bournda Downs quarry operated before closing in **2010** it did not undertake crushing or screening onsite and there was less public health concern about silicosis.

The Air Quality Management Plan attached to the DA discusses dust from the quarry as a general issue. However, it makes no mention of silica dust or silicosis risks. It notes that it will **not** undertake sampling of dust deposition from the quarry along the access road - but only makes a vague reference to do so if it poses a “nuisance to residents”. The threshold for determining what constitutes a “nuisance” is not defined.

The DA does not mention “silica” at all nor any specific measures to monitor silica dust.

Examples of silicosis diagnoses in quarrying and mining in Victoria and NSW

Multiple recent cases of silicosis have been identified in workplaces that failed to comply with safety standards.

In 2023, Boral [was fined](#) for failing to control silica dust in its [rhyolite and rhydocite quarry](#) in Montrose in Melbourne. [Jo O’Neil](#), a 34 year-old [administration worker](#) at the quarry was [diagnosed](#) with silicosis in 2019. She can [no longer work](#) due to ill health.

In 2024, mining company Silbelco [was fined](#) after failing to control “plumes” of silica dust in its Lang Lang quarry in Eastern Victoria. [Kevin Weekes](#) was one of three workers loading pallets diagnosed with silicosis.

Parliamentary records have recently shown that [1 in 3 air quality tests](#) taken during construction of the Metro City and Southwest tunnelling projects in Sydney between 2016 and 2020 breached workplace exposure standards. 13 workers were diagnosed with silicosis.

While these quarries and tunnelling projects were far larger than the Bournda Downs quarry - they also had greater capacity for oversight, with more stringent regulatory requirements due to size and were operated by large companies with mining expertise. The Bournda Downs quarry will be under 2 hectares - meaning it will not be subjected to the same state government approvals as required of a larger quarry.

Concerns for residents

If quarries, mines or tunnelling projects are breaching their legislated maximum levels for silica dust in the air or failing to protect their workers this could also impact on local residents’ exposure to silica dust.

Of particular concern in the above cases is that the alarm over workplace breaches was only raised *after* silicosis was diagnosed.

To date, there are no long-term studies tracking the health or silicosis risks of local residents near quarries in Australia. Overseas studies have found that everyday people exposed to silica dust can develop [silicosis](#).

Animal models also show that [various animals can develop silicosis](#) or other diseases from silica dust and people may be concerned about wildlife and pets.

The Bournda Downs quarry Statement of Environmental Effects (Environmental Statement) suggests that the quarry will only have two part-time workers on site each day, working 10.5 hour shifts Monday - Saturday.

This raises questions about quarry expertise and oversight of safety measures given silicosis risks - such as air monitoring, environmental monitoring and transporting materials in trucks that may have been exposed to silica dust and associated risks to residents or workers.

The Environmental Statement also listed the estimated cost of work as \$10,000. This does not suggest a heavy investment in rigorous and permanent environmental safety measures.

The Statement makes no reference to silica in the DA report. The Environmental Statement for the quarry in Council's Development Application database does not include any studies monitoring wind speed or wind direction to consider how fine silica dust from the quarry may travel into the nearby environment.

The DA does not identify silicosis as a health risk.

The Hierarchy of Controls

The National Silicosis Prevention and Awareness program recommends that workplaces adopt a Hierarchy of Controls. The Hierarchy of Controls is also endorsed by the Royal Australasian College of Physicians and other medical bodies.

The hierarchy, in order of priority is:

1. **Elimination:** Remove the hazard - use products with no crystalline silica.
2. **Substitution:** Replace with lower silica content materials.
3. **Isolation:** Separate workers from dust (e.g. automated machines, exclusion zones)
4. **Engineering controls:** Use tools with water suppression or local exhaust ventilation.
5. **Administrative controls:** Implement training, shift rotations, and cleaning policies.
6. **Personal Protective Equipment (PPE):** Use high-level respiratory protection (RPE), such as P2 masks.

The project's Environmental Statement notes that the quarry will "extract rhyolite for use in local road construction". It also cites possible use in landscaping materials.

Applying the "Hierarchy of Controls" as a broader principle beyond just workplaces suggests that Bega Valley does not need a high-silica open quarry that will involve the circulation of high-silica dust.

BVSC is presumably the largest purchaser of local road-making materials. BVSC can already source road-making materials from existing quarries without exposing residents to unnecessary risk of new quarry operations. BVSC could also reduce its costs in transport by using EV vehicles. BVSC has already been using [recycled materials in its road base](#). BVSC could further explore the viability of options for expanding the use of recycled materials in line with its commitment to the Bega Circular Economy.

More specifically, as an employer, BVSC has a [duty to apply the Hierarchy of Controls](#) and choose materials that constitute a lower silica dust risk for its employees when it has that option.

Potential risks and costs to Bega Valley Shire Council

If the quarry is approved, BVSC will be responsible for ensuring the quarry's compliance with measures under the DA:

- BVSC has the option to commission an expert study to examine the DA - particularly given the quarry exposure to high-risk silica dust - but it does not appear to have done so.
- BVSC has the option to raise concern with the lack of reference to silica or silica dust in the DA application. It has not yet done so.
- BVSC should also undertake its own study into the necessary measures and cost to council of effective oversight of the quarry compliance of the current DA, given current gaps. For example, the commissioning of expert hygienicists for environmental air monitoring in line with the [National Dust Disease Taskforce 2021 final report](#). This could show if BVSC itself will assume unnecessary costs for compliance - due to a lack of rigour in DA requirements from the quarry proponent.

It is possible that a scenario could arise where BVSC is itself exposed to legal or financial liabilities, for example, through civil actions in the event that:

- If the measures of the DA prove inadequate in managing silica dust and/or related risks in the environment and it is argued that BVSC did not undertake adequate due diligence - for example, the DA's failure to mention silica.
- If BVSC is unable to ensure compliance by the quarry with its requirements of the DA and this proves inadequate in managing silica dust and/or related risks to residents or workers.
- If BVSC is transporting vehicles in and out of the quarry site without sufficient controls in the removal of silica dust.

Additional risks may arise if:

- BVSC becomes the largest or primary client of the quarry. It could be viewed reputationally as a significant economic stakeholder in the quarry - without its participation the quarry may not be able to operate.
- BVSC enters into commercial terms with the quarry that may preclude BVSC from sourcing materials from other sources at a better price.
- Local businesses face adverse economic impacts. In [January 2025](#), according to [BVSC](#), tourists and visitors to the Bega Valley spent over \$40 million in a single month. Even if the unaddressed impacts on dust, wildlife or health - or just the perception of risk - from nearby high-silica mining impact only a quarter of 1% of BVSC visitor spending, that would still represent a loss of over \$100,000 in a single month.