

# Respirable Crystalline Silica Toolbox

October 2021

# What is respirable crystalline silica?

→ a dust composed of really fine quartz that is damaging to your lungs if inhaled

Found in:

- Sandstone (i.e. the rock we are tunnelling through)
- Concrete
- Brick
- Grout
- Tiles/masonry

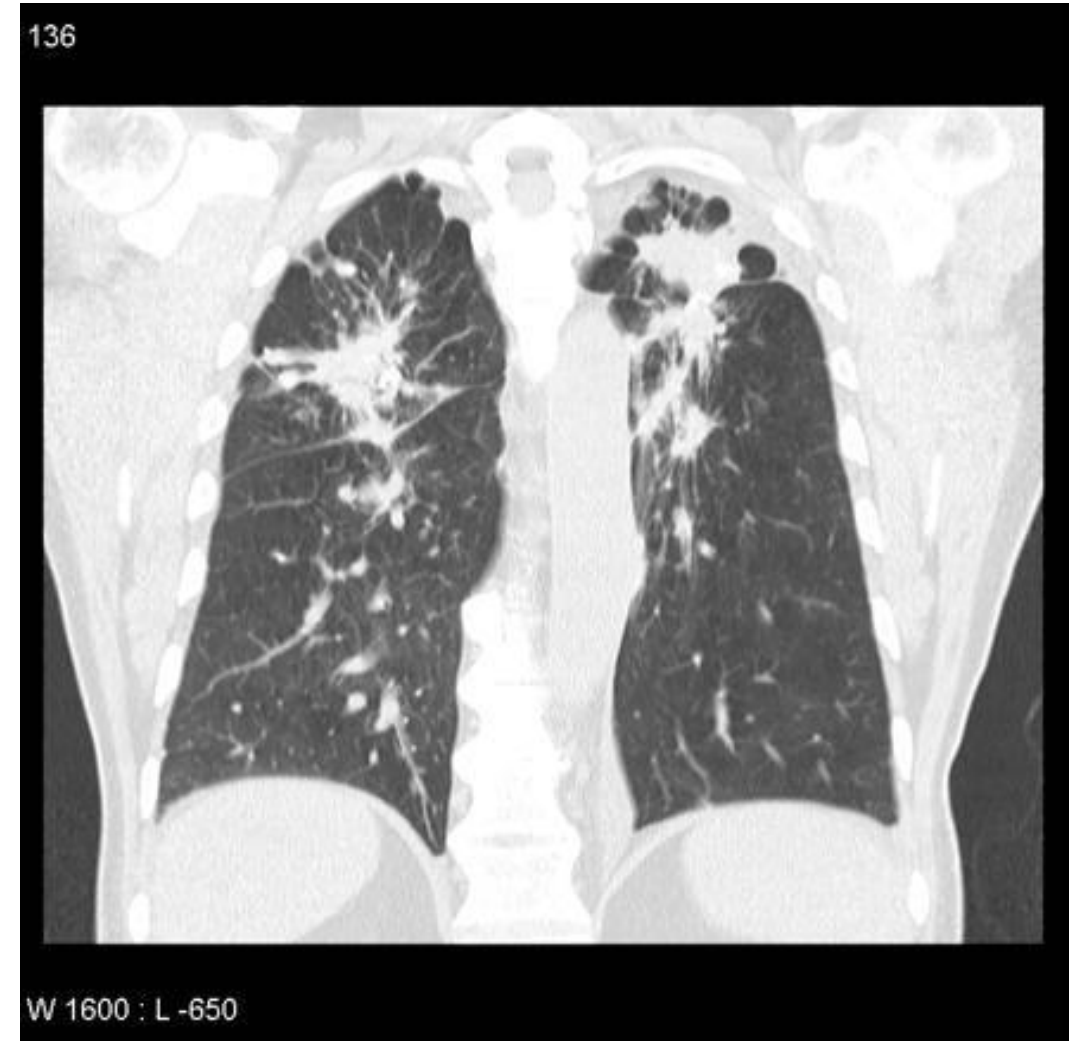


# What does respirable crystalline silica do?

## Potential Health Effects

- Silicosis
- Lung Cancer
- Chronic obstructive pulmonary disease
- Various auto immune diseases

(& less-serious ones like eczema, emphysema, bronchitis)



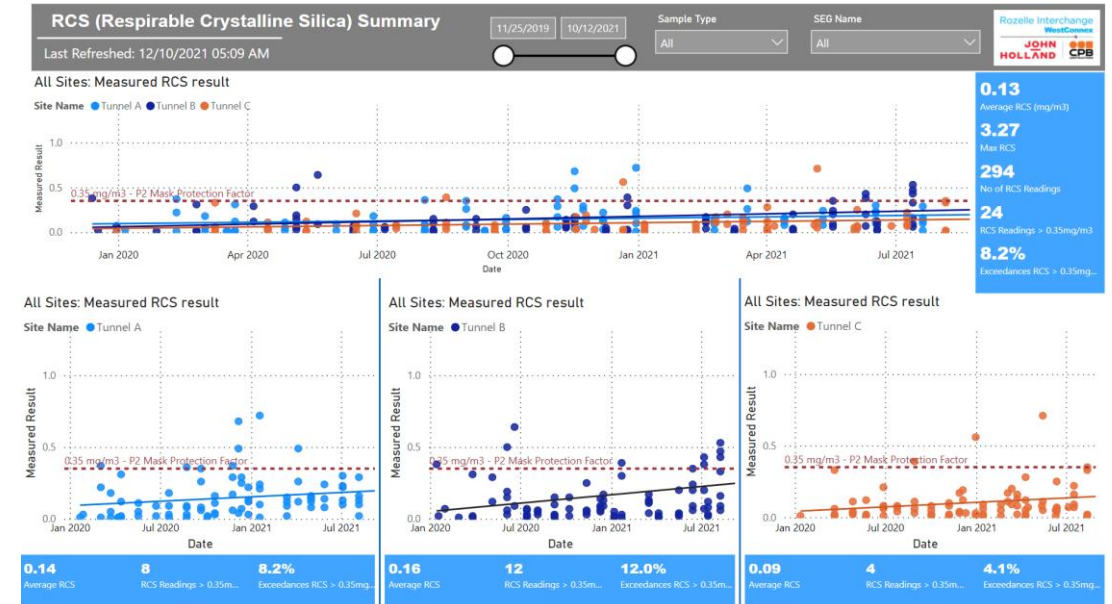
# What controls do we have for silica

- Ventilation
- Extraction via scrubbers (at faces and on some plant → profiler)
- Water misters for every excavator with a hammer
- Water on blade for rock saws
- Water carts to keep road wet and prevent dust being re-suspended in air
- Maintenance for all plant
- Cleaning of plant cabins
- Brattice
- Signage/toolboxes/awareness
- Respiratory Protective equipment

# Results so far?

Workplace exposure standard  
 $0.05 \text{ mg/m}^3$

Average respirable crystalline silica  
Exposure =  $0.13 \text{ mg/m}^3$



Even with more than 16 ventilation fans, 20+ scrubber units, brattice, HEPA filtered cabins etc exposure is 2.5 times the exposure standard.

# The 'mask' makes the difference...

The mask make the difference...

No mask – exposure above the standard

Mask worn all the time while clean shaven (and fit tested) – exposure well below Standard.



# Crystalline silica = Danger!

Two biggest dangers in tunnel

- People plant interactions
- Exposure to crystalline silica

You wouldn't walk in front of a moxie... don't go walking around in the tunnel without a respirator