







SAFETY INNOVATION AWARD

AFC Sprays

Wade McDonald, Southern Colliery






AFC Dust Suppression Sprays

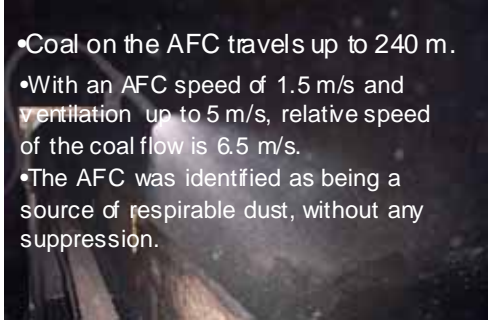


Wade McDonald demonstrates the AFC dust sprays.

The aim is to wet the top of the bed of coal to prevent the ventilation raising particles of respirable dust.

AFC Dust Suppression Sprays



- Coal on the AFC travels up to 240 m.
- With an AFC speed of 1.5 m/s and ventilation up to 5 m/s, relative speed of the coal flow is 6.5 m/s.
- The AFC was identified as being a source of respirable dust, without any suppression.




AFC Dust Suppression Sprays





Dry coal, particularly from gas drainage, normally goes untreated from the shearer to the BSL.





AFC Dust Suppression Sprays



Coal wetted by the sprays has a far lower propensity to generate respirable dust particles.

AFC Dust Suppression Sprays



The sprays are turned off by the shearer operators as the shearer cuts to the Maingate.

This prevents the sprays from wasting water by spraying onto the empty AFC.



AFC Dust Suppression



Sprays



The sprays are plumbed into the water outlet along the Face Bretby.

A 20 mm hose delivers water to an adjustable brass fire type nozzle.



AFC Dust Suppression



Sprays



The sprays pivot 90° to allow the shearer to pass.

The sprays are returned to the AFC as the shearer flits to the Tailgate.



AFC Dust Suppression



Sprays



The sprays are evenly spaced along the face (approximately every 40 chocks – 60 m).

Sprays are manually operated.

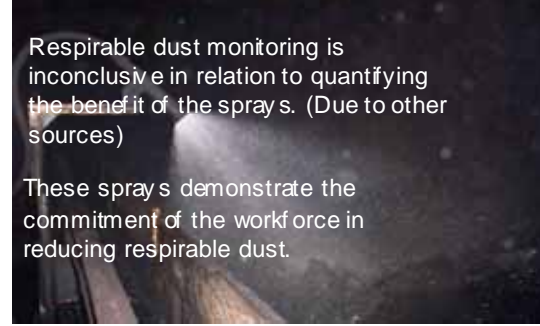
Designed to suit the conditions.



AFC Dust Suppression



Sprays



Respirable dust monitoring is inconclusive in relation to quantifying the benefit of the sprays. (Due to other sources)

These sprays demonstrate the commitment of the workforce in reducing respirable dust.



AFC Dust Suppression



Sprays



Southern Colliery is proud to nominate Wade McDonald's AFC dust suppression sprays for the Industry Safety Innovation Awards.