

Teck Trail Operations Fugitive Dust Update

September 22, 2020

Teck

Overview

What is fugitive dust?

- Progress to date

Current fugitive dust reduction initiatives

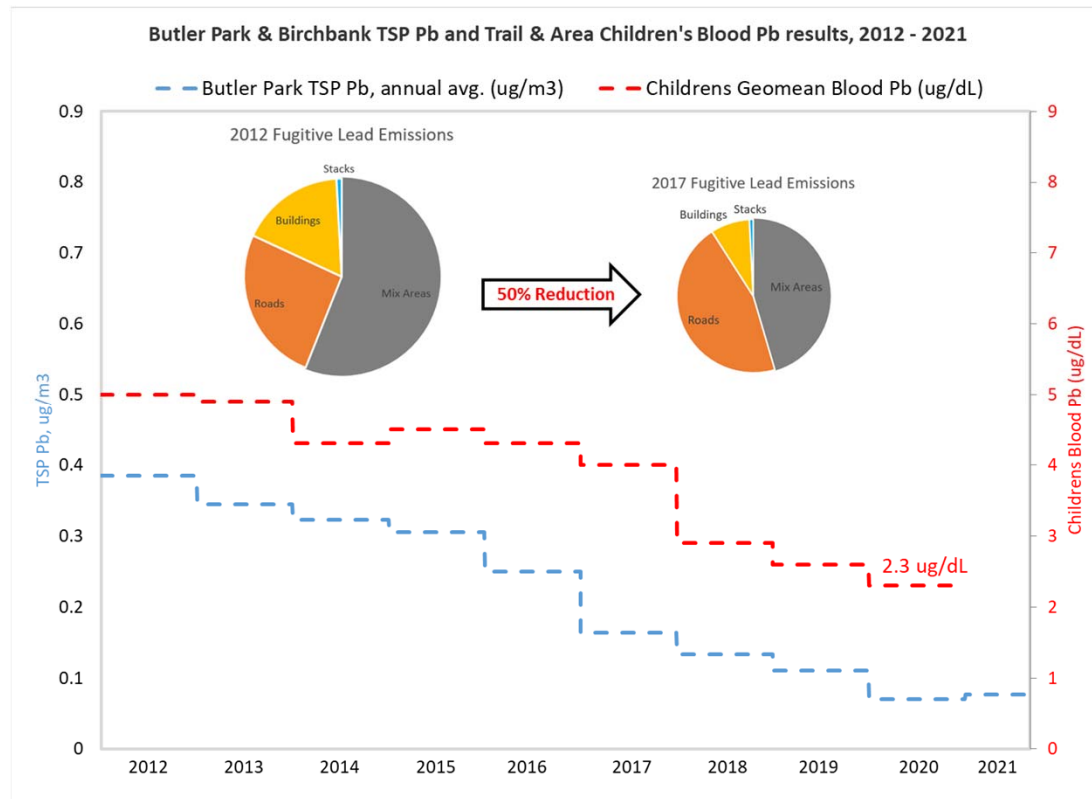
- Influence of weather
- Studies

What is fugitive dust ?

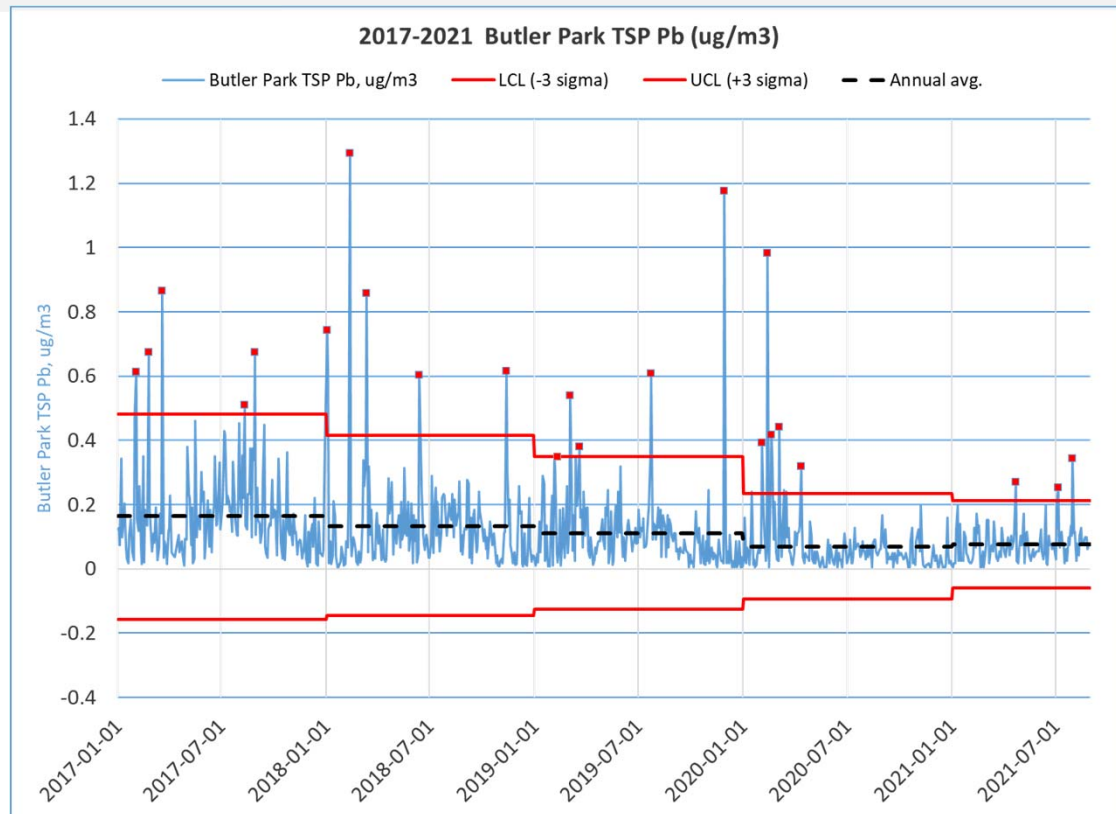
Fugitive dust is dust that escapes from stockpiles, open handling of materials, buildings and vehicle traffic on and offsite. Fugitive dust is not stack emissions.



Fugitive dust reduction and progress to date



Fugitive Lead Emissions Reduction, Reduction in variation

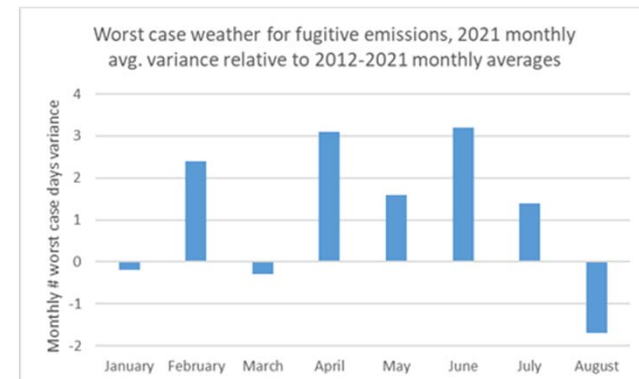
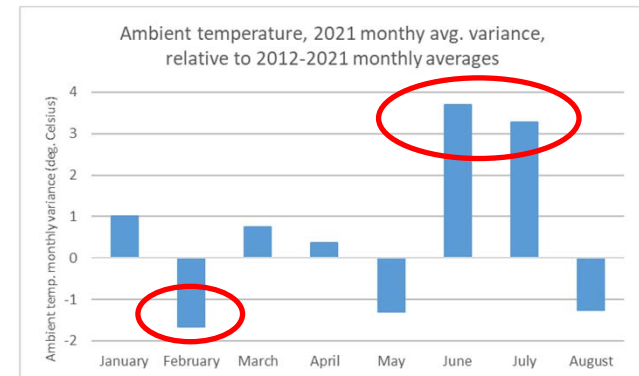


Current Fugitive Dust Reduction Initiatives

Studies to mitigate
the influence of
weather on dust
emissions

Current fugitive dust reduction initiatives: Influence of weather

- Even though a more moderate climate has been experienced over the last several years, there have been weather extremes in 2021.
 - Extremes in ambient temperature with cold dry weather in February and very hot June and July weather.
 - Monthly precipitation trended much lower than normal with the exception of August.
 - Particularly anomalous was the higher frequency for wind gusts above 30 km/h and sustained high winds.
- Weather extremes are challenging for controlling fugitive dust
 - Flush trucks can't wash roads at $< 4^{\circ}\text{C}$ in the winter.
 - Roads and piles dry out more quickly in summer heat.
 - High winds put even greater pressure on resources to apply controls to mitigate fugitive dust.



Current fugitive dust reduction studies: Cold dry winter weather with elevated winds

Controls are seasonal

Dust Controls	Mar.-Nov.	Nov.-Mar.
Wind warning	●	●
Dust suppressant	●	●
Flush truck	● ●	●
Sweepers	● ● ●	●
Sprinklers	●	●



Snow canon

Portable
Snow canon



Current fugitive dust reduction studies: Extreme summer heat, water use



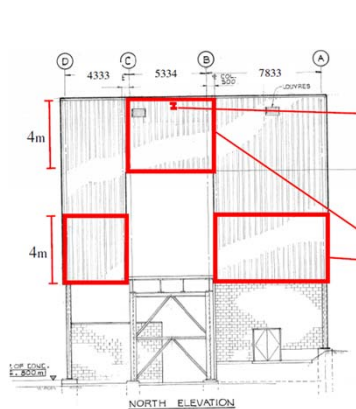
Upgrade to centralized control and monitoring



Other investigations:
Evapotranspiration technologies

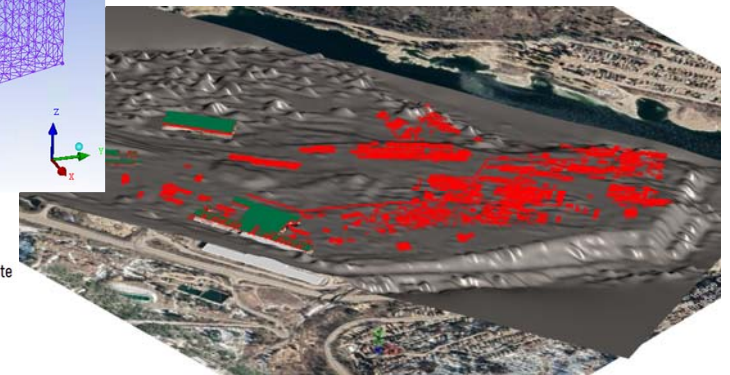
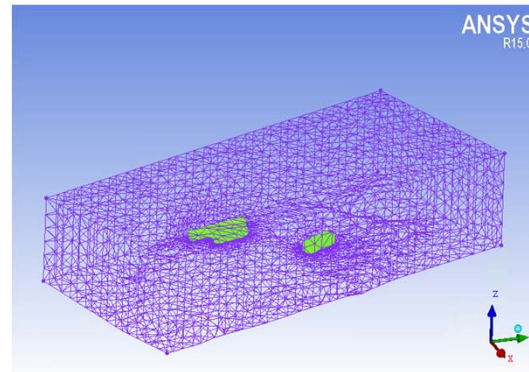
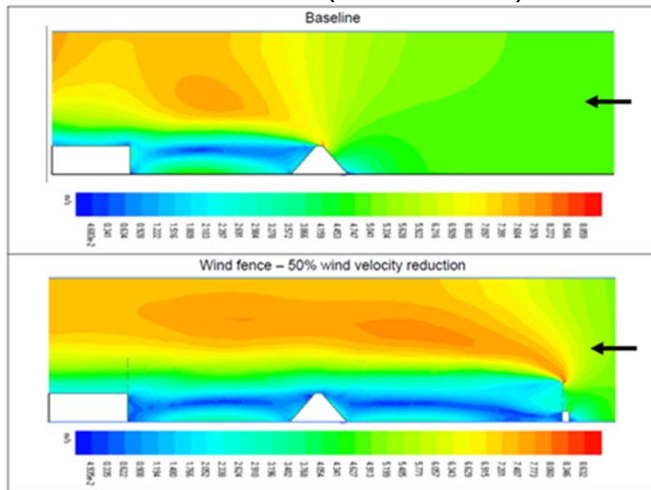


Current fugitive dust reduction studies: Wind barriers

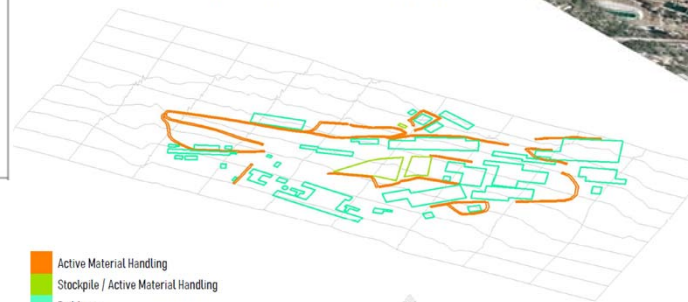


Current fugitive dust reduction studies: Wind barriers, 3-D model for site (underway)

Roaster pad wind fence validation
(28-50% reduction in dusting)
2-D model (2019-2020)



Major Dust Release Sources and Buildings on site



Active Material Handling
Stockpile / Active Material Handling
Buildings