



Air Quality Fact Sheet

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"Teck Trail Operations has made many environmental improvements that have helped the Trail Area Health and Environment Committee meet, and in some cases exceed, its air quality goals. We are committed to continuing to improve our environmental performance and align with provincial, national and global best practices for the health of our local community." Richard Deane, Teck's Manager of Commercial Services and Public Affairs.

What is the Air Quality Program?

The Air Quality Program includes stack and dust emissions reductions from Teck Trail Operations, dust control in the community, ongoing monitoring of air quality and reporting on air conditions. Stack emissions of lead and other metals have been reduced by over 99% since the 1990s and Teck has a multi-year program to reduce "fugitive" dust emissions at the Teck Trail Operations site to further reduce emissions. The health risks from air quality today are considered to be very low. Please read on for more information.

Why is the Air Quality Program important?

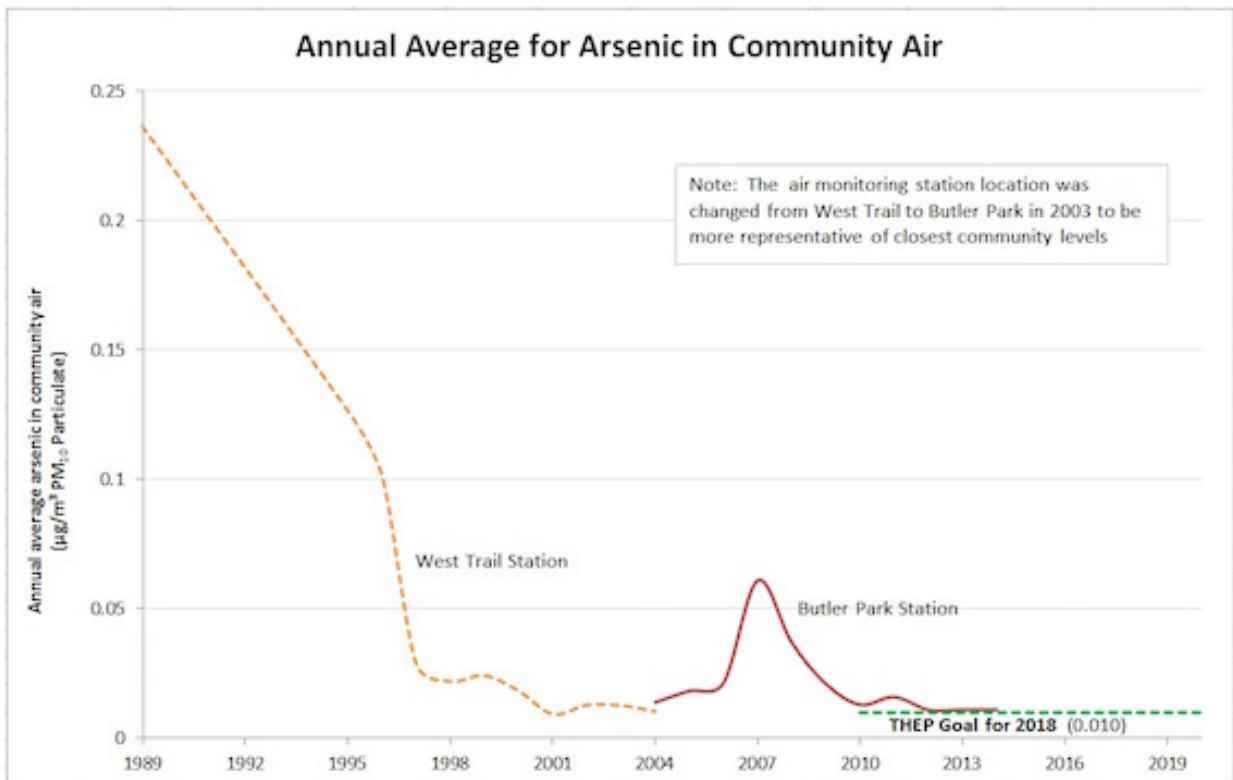
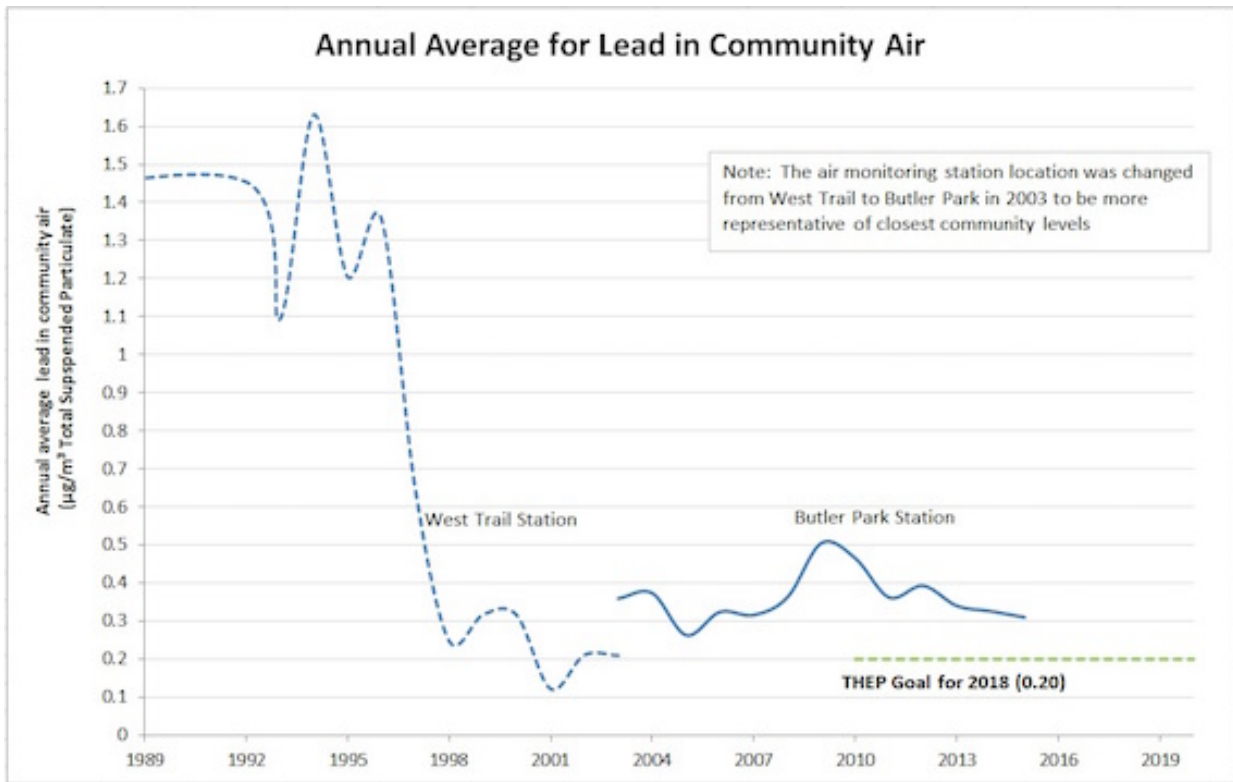
The aim of our program is to prevent children's exposure to lead and reduce children's blood lead levels on a continuous improvement basis. Although young children are mainly exposed to lead through hand-to-mouth activity rather than breathing, much of the lead in dust where they live and play comes from ongoing smelter emissions. Emissions reduction makes the biggest contribution to improving air quality and reducing people's exposure to lead in the community.

How is air quality in the Trail area today?

Currently, air quality meets all applicable regulatory standards for air pollutants such as lead and arsenic, sulphur dioxide, and particulates (smoke or dust) in the air. The main health risks relate to emissions of lead; the risks posed by other smelter-related metals are low. Arsenic in community air is second in importance.

Air quality fluctuates with weather conditions including wind strength and direction as well as temperature inversions during high pressure systems. During temperature inversions, there may be occasional sulphur odours and a slight haze. People with respiratory conditions such as asthma may notice a slight irritation at those times. These situations are addressed immediately by Teck and typically don't last long. Teck monitors air quality continuously and, as needed, takes all necessary steps to maintain air quality. Residents who have concerns about air quality are encouraged to call Teck Environmental Issues at (250) 364-4817, a phone line answered 24 hours a day.

Over the last few years, lead levels in the community's air have averaged around 0.35 $\mu\text{g}/\text{m}^3$ (micrograms per cubic meter of air) and average arsenic levels have been around 0.015 $\mu\text{g}/\text{m}^3$. Our aim is continuous improvement of these levels and meeting specific goals for 2018.



What are the air quality goals?

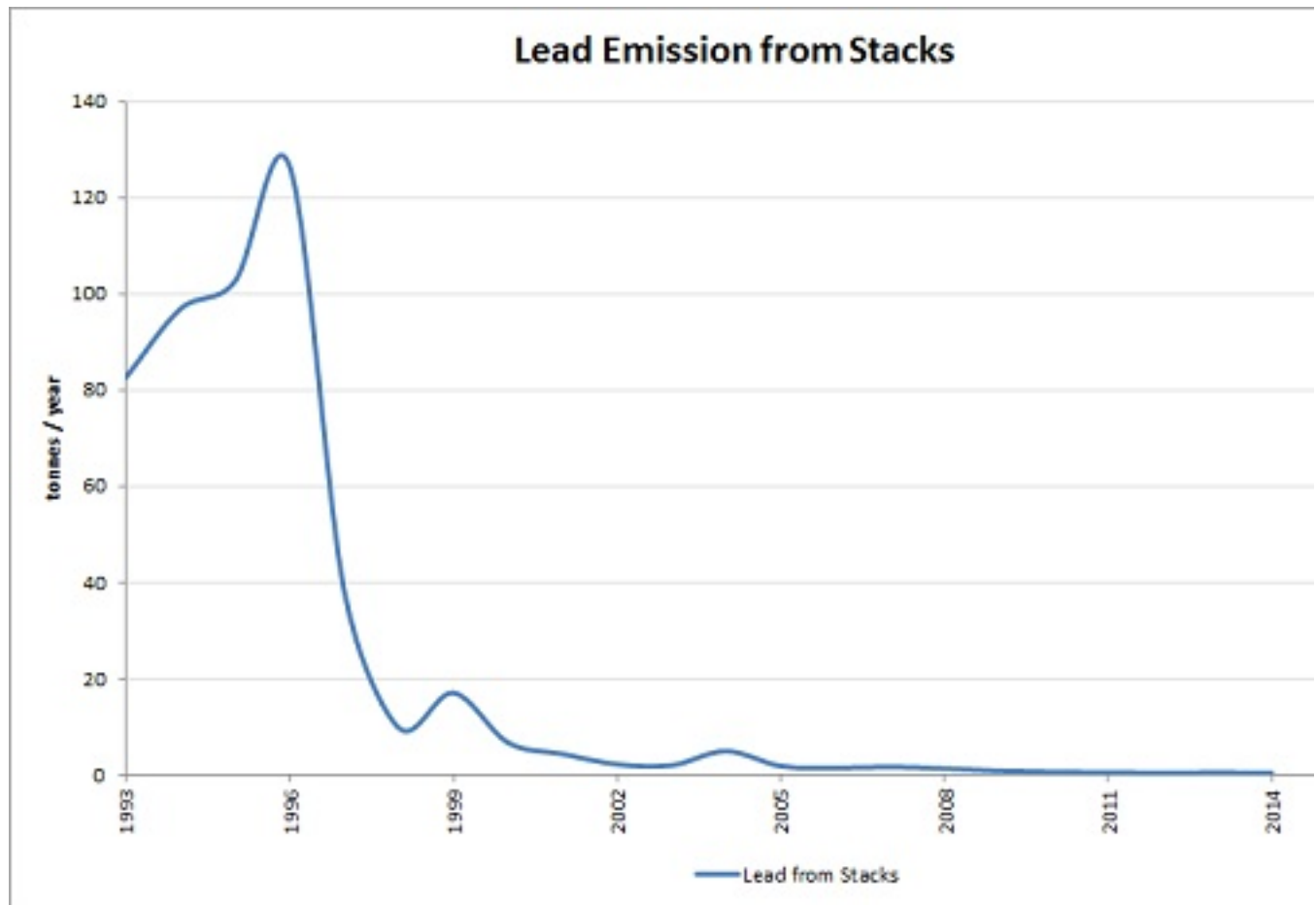
We are always aiming to improve air quality; we consult the public every 5-6 years to make sure there is community support for our air quality goals. In 2010, following public consultation, the Trail Area Health & Environment Committee set new 8 year goals for lead and arsenic in the air. For our 2016 public consultation, we continue to work towards these 2018 goals and continuous improvement to 2020 (and beyond). Future estimates of emissions reduction will be based on the achievements measured in 2018.

The goals are:

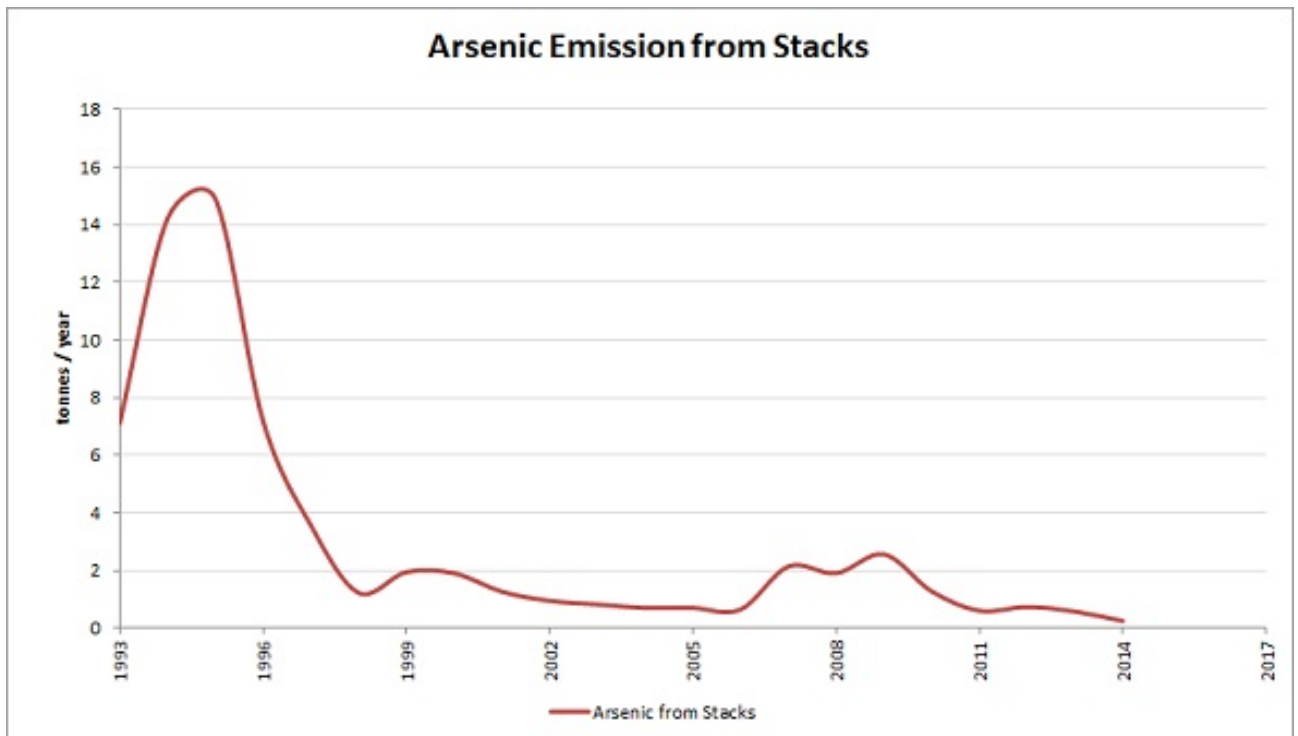
- To have an annual average of lead in community air of $0.20 \mu\text{g}/\text{m}^3$ or lower by 2018, with continuous improvement to 2020.
- To have an annual average of arsenic in community air of $0.010 \mu\text{g}/\text{m}^3$ or lower by 2018, with continuous improvement to 2020.

With these goals, the THEC aims to meet the leading air quality standards in Canada. BC's air quality objectives have not been revised since 1979, while other provinces have set lower standards more recently based on more current scientific knowledge. For lead, Ontario set a new standard of $0.20 \mu\text{g}/\text{m}^3$ (micrograms per cubic metre of air) in 2008. For arsenic, Alberta set a new objective of $0.010 \mu\text{g}/\text{m}^3$ in 2005. In each province, multi-year timeframes were specified for achieving the new requirements.

What has been achieved with air quality?



Air quality has continued to improve through plant modernization and operational improvements at Teck Trail Operations. Air quality has improved significantly since the KIVCET lead smelter was installed in 1997. Emissions of lead and other metals from the smelter stacks have been reduced by over 99% since the 1990s. Children's blood lead levels have decreased significantly over the same time period.



What is Teck doing to reduce emissions?

Emissions reduction includes identifying the main sources of lead and arsenic emissions from the site, and reducing emissions through equipment modernization, enhanced operational processes, and improving maintenance in key areas. Data shows that reducing fugitive dust offers the greatest opportunity to further reduce emissions. Fugitive dust is dust that escapes from buildings, stockpiles, roadways, and other activities on site.

For several years, Teck has had a focused program to reduce fugitive emissions at the Teck Trail Operations site. To date, projects have included construction of two buildings, Tadanac North and the Smelter Recycle Building, at a capital cost of \$50 million to enclose open mixing and storage of metals. Teck has also installed sprinklers around the perimeter of the Roaster Pad area and is investigating other dust controls in this location. Teck has purchased two street sweepers to improve its ability to collect and recycle dust that builds up on roads inside Trail Operations when materials are being transported; Teck has a year-round program of roadway sweeping and flushing on site.

Teck has set goals for internal management and improvement of the pollution control equipment (known as baghouses) that removes particulate from the air. This involves

establishing a consistent management system for operation, maintenance and monitoring, as well as auditing processes to ensure compliance.

Teck is researching and will implement feasible solutions for reducing arsenic sources. A second real-time monitor for metal levels in air is being purchased to further enhance emissions monitoring. Click [here](#) for the most recent update on the Fugitive Emissions Reduction Program.

How is air quality monitored?

Teck monitors air quality in the community in several ways:

Measures of lead, arsenic and other particles in the air are taken at two testing locations in the Lower Columbia: Butler Park and Birchbank. Readings are taken over 24 hour periods.

Dustfall measurements are collected on a monthly basis at Birchbank, Downtown Trail, Columbia Avenue, Columbia Gardens, Tadanac, Trail Hospital, Glenmerry, Oasis, Stoney Creek, Waneta and Warfield.

Sulphur dioxide (SO₂) gas is monitored at four locations throughout the valley - Birchbank, Butler Park, Columbia Gardens and Warfield. These stations operate continuously, with real-time data transmitted back to the operation's process control systems. If the sulphur dioxide levels begin to climb (such as during a weather inversion), the plants are automatically notified so that actions can be taken to reduce sulphur dioxide emissions. In 2010, Teck added a real-time monitor for metal levels in the community's air. It identifies significant metal emission sources and alerts Teck staff to any issues that should be investigated and addressed. This information is collected and analyzed by Teck's environment staff and reported to the Ministry of Environment and the THEC. Regular monitoring helps identify significant emissions sources, track the effectiveness of emissions and dust control efforts, and track progress on air quality goals.

How is dust controlled in the community?

While most towns only clean streets in the spring and fall, the City of Trail performs at least two street sweepings of the whole community in summer as well as weekly sweeping and flushing of the downtown core. Dust suppressant is applied to unpaved alleys in Trail each June. One additional summer sweeping is performed in Rivervale. The roads are flushed with water at the time of sweeping so that dust is not stirred up in the process. During the regular spring sweepings, it is difficult not to stir up dust but the sand applied in the winter does not contain lead, so lead levels on the street are relatively low.

How can I get more information?

For more information on the Air Quality Program, please contact Mark Tinholt, Superintendent, Environmental Remediation, Teck Trail Operations at (250) 364-4385.