

# Air Quality Program FAQ: **Lead (Pb)**

## 1. What is Lead (Pb)?

Lead (Pb) is a naturally occurring element found in small amounts in the earth's crust. You can find lead in various products such as vehicle batteries, radiation protection and soundproofing.

## 2. Why do we have Pb in Trail?

In addition to environmental lead contributions from historical use of products such as lead-based paint and leaded gasoline, Trail is home to one of the world's largest lead and zinc smelting and refining facilities, in operation for over one hundred years. While significant operational improvements have been made to reduce emissions from process stacks and fugitive sources (buildings, stockpiles and roadways), lead and other metals in dust have been dispersed in the Trail area.

Continuous improvement is a key component of Teck Trail Operations Environmental Management System (ISO14001) and emissions reduction activities continue.

## 3. How does Pb affect my health?

Lead exposure can have detrimental effects on early childhood development and children's future outcomes. Lead is most harmful to children younger than age 6 and especially those younger than age 3. A pregnant woman who is exposed to lead can pass it to her baby. Lead can also be passed to a baby through the mother's breast milk. There is no known safe level of lead exposure. Visit [thep.ca](http://thep.ca) to learn about actions you can take to help reduce your family's exposure to lead.

## 4. Who is at highest risk of Pb exposure?

Young children are at highest risk of Pb exposure and its effects because:

- They often put their hands and objects in their mouths.
- They sometimes swallow non-food items.
- Their bodies absorb lead at a higher rate.
- Their brains are developing quickly.

Pregnant women exposed to lead can pass it to the baby. Lead can also be passed to a baby through the mother's breast milk.

## 5. What actions can I take to reduce my family's exposure to Pb in dust?

Primary prevention is the most effective way to prevent lead exposure. Actions you can take to reduce the risk of lead exposure include:

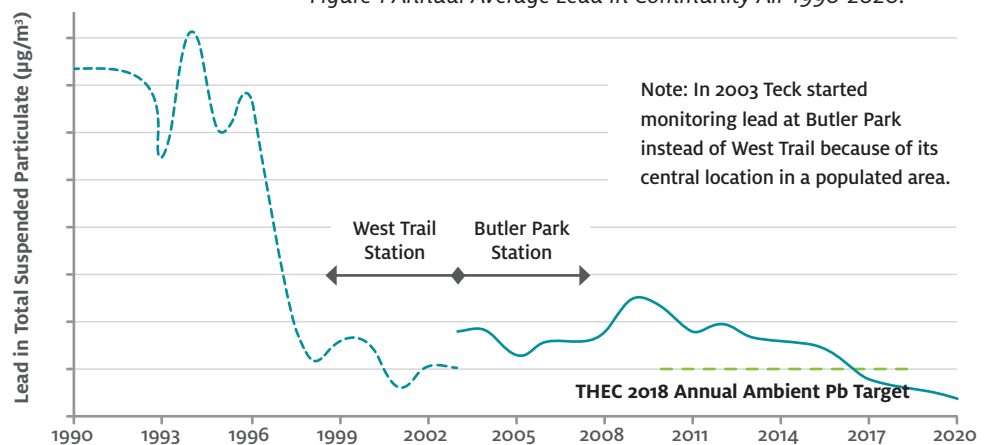
- a. Wash your hands and your children's hands especially before eating and after playing outdoors.
- b. Eat foods that have enough iron and other vitamins and minerals. A person who eats a balanced, nutritious diet may absorb less lead. Eat at the table.
- c. Keep your floors dust-free by vacuuming and damp-mopping often. Leave outside shoes at the door. Damp dust frequently, especially window ledges and countertops.
- d. Keep outdoor play areas clean. Cover the sandbox when you are finished playing. Hose off patios, play equipment, and driveways often. Play on the grass and cover bare soil areas.
- e. Renovate safely. Seal off the area of work, and clean well when complete. Keep children and pregnant women away if possible.

Secondary prevention including blood lead testing and follow-up minimizes further exposure. Trail offers an annual voluntary blood lead testing clinic for children under five years old.

## 6. What are the Pb in air levels in Trail?

As shown in the following chart, lead in air levels have fallen dramatically over the years and in 2020 lead in ambient air averaged 0.07 micrograms per cubic metre, the lowest level to date.

Figure 1 Annual Average Lead in Community Air 1990-2020.



In addition, summary reports are provided at the bi-monthly public Trail Area Health & Environment Committee (THEC) meetings. Meeting minutes are available online. >>

### 7. What are the applicable standards for Pb in air?

Currently, the Federal and BC Provincial governments do not have ambient air quality objectives or standards for lead. However, it is reasonable to rely on standards from other jurisdictions when this is the case and the US EPA has a standard of 0.15 micrograms per cubic metre lead in total suspended particulate matter as a 3-month average. Pb in air levels measured at Butler Park and Birchbank met the US EPA standard of 0.15 ug/m<sup>3</sup> on a 3-month average throughout 2020.

There is no known safe level of lead exposure. The Trail Area Health & Environment Committee (THEC) has a goal of continuous reduction of lead in the community and the partners focus on efforts to achieve this.

### 8. Where is Pb in air monitored?

Teck conducts the following monitoring in the community:

- 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.

This information is collected and analyzed by Teck's environment staff and reported to the Ministry of Environment and Climate Change Strategy as well as the Trail Area Health & Environment Committee (THEC). THEC meetings are open to the public, occur five times per year, and include an air quality report with the most current data available.

In addition to the 24-hour samples collected at Butler Park and Birchbank, Teck also conducts the following monitoring:

- Every hour, analyzers measure metals concentrations at Butler Park and Duncan Flats and transmit readings directly to Trail Operations. Trail Operations immediately responds to any abnormal increase. See question 8 for how these data are used.
- Dustfall measurements are collected on a monthly basis at Birchbank, Downtown Trail, Columbia Avenue, Columbia Gardens, Tadanac, Kootenay Boundary Regional Hospital, Glenmerry, Oasis, Stoney Creek, Waneta and Warfield. These measurements help understand changes in dust settling in the community over time.

### 9. How does Teck Trail Operations use data to manage Pb levels in air in Trail?

Every hour, analyzers measure metals concentrations at Butler Park and Duncan Flats. Near real-time data is transmitted to Teck Trail Operations' process control systems. If Pb levels begin to rise, plants at Teck Trail Operations are automatically notified so that actions can be taken to reduce Pb emissions.

### 10. What is Teck doing to reduce Pb emissions?

Over the past 30 years, there have been significant improvements in community air quality and over \$1.7 billion has been invested in a modernization program to improve our operational and environmental performance at Teck Trail Operations. Since the installation of the KIVCET Smelter in 1997 and subsequent operations improvements at Teck Trail Operations, there has been a 99.5% reduction in stack lead emissions.

The Air Quality Program, one of five programs overseen by the Trail Area Health & Environment Committee, is managed by Teck Trail Operations, and continues to reduce lead in the environment through the comprehensive Fugitive Dust Reduction Program.

Fugitive dust reduction efforts include:

- construction of the Smelter Recycle Building, close to the size of two Canadian football fields, in 2016 to enclose mixing and storage of process feed materials;
- installation of a ten-metre high wind fence reducing dusting where we mix feeds;
- installation of wheel washes and truck washes onsite help reduce tracking of materials onto roads;
- onsite street cleaning, via street sweepers and water trucks, provide a year-round program of roadway sweeping and flushing; and,
- identification and reduction of fugitive dust sources from work activities in our operating plants.

### 11. Who regulates Teck's Pb emissions?

Teck operates under air quality permits issued by the BC Ministry of Environment and Climate Change Strategy (ENV).

### 12. How does Teck share air quality information locally?

Teck shares summary information at the bi-monthly Trail Area Health & Environment Committee (THEC) meetings which are open to the public. All air quality reports are also published online at thep.ca. Lastly, Teck participates in the THEC Air Quality Working Group to share more detailed information on air quality management at Teck and in the community.

### 13. If I have a concern about air quality or health, who do I contact?

Residents who have concerns about air quality are encouraged to call the Teck Community and Environment Feedback line at (250) 364-4817, a phone line answered 24 hours a day.

If you have a health concern specific to lead exposure, please contact THEP Family Health Services at the Kiro Wellness Centre 250-364-5945 or text your public health nurse 250-231-5945.