

**What is arsenic?**

Arsenic is a natural element that can be found distributed throughout the Earth's crust. It is found in arsenopyrite, the same rock in which gold is often embedded. Many areas of Nova Scotia have elevated arsenic levels, not just the gold mine tailing sites.

**How did arsenic get into the environment at old gold mines?**

When gold was mined in Nova Scotia in the late 1800s and early 1900s, the gold-bearing rock that also contained arsenic was crushed and spread over liquid mercury to remove the gold. The mercury was then evaporated, leaving the gold. The remaining sand-like substance, known as tailings, was typically dumped into low-lying areas or lakes and streams near the mine. The arsenic is still present in the tailings.

**What are the health concerns with arsenic?**

Ingestion of arsenic, usually through drinking water, in high concentrations over a short period of time can cause sickness. Over a lifetime, exposure to moderate levels of arsenic may cause certain types of cancer.

**What are you going to do now to protect people?**

We are providing information and advice directly to residents of the two communities who live close enough to dry and open tailings to potentially use them for recreation and play. We will also ensure that warning signs are posted around these sites to inform non-residents who may intend to use them. In future, as we identify more remote sites that show signs of use, we will do the same.

Risk may be reduced during the winter months as the ground freezes and is covered by snow. More investigation will be done as soon as possible to determine next steps - more information will be provided at that time. Until then, it is best to avoid these tailings.

**What are the health risks of arsenic and mercury in these mine tailings?**

It's unlikely that most Nova Scotians are being affected because their level of exposure is probably extremely low. Exposure to arsenic is generally through ingestion. The use of tailing sites for recreational activities make conditions more dusty, increasing the risk of inhaling and swallowing soil. But children simply playing on tailings could be at a greater risk of picking up tailings and swallowing harmful amounts.

Long-term exposure to arsenic at low daily intake and environmental levels may not have any health effects; however, daily exposure to dusty tailing sites could lead to health effects.

In discussion with his medical colleagues, the Chief Medical Officer of Health has not been made aware of recent cases of illness involving excessive exposure to arsenic associated with gold tailings.

### **Can the tailings harm people who breathe the air around tailing sites?**

People need to ingest arsenic for it to be harmful. Conditions at tailings sites used for recreational use may cause a health risk for people breathing in and eating dust.

### **What are the symptoms we could expect?**

The most likely scenario might involve a child who attends an ATV rally, spends the day on the site, plays in the tailings, body-surfs on the dunes, then eats a hotdog and doesn't wash his hands until getting home that night. Later that evening he complains of stomach pain and subsequently develops vomiting and diarrhea. His parents wonder if it might be as the result of a stomach bug or too long in the sun. He wakes up feeling better the next day. It could have been the effects of arsenic.

### **How can I tell if my health has been affected by arsenic or mercury?**

The symptoms are subtle and it takes tests by a doctor to determine if health problems could be associated with arsenic or mercury exposure.

It's not likely that many Nova Scotians are being affected. Gold tailings have been around for many, many years. In discussion with his medical colleagues, the Chief Medical Officer of Health has not made aware of any recent cases of illness involving excessive exposure to mercury or arsenic associated with gold tailings.

### **Are the people living near raceways/tailings at risk?**

Property that is near tailings may be exposed to wind-blown arsenic. Expected exposures would be lower than exposures at the tailings sites.

Risk may be reduced during the winter months as the ground freezes and is covered by snow. More investigation will be done as soon as possible to determine next steps - more information will be provided at that time. Until then, it is best to avoid these tailings.

### **Can the tailings harm children or adults who ingest small amounts?**

Some tailings sites have arsenic levels that are high enough to be a concern for small children who might eat dirt. The best way to reduce risk is to reduce exposure to tailings sites. Normal habits like washing hands frequently and before eating go a long way to protecting health. We recommend this routinely to protect children and adults.

Root crops should not be grown on tailings. Don't use tailings as fill for driveways, gardens, or sandboxes, and remove shoes after being outdoors, so that soil won't be tracked into the house.

People, especially children, should avoid open gold mine tailings.

### **Why aren't you fencing the area?**

Landowners and agencies responsible for crown land are advised of the extent of the risk and are instructed to reduce/eliminate site use by the public. Some may opt to fence the tailings.

If, come spring, we find people are not staying away from the areas, fencing areas of highest risk may be looked at. However, the key point is that people should stay off gold mine tailings to avoid any risk.

### **How can I tell if I have arsenic in my water?**

Arsenic is a concern in drinking water, but can be easily detected with the regular testing that all private well owners should do. Treatment technologies are also available to remove arsenic and make the water safe to drink.

### **Have the tailings contaminated public or private drinking water supplies?**

Public drinking water supplies are tested regularly. They test for arsenic already because it's naturally occurring throughout the province. If arsenic is present in the water, technology is put in place to treat the water and make it safe to drink. Private well owners are responsible for testing their water and treating if necessary. A list of testing professionals is available on Environment and Labour's website or by calling one of our local offices.

### **Is it harmful to eat produce grown in contaminated soil or watered with contaminated water?**

Fruits and vegetables should always be washed before consumption. Most produce would not absorb chemicals from the soil or from water used to help them grow, so washing off soil and dust is sufficient. Root vegetables grown directly in tailings may absorb more chemicals, so eating them should be avoided.

These recommendations are for private gardens. No commercial agricultural operations are located near the tailing sites.

### **Is it harmful to bathe or cook with water contaminated with arsenic?**

It is not harmful to bathe in water with arsenic in it. The issue is ingestion, so food should not be prepared with water that has arsenic in it. Technology is available to treat well water to remove the arsenic.

### **Who should I call if I want myself or my children tested?**

Testing for arsenic is available. A urine sample is useful in detecting recent exposure to arsenic, but it does not persist long in urine after the exposure. The test result is best understood if the type of exposure is known. To understand exposure over time, hair can be tested, but some arrangements need to be made. If we find that a specific area is at risk and we determine testing is necessary, we will notify residents of the area and coordinate testing.

**What kind of risk do I have if my home is built on tailings or close to a tailing site?**

Likely very little. Anyone on public drinking water supplies has clean water. Private well owners who test their water as they should and treat if necessary have clean water. Land that is properly landscaped with sodding and topsoil, or pavement, is an important barrier to exposure.

**Should I go to my doctor if I think I'm at risk?**

There is insufficient evidence at this time to suggest that medical testing for arsenic is necessary for any individuals. If we determine a specific area of concern and we determine testing is necessary, we will notify residents of the area and coordinate testing.

In discussion with his medical colleagues, the Chief Medical Officer of Health has not been made aware of recent cases of illness involving excessive exposure to arsenic associated with gold mine tailings.

**Who can I call for more information?**

There are numerous provincial and federal agencies in our group of experts. To reach one of them for specific questions, Nova Scotians can call the provincial public inquiries line: 424-5200 or 1-800-670-4357. Calls will be directed to the appropriate agency for answers.