Arsenic is commonly associated with deadly toxins since it was a poison of choice throughout history. Arsenic is a metal that naturally occurs in certain rocks formations and soil layers. It is commonly found mixed with gold, copper and silver ores and is released naturally into air by volcanoes emissions. Most arsenic compounds are odourless, tasteless and readily dissolve in water.

Despite being known as a vicious poison, arsenic has many applications in industry, notably in wood-preservatives, fireworks and microchips. Because of its toxic effects, arsenic is also used in insecticides, fungicides, herbicides and pesticides. Significant quantities of arsenic are also released from mining operations. In Canada, smelting of copper and nickel was the largest source of arsenic emissions into air until the early 1980s when smelting processing improved.

Arsenic is a toxic compound that is considered carcinogenic (cancer-causing). Arsenic can also lead to blindness, heart failure, gastrointestinal illness, and fetal malfunctions. Arsenic can also cause serious damage to plants, inhibit crops, and cause malfunctions in amphibians. Arsenic in drinking water is absorbed by the body when water is swallowed. Dissolved arsenic in water does not enter the body through skin contact or by inhalation during bathing.

Arsenic compounds can readily dissolve from rocks or precipitate in rainfall and leach into groundwater. Some places around the world have high levels of naturally occurring arsenic in groundwater, most notably Bangladesh and surrounding countries. Generally, arsenic levels in groundwater are significantly higher than surface water.

The Canadian Drinking Water Quality Guidelines has a limit of 0.01 mg/L (ppm) for arsenic in drinking water. Most water sources across Canada have arsenic levels below the guidelines, yet there have been isolated incidents where arsenic levels where high. For instance, in parts of Nova Scotia arsenic was a concern in the 1970s due to the high naturally occurring arsenic in groundwater. Arsenic levels above the drinking water guidelines were also found in rural community wells in central and northern British Columbia. Sampling of groundwater between 1977 and 1993 showed that 2.2% of samples had arsenic levels above the guideline limits.

If you are a well owner living near an area known to have naturally high levels of arsenic, Health Canada recommends that you get the groundwater tested. In order to do so, contact your local public health office. Arsenic cannot be filtered from water using conventional sediment or activated carbon filters. However, arsenic can be removed using reverse osmosis, iron filters or ion exchange resins (water softeners). If arsenic levels are found to be larger than 0.01 ppm, then a second test should be performed to confirm the laboratory analysis. If arsenic levels are confirmed to exceed the guidelines, an appropriate treatment system should be installed. It is recommended that the system meet the NSF standards for arsenic removal.