

ARSENIC IN PRIVATE WATER WELLS FREQUENTLY ASKED QUESTIONS



Q: What are the sources of arsenic in water wells?

A: Arsenic is a naturally occurring mineral found in the environment and is a by-product of some agricultural and industrial activities. It can enter groundwater through erosion, or as runoff into surface water sources. Higher levels of arsenic may be found in wells that are in or just below large shale formations, or in soils with higher shale concentration.

Q: What are the potential health effects from drinking water containing arsenic?

A: Arsenic poisoning can easily go undetected because its symptoms are like other illnesses. Ingesting very high levels of arsenic can result in death. Ingesting lower levels can cause nausea and vomiting, skin damage, abnormal heart rhythm, decreased production of red and white blood cells, and a tingling sensation in hands and feet. The United States Department of Health and Human Services and the Environmental Protection Agency (EPA), as well as the International Agency for Research on Cancer, consider inorganic arsenic to be a cancer-causing agent in humans. Ingestion of arsenic can increase the risk of skin, liver, bladder and lung cancer. The Kansas Department of Health and Environment assessed the rates for all cancers combined and these specific cancers for Hamilton, Kearny and Finney counties and did not find higher rates for these cancers compared to the state.

Q: What levels are considered acceptable for arsenic found in water wells?

A: For public water supply systems, the EPA established a maximum drinking water contaminant level of 10 parts per billion (ppb). For more information on how this contaminant level was developed, please refer to EPA's National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring: <https://www.federalregister.gov/documents/2001/01/22/01-1668/national-primary-drinking-water-regulations-arsenic-and-clarifications-to-compliance-and-new-source>.

Q: Should I test my private water well for arsenic?

A: If you use your private well for drinking water purposes you should have your well tested. You can contact your local KDHE district office to ask for assistance in sample collection and testing (http://www.kdheks.gov/befs/dist_office.html). Additionally, you can go to KDHE's Private Water Well website http://www.kdheks.gov/wellwateraware/local_resource_map.htm to access contact information for certified water well testing labs, sampling protocols, testing procedures and guidance documents.

Q: What if my test shows elevated levels of arsenic in my private well? How do you treat it and what are the costs?

A: If elevated levels are found, consider using bottled water for drinking and cooking, research how to connect your home with a local public water supply or consider in-home treatment methods.

Effective treatment methods include: activated alumina, distillation, reverse osmosis, and anion exchange. Please visit <http://wellowner.org/water-quality/arsenic/> for more information on treatment for homeowners, including estimated treatment costs.

Q: Are the public water supplies in my community safe?

A: Yes. The Safe Drinking Water Act (SDWA) authorizes and permits EPA to set national standards for drinking water contaminants. Through the Kansas Department of Health and Environment all public water supply systems are required to monitor and comply with those standards.

Q: Are there ways to mitigate the health impacts for people who have been consuming contaminated water for a long period of time?

A: Arsenic is considered a carcinogen and may be associated with skin, liver, bladder and lung cancer depending on if people encountered the contaminant through breathing (inhalation), eating or drinking (ingestion) or contact with the skin (dermal). Arsenic is mainly excreted in the urine. Whether or not a person develops health effects will also depend on a number of other factors including diet, family history, lifestyle, general health status, smoking status, and exposures to other contaminants. If you are concerned, you should talk to your health care provider about all of these factors and develop a plan for screening.

Q: If livestock drink contaminated water is the meat or milk contaminated?

A: The brevity of lifetime for cattle limits the time for any mineral residue buildup. There are no studies that show a mineral buildup in the meat or milk.

Q: If root vegetables are grown in areas with soil or water contamination is it safe to eat?

A: The brevity of lifetime for plants limits the time for any mineral residue buildup. Generally, if the amount measured in soil and water used to grow produce is low, the amount deposited in the produce would likely fall below the detection limits.

Sources:

- Agency for Toxic Substances and Disease Registry. 2007. Toxicological Profile for Arsenic (Update). Atlanta, GA: US Department of Health and Human Services. Available at <https://www.atsdr.cdc.gov/toxprofiles/tp2.pdf>. Accessed on July 13, 2019.
- U.S. EPA. Undated. Arsenic Fact Sheet. Available at <https://safewater.zendesk.com/hc/en-us/sections/202366558-Arsenic>. Accessed July 15, 2019.
- Water Systems Council. 2016. Wellcare® information for you about Arsenic & Groundwater. Available at https://www.watersystemscouncil.org/download/wellcare_information_sheets/potential_groundwater_contaminant_information_sheets/Arsenic_Updated-August-2016.pdf. Accessed on July 13, 2019.