

SELENIUM IN PRIVATE WATER WELLS FREQUENTLY ASKED QUESTIONS



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

A: Selenium occurs naturally in the environment and can be released by both natural and manufacturing processes. It also enters water from rocks and soil, and from agricultural and industrial waste. Some selenium compounds will dissolve in water, and some will settle to the bottom as particles. The major sources of selenium in drinking water are discharge from petroleum and metal refineries, erosion of natural deposits, and discharge from mines.

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

A: Selenium is a trace mineral needed in small amounts for good health. Short-term ingestion of high concentrations of selenium may cause nausea, vomiting, and diarrhea. Long-term exposure to high concentrations of selenium compounds can produce a disease called selenosis. Some people who drink water containing selenium well in excess of the maximum contaminant level (MCL) for many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

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

A: For public water supply systems, the United States Environmental Protection Agency (US-EPA) established a maximum drinking water contaminant level of 50 parts per billion (ppb) for selenium. For more information on how this contaminant level was developed please refer to EPA's Federal Register 40 CFR Parts 141, 142, and 143 National Primary Drinking Water Regulations; Synthetic Organic Chemicals and Inorganic Chemicals; Final Rule: <https://www.govinfo.gov/content/pkg/FR-1991-01-30/pdf/FR-1991-01-30.pdf>

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

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 selenium 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.

Common treatment methods include activated alumina, coagulation/filtration, lime softening, reverse osmosis, and electro dialysis. Please visit https://www.watersystemscouncil.org/download/wellcare_information_sheets/well_water_testing_&_treatment_information_sheets/DrinkingWaterTreatmentsandCostsFINAL.pdf for more information on treatment for homeowners, including estimated treatment costs. For a current list of reverse osmosis units NSF (National Sanitation Foundation) International certified for treatment of selenium, visit <http://info.nsf.org/Certified/DWTU/Listings.asp?ProductFunction=058%7CSelenium+Reduction&>. There are no other products currently NSF International certified for treatment of selenium.

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: Whether this contaminants will have an impact on your health or the health of your family will depend on a number of factors including how high the concentrations are, how long you have been exposed to contaminated water, and whether you were exposed by drinking, breathing in, or touching contaminated water. Whether or not a person develops health effects will also depend on a number of other factors including diet, 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. 2003. Selenium ToxFAQs™. Available at <https://www.atsdr.cdc.gov/toxfaqs/tfacts92.pdf>. Accessed on July 13, 2019.
- United States Environmental Protection Agency. Undated. Selenium Fact Sheet. Available at <https://safewater.zendesk.com/hc/en-us/sections/202346227>. Accessed on July 13, 2019.