

MANGANESE IN PRIVATE WATER WELLS FREQUENTLY ASKED QUESTIONS



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

A: Manganese is a common element in the earth's crust. Minerals containing manganese dissolve over time and are released into groundwater. Manganese is also used in steel production and is a gasoline additive.

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

A: Manganese is an essential nutrient. The United States Environmental Protection Agency (US-EPA) considers manganese a secondary water contaminant, with no direct threat to human health. However, children are potentially more susceptible to health effects from ingesting high concentrations of manganese.

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

A: The EPA has developed a health advisory level (HAL) for manganese in drinking water of 0.3 milligrams per liter (mg/L) which is intended to be protective of life-time exposure for the general population. Infants should not consume water containing 0.3 mg/L of manganese.

The US EPA recommends that the general population should not ingest water with manganese concentrations greater than 1.0 mg/L for more than a total of 10 days per year. Much lower manganese levels in water can result in noticeable staining and taste complaints. It is for this reason that the EPA has a secondary drinking water guideline of 0.05 mg/L.

For more information on these health advisories, please refer to the 2018 Edition of the Drinking Water Standards and Health Advisories Tables: <https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>.

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

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 manganese 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 methods for homeowners to remove manganese are shock chlorination, activated carbon filtration, and oxidizing filtration. 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 guidance on shock chlorination, visit http://www.kdheks.gov/download/disaster_recovery/Shock_Chlorination_for_Private_Systems.pdf.

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

A: Yes. The Safe Drinking Water Act (SDWA) authorizes and permits the 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. Health advisory levels are not enforceable standards; however, it is recommended not to drink water that has manganese above 0.3 mg/L. For more information on secondary drinking water standards go to <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals#table-of-secondary>.

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

A: Excess manganese is usually removed from the body within a few days. Whether this contaminant 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. 2012. Manganese ToxFAQs™. Available at <https://www.atsdr.cdc.gov/toxfaqs/tfacts151.pdf>. Accessed on July 13, 2019.