

TOTAL DISSOLVED SOLIDS IN PRIVATE WATER WELLS **FREQUENTLY ASKED QUESTIONS**



Q: What are the sources of total dissolved solids in water wells?

A: Total dissolved solids (TDS) refers to the total amount of all substances, including minerals, salts, metals, and ions, that are dispersed within a volume of water. There are many sources for TDS in groundwater, including agricultural and urban stormwater run-off, industrial wastewater, sewage, and natural sources such as leaves and rocks. Older plumbing may also release metals into the water.

Q: What are the potential health effects from drinking water containing total dissolved solids?

A: The United States Environmental Protection Agency (US-EPA) considers total dissolved solids a secondary water contaminant, with no direct threat to human health. However, water with a high TDS concentration may indicate elevated levels of ions that do pose a health concern, such as aluminum, arsenic, copper, lead, and others, so additional testing may be needed.

Q: What levels are considered acceptable for total dissolved solids found in water wells?

A: For public water supply systems, the EPA established a secondary maximum contaminant drinking water level of 500 milligrams per liter (mg/L), or 500 parts per million (ppm), for total dissolved solids. The National Secondary Drinking Water Standard is a non-enforceable guideline regarding contaminants that may cause cosmetic or aesthetic effects in drinking water. 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: Should I test my private water well for total dissolved solids?

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 total dissolved solids 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.

Treatment options depend on the nature of the cations and anions present in the water. Common methods for homeowners to remove total dissolved solids include ion exchange (water softener), reverse osmosis and distillation. 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 total dissolved solids, visit <http://info.nsf.org/Certified/DWTU/Listings.asp?ProductFunction=058%7CTDS+Reduction&>. There are no ion exchange or distillation products currently NSF International certified for treatment of total dissolved solids.

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. There is no contamination standard for total dissolved solids because it is considered a secondary water contaminant.

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

A: Because a high TDS concentration may indicate the presence of contaminants like arsenic, copper, and lead, you should have additional testing done to determine which contaminants are in your private well water. Whether these 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, 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:

Water Systems Council. January 2007. Wellcare® information for you about Total Dissolved Solids (TDS). Available at https://www.watersystemscouncil.org/download/wellcare_information_sheets/potential_groundwater_contaminant_information_sheets/2010920TDS_FINAL.pdf. Accessed on July 11, 2019.