SPECIFIC CONDUCTIVITY IN PRIVATE WATER WELLS FREQUENTLY ASKED QUESTIONS

Kansas Department of Agriculture | Kansas Department of Health and Environment | Kansas Water Office

Q: What are the sources of specific conductivity in water wells?

A: Conductivity is a measure of the ability of water to pass an electrical current. Dissolved salts and other inorganic chemicals conduct electrical current, so high conductivity can indicate high salinity. Conductivity also increases with increasing water temperature. Groundwater in areas with granite bedrock tends to have lower conductivity while groundwater in areas with clay soils tends to have higher conductivity.

Q: What are the potential health effects from drinking water containing high specific conductivity?

A: High levels of conductivity indicate higher concentrations of dissolved inorganic compounds, some of which may pose health concerns, so additional testing may be needed. Significant changes in conductivity could indicate that pollution has entered the water.

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

A: The EPA has not determined limits for specific conductivity of drinking water. Conductivity is measured in micromhos per centimeter or microsiemens per centimeter (the units are equivalent). The conductivity of distilled water ranges from 0.5 to 3 micromhos per centimeter. Worldwide, drinking water limits for specific conductivity range from 170 to 2700 micromhos per centimeter.

Q: Should I test my private water well for specific conductivity?

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 specific conductivity in my private well? How do you treat it and what are the costs?

A: Treatment options depend on the nature of the dissolved compounds present in the water. 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.

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

A: Yes. The Safe Drinking Water Act (SDWA) authorizes and permits the Environmental Protection Agency (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 specific conductivity. 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.

Sources:

- EPA. Undated. Water: Monitoring & Assessment. Available at https://archive.epa.gov/water/archive/web/html/vms59.html. Accessed on July 15, 2019.
- World Health Organization. 2018. A global overview of national regulations and standards for drinking-water quality. Available at https://apps.who.int/iris/bitstream/handle/10665/272345/9789241513760-eng.pdf?ua=1. Accessed on July 15, 2019.