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FOR PROJECT DETAILS: Visit <https://denr.sd.gov/des/dw/Manganese.aspx>

Manganese in Drinking Water

PIERRE, S.D. – The Department of Environment and Natural Resources (DENR) is reviewing available manganese data from regulated public drinking water systems to determine if levels are higher than EPA health advisory levels published in 2004. EPA has never established a drinking water standard for manganese, but has renewed their interest by requiring drinking water systems serving 10,000 or more people to collect manganese data through their fourth round of sampling for the Unregulated Contaminant Monitoring Rule (UCMR4).

To date, only one public water supply system in South Dakota has been required to take actions due to elevated manganese levels. The city of Pierre issued a drinking water advisory on March 27, 2019, which states that high levels of manganese can be mitigated with a properly maintained in-home water softener or reverse osmosis treatment system. The advisory pertains only to those customers served by the city's system which pulls ground water with high manganese levels out of the shallow aquifer along the Missouri River. Nearby systems operated by Fort Pierre, Mid-Dakota, Mni-Wiconi, and West River/Lyman Jones Rural Water are not impacted because they pump water from the Missouri River.

Under the health advisory, for infants up to 6 months of age, EPA identified that water with manganese levels equal to or less than 0.3 mg/L for more than 10 days per year have shown no adverse health effects and can be used for making formula. For the general population, EPA identified that water with manganese levels equal to or less than 1.0 mg/L over a 10 day exposure has shown no adverse health effects. Much lower levels of manganese in drinking water can result in noticeable staining and taste complaints. It is for this reason EPA has a secondary drinking water guideline of 0.05 mg/L.

Too much manganese can increase the risk of health problems, particularly for infants under 6 months old. Infants are more at risk than older children and adults because their brains and bodies are developing quickly. Formula-fed infants get enough manganese from formula to meet their dietary needs. However, they may get too much manganese (above the recommended amount for nutrition) in their bodies when formula is mixed with water that contains high levels of manganese.

Manganese is a common, naturally occurring mineral found in rocks, soil, and water. It is also a natural component of most foods and is an essential nutrient for our bodies. For more information about manganese in drinking water, DENR has posted a manganese web page at <https://denr.sd.gov/des/dw/Manganese.aspx>