

Significance Of Iron And Manganese In Drinking Water

Drinking Water Standards

The U.S. Environmental Protection Agency (EPA) sets national standards for public drinking water supplies (PWS). Primary drinking water standards are health-related and are legally enforceable. Public water supplies must meet these primary standards.

Secondary drinking water standards are non-enforceable guidelines for contaminants that, in concentrations above the standard, may cause objectionable cosmetic effects to the water, such as taste, color or odor, but will not cause adverse health effects. Iron and manganese are two elements with a secondary standard.

Iron

Iron is a naturally occurring element. EPA's secondary drinking water standard for iron is 300 ug/L (1 ug/L is 1 microgram per liter (of water) and is also equal to 1 part per billion). Above 300 ug/L, water will become a reddish-orange color. As the amount of iron in the water increases, the color deepens. A public drinking water supply cannot be required to supply water with iron below any particular level; however, systems are advised that iron over 300 ug/L will cause their water to be discolored.

Manganese

Manganese is another naturally occurring element that is often detected in drinking water supplies. EPA's secondary drinking water standard for manganese is 50 ug/L. At this concentration water may be cloudy, milky colored, and form black precipitates. Manganese at this concentration may also contribute to mineral deposit in pipes, cause difficulty with sudsing, and darken or stain clothing during washing. Detergents do not remove these stains. Chlorine bleach and alkaline builders (such as sodium and carbonate) may even intensify the stains.

There is not a published level at which manganese causes health problems. At 50 ug/L of manganese, drinking water systems are advised that problems with taste and color of water can occur.

You can have the well water at your home tested for these contaminants. For more information, contact DEQ's State Environmental Laboratory at (405) 702-1000 or (866) 412-3057.

