

Mayor

Kevin Stenson

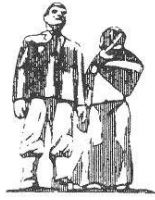
Council Members

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CITY OF LINDSTRÖM

"America's Little Sweden"

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Drinking Water Management – Manganese

The City of Lindstrom diligently monitors the drinking water from our wells and conduct routine testing to ensure the safety of our water to our residents. It has been brought to our attention that there have been concerns regarding the levels of manganese in the drinking water.

We follow the guidelines set forth by the Environmental Protection Agency (EPA) and the Minnesota Department of Health (MDH). Our cities' wells are regularly tested for over 100 contaminants that could cause concern for you and your families' health. Contaminants such as bacteria, nitrate, pesticides, solvents, and metals are tested.

The EPA has established two sets of drinking water regulations. The National Primary Drinking Water Regulations (NPDWRs) set mandatory water quality standards. These enforceable standards called "maximum contaminant levels" (MCLs). The MCLs are established to protect the public against consumption of drinking water that presents a risk to human health. The second set of drinking water regulations are the National Secondary Drinking Water Regulations (NSDWRs). These secondary regulations are non-mandatory water quality standards for 15 contaminants. These standards are not enforced as they are a guideline to assist in managing drinking water aesthetic considerations, such as taste, color, and odor. These contaminants are not considered a risk to human health at the "secondary maximum contaminant level" (SMCL).

Manganese is a secondary contaminant. It can cause the water to have a black to brown color, may cause staining in fixtures, and have a bitter metallic taste. There are several options to treat the secondary containment of Manganese.

- Manganese can collect at a dead end water pipe, or if the home's pipes are not used frequently (overnight sometimes). You can try running the water until the water runs clear.
- Point of Use Treatment Systems such as home water treatment systems or softening systems can be very effective at removing manganese depending on the type of system chosen. Some systems like carbon pitcher filters can be inexpensive.
- Chemical Feed Systems are another option. This uses chemicals, such as polyphosphates to keep the contaminants suspended in solution, but it does not remove the contaminants. This type of system would require injection pumps, chemical storage and a building. Budgetary costs for this would average around \$100,000. Keep in mind that iron and manganese sequestration is only effective until the water is heated (for example, at the domestic water heater); then the manganese will settle out of solution and deposit on home appliances & fixtures.
- A Water Treatment Plant is another option. Types of treatment included would be oxidation-detention-filtration, ion exchange, lime processes, manganese-greensand filtration, etc... For a water system the size of Lindstrom's, a budgetary cost for a treatment plant to remove iron and manganese would start at around \$2,000,000 to \$3,000,000 for a single water source and could increase to over \$5,000,000 for a treatment plant treating multiple sources.
- Operational Modifications. Contaminant concentrations can vary not only from well to well, but from separate aquifers (rock layers) within each of the water supply wells. The City's Public Works Department currently is monitoring the manganese concentrations at our two municipal wells and are experimenting to attempt to determine if the well pumping level has any influence on the manganese concentrations. To date, there has not been any correlation, but we are continuing to investigate the issue.

For more information, please contact us at 651-257-0620.