

Cross Connections

A cross connection is an arrangement of piping which could allow undesirable water, sewage, or chemical solutions to enter your drinking (potable) water system as a result of a backflow. Cross connections with potable piping systems have resulted in numerous illnesses and even death.

Historically, cross connections have been one of the most serious public health threats to a drinking water supply system, and many times are present in a residential water system.

What is a backflow and how can it occur?

Backflow is the reversal of normal flow in a system due to backsiphonage or back pressure.

Backsiphonage backflow occurs when a vacuum is induced on a piping system, just like drinking from a glass with a drinking straw. A garden hose or a hose connected to a laundry tub can act as a “drinking straw” allowing undesirable liquids to be drawn through it by backsiphonage. Some typical situations which cause backsiphonage action include:

- water main breaks or repairs occurring in the system at a point of lower elevation than your service point
- high water flow rates exerted on a water main due to firefighting, hydrant flushing, large system demands, or major piping breaks
- booster pumps taking direct suction from potable water supply piping
- undersized piping

Whenever the drinking water supply system is directly connected to another piping system or process which operates at a higher system pressure, backpressure backflow can occur. Typical causes of backpressure backflow include:

- non-potable piping systems equipped with pumping equipment (irrigation well interconnected with potable system, for example)
- steam or hot water boilers
- heat exchangers

What is the law?

Cross connections with potable piping systems are prohibited by state plumbing codes. Additionally,

Michigan water utilities are required to have a Cross Connection Control Inspection Program of their water customers to eliminate and prevent cross connections. Common commercial and industrial users posing a public health threat include:

- industries with chemically treated boilers
- plating operations, chemical processing plants
- funeral homes, mortuaries
- marine facilities
- hospitals, nursing homes
- research laboratories
- car washes, laundromats
- school facilities

This list is not all inclusive and East Tawas has made inspections of any facilities that may cause a threat to the public water system and have taken corrective action where necessary.

What hazards threaten the homeowner?

Many common household uses for water pose a public health threat to the potable water supply system whether the home is supplied by municipal water or by a private well. Principal areas of water use in the home that pose a threat due to cross connections are:

- a hose connection to a chemical solution aspirator to feed lawn/shrub herbicides, pesticides, and fertilizers
- lawn irrigation systems
- chemically treated heating systems
- water softeners
- hose connections to a water outlet or laundry tub
- swimming pools
- solar heating systems
- private non-potable water supplies
- non-code (siphonable) ball cock assemblies in toilets
- water-operated sump drain devices

This list of potential cross connection hazards is by no means complete. A private residence that has one or two of these situations is seriously jeopardizing its own potable water system and that of the community if it is served by a public water supply system.



City of East Tawas

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Home Irrigation Backflow Prevention

Irrigation systems make watering lawns easier and consistent, and save you time. However water that could be contaminated by fertilizers and weed killers can be backsiphoned into your drinking water. Irrigation systems that are not protected by approved backflow prevention assemblies could endanger the health of your household, neighborhood or community.

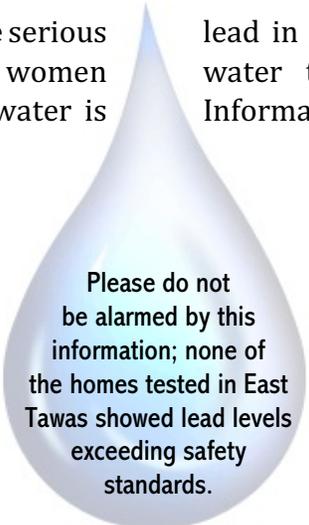
ALL IRRIGATION SYSTEMS, new or existing, must be equipped with an approved backflow prevention assembly. Only properly installed, State approved backflow prevention assemblies meet the plumbing code and provide health protection for your family and neighbors. The Iosco County Building Department can give provide you with the information for State approved assemblies.

ALL IRRIGATION SYSTEMS supplied by public water systems require backflow prevention and therefore require a plumbing permit from the Iosco County Building Department before installation. All piping and materials that are upstream of (before) the backflow prevention assembly must be of a type which is approved by the STANDARD PLUMBING CODE.

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Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of East Tawas and Huron Shore Regional Utility Authority personnel are responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for at least 30 seconds before using water for drinking or cooking. If you are concerned about



Please do not be alarmed by this information; none of the homes tested in East Tawas showed lead levels exceeding safety standards.

lead in your water, you may wish to have your water tested at the water treatment plant. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline by calling (800) 426-4791 or online at <http://www.epa.gov/safewater/lead>.

The City of East Tawas has been testing homes with plumbing systems that could contribute lead to the household water supply for several years. The City tests 12 homes every 3 years and none of the homes tested have exceeded the action levels for lead or copper.

Educational Information About Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested at the water treatment plant and/or flush your tap for at least 30 seconds before using tap water. Additional information is available from the Safe Drinking Water Hotline by calling (800) 426-4791 or online at <http://www.epa.gov/safewater/lead>.