Drinking Water Regulations

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) adopts regulations that limit the amount of individual contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide similar protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate drinking water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

Source Water Evaluation

In 2003 the Iowa Department of Natural Resources (IDNR) completed a source water evaluation for Ames. The evaluation determined that Ames’ groundwater has the potential to be contaminated by leaking underground storage tanks, landfills, or improper hazardous waste disposal. As water travels over the surface or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. Also, water can pick up substances resulting from human and animal activity. The City of Ames works diligently to ensure that contamination does not impact the Ames water supply. Interested citizens can view the IDNR source water evaluation at http://www.cityofames.org or purchase a copy at the City of Ames Water Plant.

Special Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA’s Safe Drinking Water Hotline (800-426-4791).


Tips for Dishwashers in a Phosphate-Free World

After running the dishwasher, customers have reported a “white film” on the dishes and silverware or tarnishing of metal utensils. They assume that “something has changed” and understandably guess that it has to do with the drinking water. Something has changed, but not with the water. On July 1, 2010, dishwashing detergent manufacturers removed phosphates from their products in response to new legislation in several states.

Phosphates were included in the old formulas for a very simple reason: They make effective detergents. Phosphates were included in the old formulas for a very simple reason: They make effective detergents. They assume that “something has changed” and understandably guess that it has to do with the drinking water. Something has changed, but not with the water. On July 1, 2010, dishwashing detergent manufacturers removed phosphates from their products in response to new legislation in several states.

Phosphates were included in the old formulas for a very simple reason: They make effective detergents. However, nutrients such as phosphorus can also be difficult environmental problems to overcome. Soaps and detergents without phosphates have less of an impact on the environment but can be less effective at cleaning dishes. More and better dishwasher cleaning products are coming to shelves and are proving very effective in overcoming the effects of non-phosphate detergents. Below are some of the active ingredients used in store-bought detergents that Ames residents have said are effective. Also included are some proven home remedies that have been used with some success.

Active Ingredients (Store-bought Detergent)

- Citric Acid
- Sodium Percarbonate
- Oxalic Acid
- Enzymes

Home Remedies

- Vinegar – Addition of 1 part to 1 cup of vinegar to the dishwasher detergent. Vinegar can affect metal items, so it is not recommended for them. White vinegar works fine for flatware.
- Borax – Add 1/2 cup borax to the bottom of the dishwasher along with detergent.
- Instead of rinse aid, use the powder from a citrus drink mix. Orange and lemonade drink powders work fine for flatware.

According to John Dunn, director for the Ames Water and Pollution Control Department, “Neither the quality of the Ames source water nor the treatment process has changed.”

Microbiological contaminants, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, pet, wastewater treatment plants, and wildlife.

Organic contaminants, such as salts and metals, which can occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Radioactive contaminants, which occur naturally or result from oil and gas production and mining activities.

Five Basic Analytical Groups for Water Testing

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The Ames City Council is the governing body that oversees the Ames water system. Bring your ideas to the public forums at the City Council meetings which are normally held at 7:00 p.m. on the second and fourth Tuesdays of each month in the City Council Chambers at 515 Clark Avenue.

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What’s Inside

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Ames Water Makes the Grade

In addition to providing clean, safe drinking water, the City of Ames Water and Pollution Control Department is also proud to produce a product with superior taste.

Substance (units) | Test Year | No. of Samples | Action Level (AL) | No. of Samples Above AL | 90% of Samples Were below This Level | Typical Source of Substance
--- | --- | --- | --- | --- | --- | ---
Lead (ppb) 2010 | 35 | 15 | 0 | ND | - | Corrosion of household plumbing systems; natural deposit erosion
Copper (ppm) 2010 | 35 | 1.3 | 0 | 0.026 | - | Corrosion of household plumbing systems; natural deposit erosion

Terms to Know

Regulated substances have Maximum Contaminant Levels (MCLs) set by the EPA. This is the highest level of a contaminant that is allowed in drinking water. Some contaminants have MCL Goals (MCLGs). This is the level of a substance where there is no known or expected health risk. MCLGs allow for an additional margin of safety. MCLs are set as close to MCLGs as feasible using the best available water treatment process. Unregulated substances do not have established MCLs but are monitored regularly. If an unacceptable amount of any substance is ever found in our water, the City of Ames will notify residents immediately and take corrective action to eliminate the problem. The MCL for lead and copper is known as the Action Level (AL), the concentration which, if exceeded, triggers treatment or other requirements. If 90% of all samples tested are not below the action level concentration, then the water utility is required to implement treatment improvements to lower lead/copper levels. Other actions, such as public education and notices, may also be required.

Water Treatment Process

- **From the Well**: The Ames Water Plant provides treatment to ensure a safe, palatable supply of drinking water for its customers. Have you ever wondered how the underground water supply gets to you? It all begins when well water enters the treatment plant through an aerator. This vents dissolved gases to the atmosphere that would contribute undesirable taste and odor and interfere with subsequent treatment steps. Aeration also causes dissolved iron to combine with oxygen in the air to form rust particles that are removed in treatment.
- **Lime Added to Remove Hardness**: The water then flows into mixing tanks where lime is added to raise the pH. The lime forms solid particles by combining with calcium and magnesium, minerals that contribute to hardness. At this point, sodium hypochlorite is added to disinfect the water, and a polymer is added to enhance settling.
- **Hardness Settles Out**: The water then travels to the clarifiers where the insoluble calcium and magnesium particles settle to the bottom. These residuals, commonly known as sludge, flow to a lagoon and are allowed to dry. The residuals are recycled to farm fields as a soil conditioner.
- **Clean, Filtered Water**: After clarification, polyphosphate is added to stabilize the water and reduce scale build-up on the filters. Next, the water enters recarbonation tanks where carbon dioxide gas is diffused through the water to stop the softening reaction. From the recarbonation tanks, the water is filtered through beds of anthracite coal and sand. These filters remove fine suspended particles.
- **To Your Home**: Finally, fluoride is added to the water for dental protection just prior to distribution to the community.

Ames award-winning water originates in groundwater aquifers. The water in Ames’ aquifers flows through the remnants of ancient riverbeds of Squaw Creek and South Skunk River as they existed before the most recent glaciers changed the terrain. The City of Ames uses 22 wells to access the water in the layers of sand and gravel in these ancient riverbeds.

The table to the right lists the most recent drinking water test results for Ames water within the past five years. The items listed were the only substances detected from a monitoring list of more than 120 regulated and unregulated substances. Trained personnel evaluate source water; water undergoing treatment; and tap water from homes, schools, and businesses throughout the city using state-of-the-art instrumentation. Other tests are performed by the State Hygienic Lab in Iowa City and certified private testing laboratories.

The United States has some of the best public water supplies in the world. To make this happen, trained professionals work 24 hours a day to provide you with the best possible water.

ND: not detected by test method
ppm: parts per million, same as milligrams per liter (mg/L)
ppb: parts per billion, same as micrograms per liter (µg/L)
MRLG: maximum residual contaminant level goal
MRDL: maximum residual disinfectant level goal
NTU: nephelometric turbidity units
TT: treatment technique, value determined by available treatment technology