

1999 Monitoring Report Summary

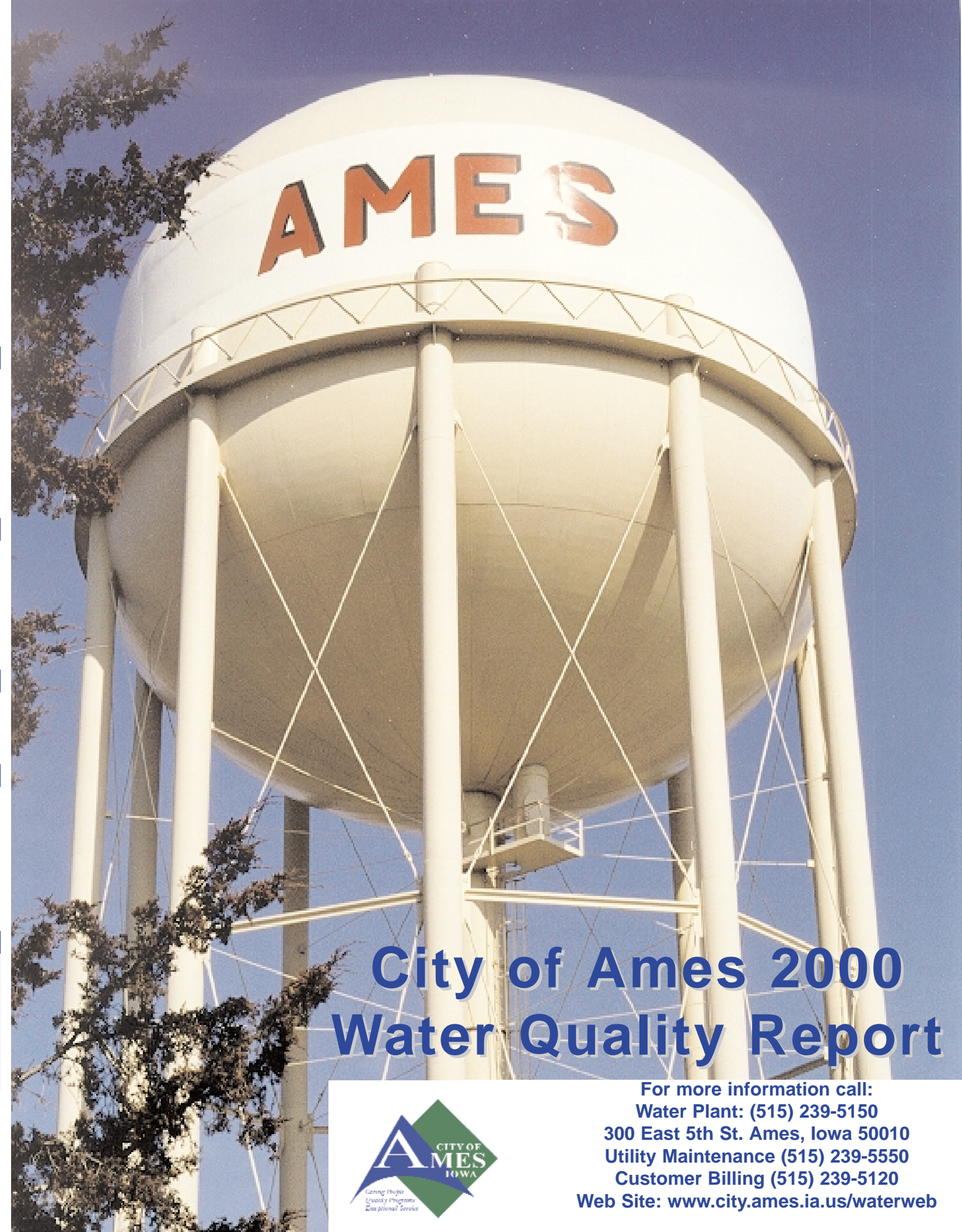
Test Results Show Ames Water Safe

For the calendar year of 1999, no contaminants were detected that exceeded federal or state standards for safe drinking water. The table below lists the substances that were detected, most in amounts that were far less than maximum allowed limits. According to the Environmental Protection Agency (EPA), 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 that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Substance (units)	Test Date	No. of Samples Tested	Highest Allowed Level(MCL)	Highest Level Detected	Lowest Level Detected	Recommended Maximum (MCLG)	Typical Source of Substance
Detected Substances Regulated Prior to Distribution							
Alpha Emitters (pCi/L)	1997	2	15.0	2.0	ND	---	Natural geological deposits
1,1-Dichloroethene (ppb)	1995	2	7.0	0.9	ND	7.0	Plastic, dyes, perfumes, paint
Fluoride (ppm)	1999	1460	4.0	1.41	0.52	4.0	Additive, natural deposits
Turbidity (NTU)	1999	1095	TT	0.26	0.01	---	Soil runoff
Detected Substances Regulated in the Distribution System							
Total Trihalomethanes (ppb)	1999	4	100	2.0	ND	---	Disinfection by-product
Total Coliform Bacteria	1999	620	Present in <5% of samples per month	Present in 1.9% of samples in one month	0%	0%	Naturally present in the environment
Unregulated Detected Substances							
Radon 222 (pCi/L)	1999	4	---	50	28	4000	Natural geological deposits
Haloacetic Acids (ppb)	1999	4	---	3.0	2.0	---	Disinfection by-products
Substances Measured for Treatment Plant Operation							
pH (standard units)	1999	4380	---	9.86	9.21	---	Physical property of water
Total Hardness (ppm)	1999	4380	---	190	138	---	Natural geological deposits
Iron (ppm)	1999	365	---	0.18	ND	0.30*	Natural geological deposits
Chlorine Residual (ppm)	1999	2190	---	2.94	1.70	4.0	Additive for disinfection
Substances Regulated at the Customers' Tap							
Substance (units)	Test Date	No. of Samples Tested	AL: 90% of Samples Must Be Below This Level	No. of Samples Over AL	90% of Samples Were Below This Level	Typical Source of Substance	
Lead (ppb)	1998	49	15	1	ND	Plumbing corrosion	
Copper (ppm)	1998	49	1.3	0	0.02	Plumbing corrosion	

Key to table: MCL: Maximum Contaminant Level. The highest amount allowed in drinking water. Set as close to MCLGs as feasible using the best available treatment technology. MCLG: Maximum Contaminant Level Goal. The level below which there is no known or expected risk to health. MCLGs allow for a margin of safety. AL: Action Level. The concentration which, if exceeded, triggers treatment or other requirement the system must follow. PPM: parts per million. PPB: parts per billion. ND: not detected. pCi/L: pico curies per liter, a measure of radioactivity. NTU: nephelometric turbidity units. TT: value determined by available treatment technology. *Secondary standard: Non-enforceable federal guideline for contaminants that may adversely affect the aesthetic quality of drinking water.



City of Ames 2000 Water Quality Report



For more information call:
Water Plant: (515) 239-5150
300 East 5th St. Ames, Iowa 50010
Utility Maintenance (515) 239-5550
Customer Billing (515) 239-5120
Web Site: www.city.ames.ia.us/waterweb

Welcome to your city's second annual water quality report. This document is the result of two important pieces of legislation: the Safe Drinking Water Act (SDWA) of 1974 and its reauthorization in 1996. The 1974 legislation began the task of guaranteeing each American a supply of safe drinking water. The 1996 reauthorization required each water utility to report annually on the quality of drinking water provided. The Ames Water and Pollution Control Department welcomes this opportunity to inform you about Ames water quality. **We're pleased to report that the Ames Water Plant meets all state and federal regulations for safe, reliable drinking water.**

1887: Fire destroys business district, starts discussion of possible central water system. **1891:** Water supply system begins with one wooden storage tank, one well, and downtown pump house. **1905:** Water works moved to present site. First major expansion; 50,000-gallon elevated tank and underground reservoir built. **1909:** First public drinking fountains included access for dogs and horses. **1924:** Construction of iron removal facility along with 1.1 million-gallon reservoir, 200,000-gallon elevated tank. Integration of all water mains by booster station. Treatment begins. **1927:** Filtration begins. Two-million-gallon per day (MGD) capacity. **1931:** Softening plant built. Three MGD capacity. **1962:** Capacity doubled, new pumping station, treatment upgrades. **1971:** Nine MGD capacity. **1978:** Five-million-gallon reservoir built. **1988:** Capacity increased to 12 MGD.

Water Treatment Processes

The Ames Water Plant provides treatment to ensure a safe, palatable supply of drinking water for its customers. Well water enters the treatment plant through an **aerator**. This vents **gases** to the atmosphere that contribute undesirable taste and odor and interfere with later treatment steps.

The water then flows into **mixing tanks** where **lime** is added to raise the **pH**. The lime forms **solid particles** by

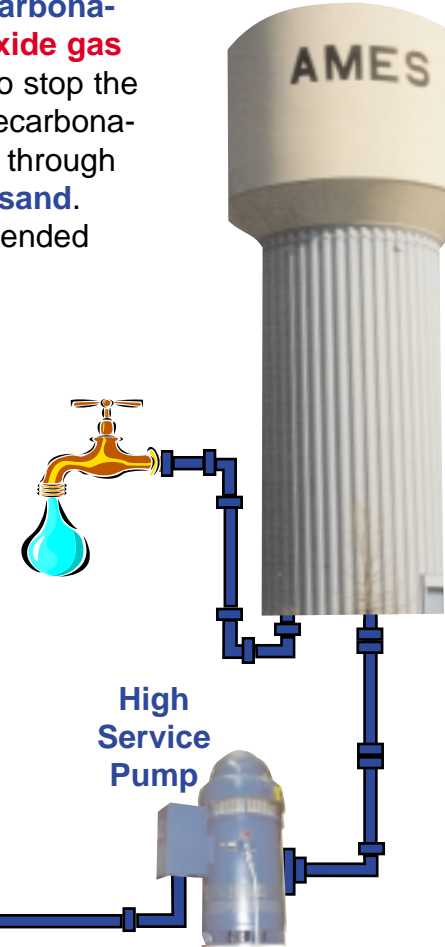
combining with **calcium** and **magnesium**, minerals that contribute to hardness. At this point, **sodium hypochlorite** is added to disinfect the water, and a **polymer** is added to enhance settling.

The water then travels to the **clarifiers** where the previously formed calcium and magnesium particles settle to the bottom. These **residuals**, commonly known as **lime sludge**, are pumped to a lagoon and allowed to dry. The solids are then applied to farm fields as a soil conditioner. After leaving the clarifiers, **polyphosphate** is added to stabilize the

water and slow the softening reaction. Next, the water enters the **recarbonation tanks** where **carbon dioxide gas** is bubbled 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.

Finally, **fluoride** is added to the water for dental protection just prior to distribution to the community.

Bloomington Road Tower



Information on Water from the EPA

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of people and animals. Your water is regularly tested for the following contaminants.



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



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



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



Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.



Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Who Decides the Water is Safe to Drink?

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. *Some people may be more vulnerable to contaminants found 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, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hot-Line (800-426-4791).*

Ames Water Sources

The earth and rock formations that hold water beneath the earth's surface are known as aquifers. Ames water is drawn from 24 wells drilled into an alluvial aquifer known locally as the "Ames aquifer." An alluvial aquifer is generally a shallow one that exists in the underground sand and gravel deposits of a river valley. Of the 24 wells, only 19 are used for the municipal drinking water supply; water from the remaining

five wells is used only for cooling water in the city's Power Plant.

Water Conservation

Water is a crucial resource for human health, recreation, and the economy. Preserving our resources is critical. Below are some conservation tips to remember when you are using water.

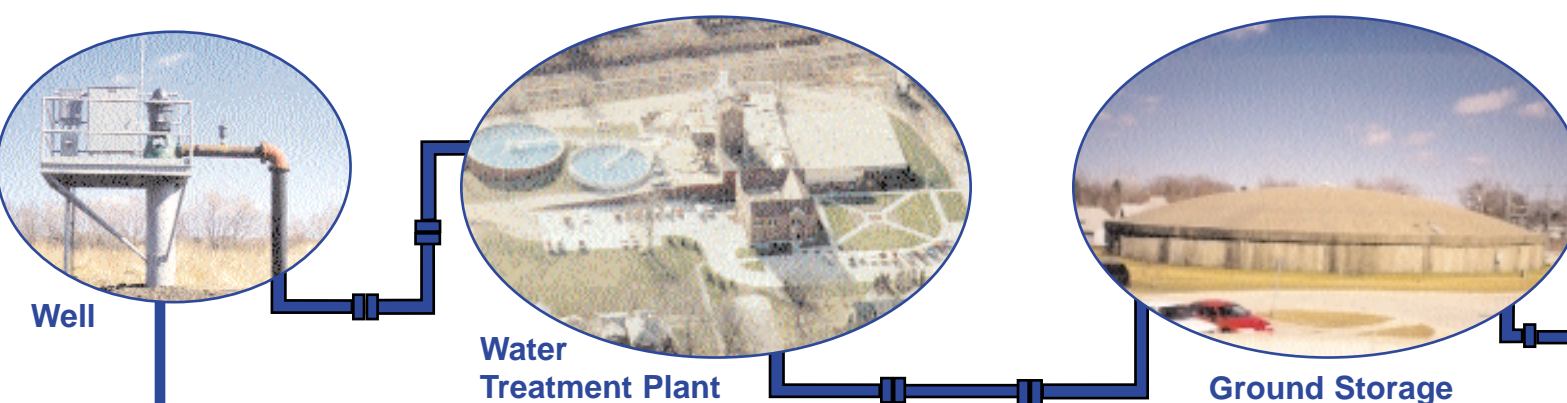
- Run dishwashers and clothes washing machines using a full load to save water, gas, and electricity.

- Water lawns during morning and evening hours and when it is less windy.

- Use water conservation devices such as flow-restricted showerheads and faucet aerators.

- Fix leaking toilets and dripping faucets.

- Wash your car at a commercial car wash that recycles water.



Aquifer