Benefits of UV-C for Boil Water Advisories

Give Yourself Peace of Mind

By Charles Boehme
UV Application Specialist

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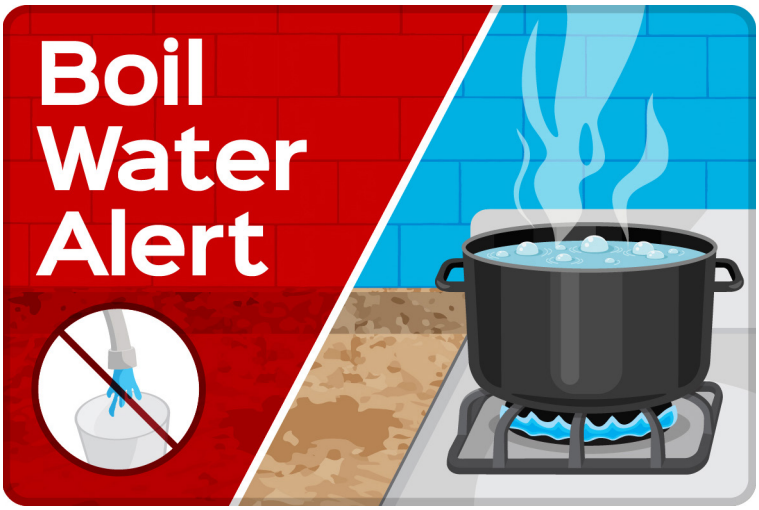
What is a Boil Water Alert?



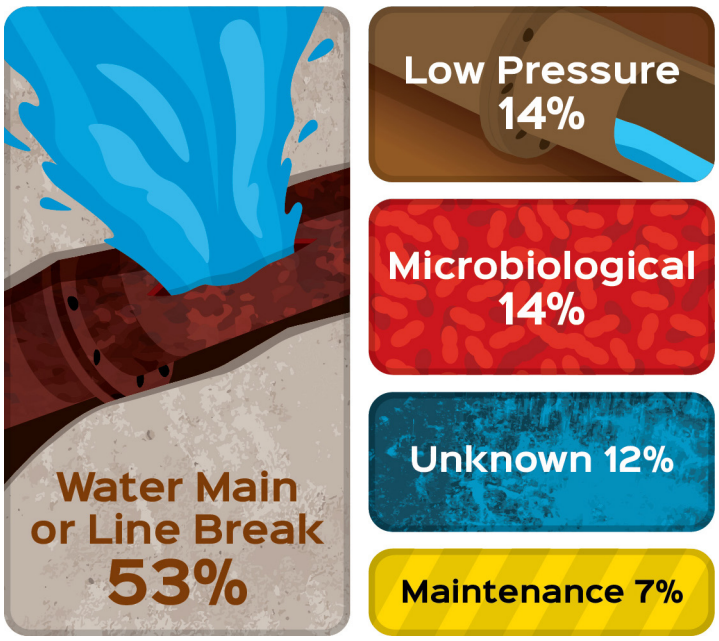
A Boil Water Alert is issued when disease-causing pathogens are detected, in order to protect you from water that is or will become unsafe to consume. At any moment, a handful of the 151,000 public water systems in the USA can be under advisory. EPA regulations ensure that municipalities conduct regular testing, proper maintenance, appropriate filtration, and disinfection of water before it's piped out to your faucet.

Give yourself peace of mind by adding an ultraviolet disinfection system from Atlantic Ultraviolet to your home or business, reducing risks associated with water contamination. UV-C is a rapid, safe, and chemical-free disinfection method that eliminates much of the hassle during Boil Water Advisories.

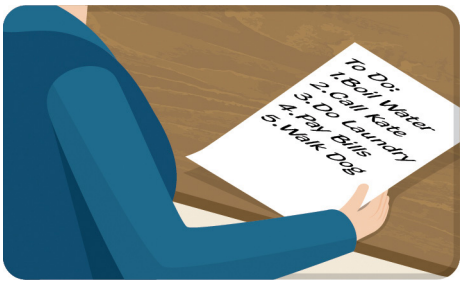
Situations that Cause Contamination and Trigger Boil Water Advisories

Aging Infrastructure is a common cause of Boil Water Advisories. Most of the country's pipes and water systems were designed and installed over 100 years ago. Time and environmental changes allow dirt and gravel around the pipes to settle, causing them to develop small fissures and cracks. Shifting pipes then lead to water main bursts, pipe corrosion, and fitting disintegration—all of which provide contaminants a path into the water source. Other causes of Boil Water Alerts include sewer overflow, flooding and storm runoff, and interruption of treatment due to a power outage.

Of the 20,978 boil water advisories recorded from 2012 to 2014 in the U.S., 53.06% were issued due to a water main break or leak, 14.11% due to low pressure, 13.87% due to confirmed microbiological contaminants, 11.92% due to an unknown cause, and 7.05% due to scheduled maintenance.

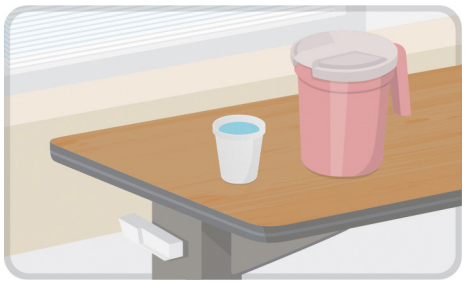


The Effects of Boil Water Advisories



Home
At home, a Boil Water Advisory is a nuisance—requiring you to rearrange your routines in order to make sure everyone has safe water.

Business
If you own or operate a business, not taking the proper precautions during a Boil Water Alert could result in closed doors and a loss of valuable sales.



Healthcare Facilities
In hospitals, medical facilities, nursing homes, and any industry that cares for people, water that is pure and safe means life or death.

Infection Concerns with Boil Water Alerts

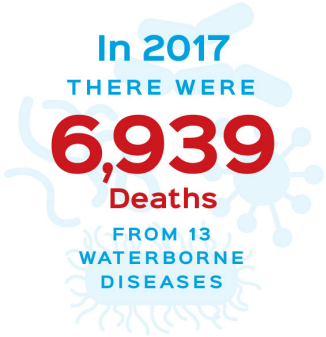
A Boil Water Alert will remain in effect until water testing Indicates that water quality is back in line with EPA safety regulations. Different sets of circumstances are behind every advisory. Unless it's pre-scheduled for facility or pipe maintenance, there is no way to know how long it will last.

Contaminations that trigger Boil Water Advisories can pose minimal to severe health risks. Since harmful pathogens are often naked to the human eye, water may appear perfectly normal coming out of the tap.

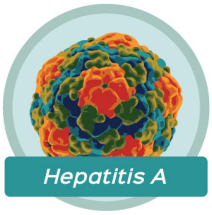
"Although the U.S. has one of the safest drinking water systems in the world, there are an estimated 4–32 million cases of acute gastrointestinal illness (AGI) per year from public drinking water systems."

— CDC, "Magnitude & Burden of Waterborne Disease in the U.S."

The pathogens listed below can cause a range of symptoms including headaches, nausea, cramps, diarrhea, and vomiting. Eradicating them is critical when a Boil Water Alert is activated. Elderly, young, pregnant, and immune-compromised people are at the highest risk for significant health complications and even death.

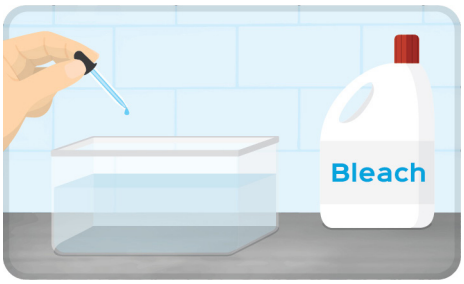


Source: CDC, "Current Waterborne Disease Burden Data & Gaps"

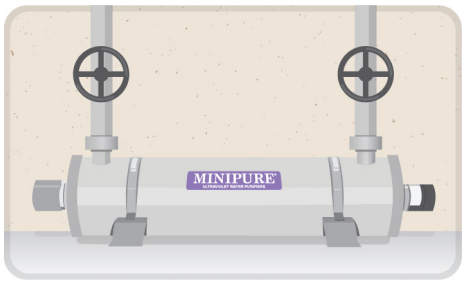


3 Possible Water Treatment Options During a Boil Water Alert

Boiling
If boiling, the EPA and CDC recommend you bring the water to a rolling boil for 1 minute (3 minutes at elevations greater than 2,000 meters, or 6,561 feet). Then, allow the water to cool thoroughly before use.



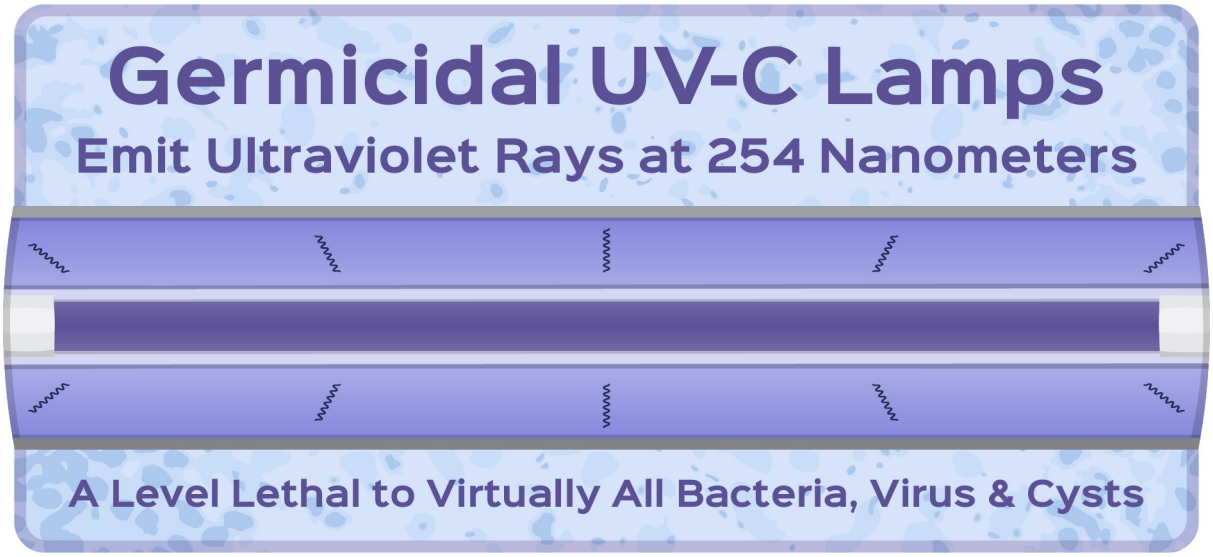
Chemical Treatment
If choosing chemical disinfection, use unscented, plain household chlorine bleach. Proper precautions must be taken to avoid overdosing and chemical mishaps.



UV-C Disinfection
Germicidal UV is automatic and chemical free. Unlike boiling and chemical disinfection, it allows personal hygiene, dish washing, food and beverage prep, and cleaning to take place as usual during a Boil Water Alert.

UV-C Water Disinfection Avoids Potential Hassles During an Advisory

Ultraviolet technology has been recognized for decades as a safe, powerful, rapid, and chemical-free method of disinfection. Germicidal ultraviolet lamps, known as UV-C lamps, emit ultraviolet rays at 254 nanometers. This level is lethal to virtually all bacteria, virus, and cysts, including the pathogens listed previously.



Successfully Choosing a UV-C Water Purifier

In order to effectively disinfect your water, you'll need a quality constructed system, the correct installation, consistent maintenance, and a properly-sized system for your water volume. Successful disinfection depends on unobstructed ultraviolet wavelengths through the water, and the appropriate dose of UV light needed in order to eradicate the particular organisms. For UV-C to virtually eliminate pathogens, the water must be clear and free of sediment.

When selecting a UV-C water disinfection system for your home or business, consider your disinfection goals, proper evaluation of your water volume, and whether you want continuous or intermittent purification. Small purifiers can operate between 1 and 1,200 gallons per hour. Larger ones can provide 25,000 gallons per hour or more.

The Keys for Successful UV-C Disinfection	
Quality Constructed System	Correct Installation
Consistent Maintenance	Properly-Sized System

6 UV-C Water Disinfection Product Lines

All our UV-C water disinfection systems are quality engineered in the USA. Easy to install and use, they provide continuous disinfection of your water with minimal maintenance. USA-made ***STER-L-RAY***® UV-C Lamps are safely housed in a stainless steel purifier chamber and only need replacement about once a year or every 10,000 hours of operation. No specialized training or tools are required for maintenance.

Bio-Logic® Ultraviolet Water Purifiers can be installed in small spaces and have dual rotatable heads, ideal for installations with unusual hook ups. The **Bio-Logic**® ***Pure Water Pack***™ is designed ONLY for Point of Use and is equipped with a mounting bracket and dual filtration (sediment and carbon) in addition to the 1.5 gallon-per-minute ultraviolet water purifier. Two options are available for carbon filtration: 5-micron and 2-micron.

MINIPURE® models have a compact footprint for Point of Use installation such as under the sink, water vending machines, small reverse osmosis systems, boats, RVs, and other similar applications. An LED on the ballast and **EASY-OFF**™ End Cap with clear window plug provide visual indication of UV-C lamp operation. Models come equipped with an audible alarm integrated into the ballast that alerts you of malfunction.

6 UV-C Water Disinfection Product Lines (continued)

Ultimate™ UV-C Water Purifiers are designed for a vertical mount — perfect for POU (point-of-use) or POE (point of entry). Typical applications include homes, laboratories, water vending, etc. Several models are available to handle most small water requirements, fitting easily in spaces that can't accommodate a horizontally-mounted purifier.

MIGHTY★PURE® can install POU (point-of-use) or POE (point-of-entry) and models MP36C (12GPM) and MP49C (20GPM) are available with certification for NSF®/ANSI Standard 55 — Ultraviolet Microbiological Water Treatment Systems. These models offer superior quality and numerous standard features, such as a sight port for viewing germicidal ultraviolet lamp operation.

While any of our **SANITRON**® models can be used in multiples to allow for growing or changing applications, Model S2400C (40 gallons per minute) model was initially designed with the modular design platform in mind. Quartz sleeve cleaning is a simple task with the standard patented Dual-Action Wiper Mechanism. Models S37C, S50C, and S2400C are certified to **NSF**®/ANSI 61 and 372.

The **MEGATRON**® UV-C Water Disinfection System has a modular design for a single department or an entire facility. Standard features include lamp LEDs, a sight port plug that safely shows UV-C lamp glow, an integrated drain fitting, a patented dual-action manual wiper mechanism, a **GUARDIAN**™ Ultraviolet Monitor, and a **Promate**™ Elapsed Time Indicator to display operating time. An optional automatic wiper is also available.

About Atlantic Ultraviolet

Since 1963 Atlantic Ultraviolet Corporation® has engineered and manufactured ultraviolet water purification equipment, ultraviolet air sanitizing systems, UV surface disinfection systems, and germicidal UV lamps for residential, commercial and industrial applications.

STER-L-RAY® Germicidal Ultraviolet Lamps utilized in Atlantic Ultraviolet's products produce short wave radiation that is lethal to bacteria, virus and other microorganisms. The method is unique and rapid and does not utilize heat or chemicals. Ultraviolet technology is a well-established method for its effectiveness, and because the process is free of by-products.

Atlantic Ultraviolet has two goals: Continuing to develop strong business-to-business and business-to-consumer relationships, and continuing its leadership in applied ultraviolet technology with the development of new product lines.

Review Ultraviolet.com to "Learn" about the company & products. Visit BuyUltraviolet.com to "Shop" products and models of UV water, air/surface purification systems, and germicidal UV lamps. Be sure to visit the NSF® Certified Systems and Clearance sections.

A UV Application Specialist is always ready to take your call at 631-273-0500, Mon-Fri, 7am-6pm EST.

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