

# Debunking Customer Myths

## Educate Your Customers About Well Water Testing and Treatment

When it comes to well water quality, testing, and treatment, well owners have a number of preconceived notions. These beliefs likely prevent them from taking the proper steps to prioritize water quality and effectively treat their water for the long term.

If your customers don't understand what's really happening with their well water, they risk exposing their families to microbial contaminants that could make them sick. This white paper busts many of the common myths that customers have concerning their wells—giving you the information you need to enlighten your customers with the truth and ultimately help them find the water treatment solutions that are right for them.



### Myths about well water

#### **Private well water comes from a natural source, so no treatment is needed.**

Well water can be an excellent source of fresh water, but that doesn't mean it's pure. Impurities, including microorganisms, chemicals, minerals, and other substances, can exist in well water. Furthermore, water quality is highly variable. Even wells that are close to each other can produce radically different water qualities—one might contain coliform bacteria, nitrates, and manganese and one just a few feet away may be free of all these issues.

Drinking untreated water could lead to significant health problems. It's important that well owners regularly test their water to identify possible issues and determine if some form of treatment is required.

#### **Municipal water is better than well water.**

Municipal or city water is not necessarily better than well water. When properly treated, both can provide quality, good-tasting water. Unlike private or shared wells, municipal water is subject to more regulations and regular testing. When a problem is detected, treatment professionals take immediate actions to fix it.

But even municipal water can be at risk for microbial contamination. Aging infrastructure is deteriorating faster than most cities can keep up with. Cracks in pipes or water main

breaks happen everywhere, all the time. Rare-but-possible failures at municipal treatment facilities—caused by power failures, floods, hurricanes, and other events—can happen. Remember, if water can get out, contaminants can get in.

Customers on well water are solely responsible for their water quality. If a problem is identified, they must take action to address it quickly. When properly monitored and treated, well water can be confidently consumed through drinking and cooking and used for bathing, teeth brushing, and washing clothes.

Installing a point-of-entry or point-of-use ultraviolet water treatment system is one way that homeowners can protect their water—regardless of the source—from microbial contaminants.

**Private wells are regulated by the government.**

While the U.S. and Canadian governments set restrictions on commercial well users, they don't regulate private well water quality or well system maintenance. That said, most states and provinces have some well construction standards designed to protect groundwater and the health of people who consume that water. Under these standards, upon completion, wells must be tested for certain contaminants, such as coliform bacteria. A negative bacteria test is required before the jurisdiction will allow people to consume the water.

Additionally, some jurisdictions require a water test on a private or shared well that's included in a real estate transaction.

Other than these two situations, little oversight into private wells is provided. Ensuring the quality of well water is solely the owner's responsibility. Simply put, if they aren't taking care of their well, no one is.

**The water doesn't look, smell, or taste bad, so it must be fine.**

Clear water does not mean contaminant free. Microorganisms cannot be seen, smelled, or tasted—but that doesn't mean they're not in the water. Because some of these microbes can make people sick, public health agencies recommend testing private wells at least annually for bacteria and nitrates. Testing is also important if a household is growing or has members with weak immune systems.

A positive coliform bacteria test indicates that conditions exist in the well to support other bacteria, including disease-causing microorganisms.

As nitrate is a byproduct of human and animal waste, it's an indicator for microbial contamination. Additionally, nitrates can inhibit the blood's capacity to carry oxygen in fetuses and babies six months or younger, causing infant methemoglobinemia or blue baby syndrome.

If a well tests positive for nitrates or coliform bacteria, homeowners should take immediate action.

**Nobody has gotten sick from the water, so it must be fine.**

While some disease-causing microorganisms like *E. coli* can make people sick anywhere from hours to a few days after exposure, others like *hepatitis A* can have an incubation period of up to 28 days. Far too often, people don't associate a stomach bug, eye or ear infections, or even rashes with water issues; they instead think of the flu, food poisoning, or allergies.

To eliminate their water as the cause of an unexplained illness, homeowners should test their water when someone gets sick. Better yet, they should test their water at least annually, as that's the best way to make sure it doesn't have any disease-causing microorganisms.

**All wells in the area should have the same water quality.**

Contamination can be widespread or localized—but it's still contamination. Homeowners should never ignore the results of a water test or downplay a positive coliform result.

Unfortunately, even if they're doing the right thing with their well, their neighbor might not be. Because wells often feed into the same aquifer, one contaminated well can impact others in the area. Installing a whole-home UV water treatment system provides an extra layer of protection against possible contamination sources that are out of their control.



**Myths about water testing**

**The well passed an inspection when it was first built, so there's no need to test it again.**

The well was fine when it was installed. But the operative word here is "was." Testing after a well is drilled establishes a baseline and helps identify any immediate needs for water treatment. These basic tests often include pH, hardness, coliform bacteria, and nitrates. Of these, hardness is the only thing that's not likely to change over time. Therefore, a well owner may never need to test for hardness again, but they should still run pH, coliform bacteria, and nitrate testing regularly.

Water quality changes from day to day, season to season—with snowmelt, heavy downpours, a leaking septic system, or changes in land use. Contaminants can infiltrate wells and aquifers, and aging infrastructure leads to an increased risk of contamination. Public health authorities recommend testing wells on a regular basis or if there's been a change in the water. At a minimum, homeowners should test annually, but depending on seasonality and weather conditions, more frequent testing may be warranted.

**The well passed a home inspection, so there's no need to test it again.**

Home inspectors aren't experts in water equipment or private wells. When wells are inspected for real estate transactions, the inspector (and ultimately, the lender) are looking

for evidence of potability. A microbial test provides the information needed—for that exact moment.

Remember water quality changes over time, and the result of a microbial test only provides a snapshot of a point in time. Along with testing annually, preferably during the warmer months when the well is more likely to become contaminated by external influences, well owners should test their water if:

- The water experiences a sudden change in taste, odor, or appearance.
- A household member has or develops a compromised immune system.
- The household size is growing.
- Water flow noticeably decreases.
- Land use surrounding the well changes.

Sudden changes in water quality can indicate the well needs to be cleaned or that surface water has infiltrated the well through a breach in the well system.

### **Testing is expensive.**

Testing is actually less expensive than many people think—and could be considered an affordable insurance policy. Many water treatment professionals will offer a screening test for free or a minimal charge (around \$20 to \$70) as part of a regular service call. Because testing annually is the best way to make sure there are no microbial contaminants, it helps protect customers from larger, more expensive problems in the future.



## **Myths about water treatment**

### **The biggest concerns with water are hardness, odors, colors, and taste.**

Aesthetic issues are annoying and can be off-putting, but generally, they don't impact a person's health. The contaminants that are likely to cause illness—from fairly immediate bouts of diarrhea and vomiting to more chronic issues—are things that aren't seen, smelled, or tasted. Continuous water treatment systems, like those that use UV light, provide reliable and consistent protection against microbial contamination.

### **The presence of coliforms doesn't present much risk.**

Your customers may have heard statements like "coliforms are present naturally in the environment" or "coliforms are unlikely to cause illness." While these statements are true, they need context.

If water tests positive for coliforms, it means they were detected, not in the environment, but rather IN the water. That means contaminants have a path into the well, which means other microorganisms can get in as well. The presence of coliforms—not necessarily the

coliforms themselves—is concerning because it means conditions exist in the well that could support disease-causing bacteria.

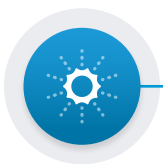
**Water treatment is one-size-fits-all.**

Water treatment systems vary and are designed to address different issues. When selecting a treatment system, homeowners should consider the substances or issues they want to treat and the concentrations at which they exist in the water.

No single piece of water treatment equipment will address all water quality issues. Thus, in some cases, a “treatment train” (sequenced technologies that treat one or more water quality problems) is necessary.

**If water is treated with chlorine, it doesn’t need any other treatment.**

Many illness-causing microbes, such as *giardia* and *cryptosporidium*, are chlorine resistant. UV water treatments inactivate common waterborne pathogens\*—including *cryptosporidium*, *giardia*, *pathogenic E. coli (STEC/VTEC)*, *campylobacter*, *legionella*, *salmonella*, *shigella*, *norovirus*, *enterovirus*, and *hepatitis A virus*—without the use of chemicals.



**Myths about UV**

**UV treatment systems are only useful for people with private wells.**

While UV systems are an ideal solution for private wells, they’re also viable for anyone who’s concerned about ensuring their families have access to reliably treated water. It doesn’t matter if people are in the city, a small town, or on a remote rural property, UV water treatment provides peace of mind by delivering better quality water.

**Microorganisms can reactivate after undergoing UV treatment.**

UV light inactivates microorganisms by breaking down their DNA so they cannot replicate or cause infection. If treated with the right dose and a properly working lamp, the risk of reactivation is minimal. UV treatment is reliable, providing confidence that water will be continuously treated for microbial contaminants.

**If UV light can inactivate microorganisms, it also poses a risk to people.**

UV systems add nothing to the water and take nothing away. There’s no need to handle potentially dangerous chemicals, and no disinfection byproducts are produced. Furthermore, the UV lamp is contained within a specifically designed reactor with numerous safety features to ensure there is no risk of injury or UV-C light exposure to a person.

### **UV treatment systems are expensive.**

UV lamps do not require a lot of energy. Operational costs are about the same as powering a 40-watt light bulb. While UV lamps must be replaced annually to ensure system effectiveness, they're designed to last for 9,000 hours of operation.

### **UV systems are difficult to maintain.**

Maintenance is simple, requiring two steps:

1. Replace the UV lamp annually with a genuine part from the manufacturer.
2. Clean the quartz sleeve when replacing the lamp. Additional cleanings may be needed depending on water quality.

Neglecting this maintenance could impair the system's effectiveness.

### **UV lamps are difficult to dispose of.**

UV lamps contain small amounts of mercury. Recycling centers can properly handle and responsibly dispose of UV lamps. When lamps are replaced by a water treatment professional, disposal is handled by them, freeing homeowners of this task.

## **Knowledge is power**

Understanding the truth about well water, testing, and treatment is key to achieving better quality water. As a water treatment professional, you have the power to educate your customers on the potential issues they might be facing and the steps they need to take to improve their water. Through education, you can clear up misconceptions and empower customers to make the right treatment choice for their water, families, and budgets.

### **About VIQUA**

VIQUA is proud to be one of the world's leading suppliers of residential and light commercial UV water treatment systems, providing treated water without the use of chemicals. Available as point-of-entry or point-of-use solutions, VIQUA UV systems inactivate common waterborne pathogens\*—including *cryptosporidium*, *giardia*, *pathogenic E. coli (STEC/VTEC)*, *campylobacter*, *legionella*, *salmonella*, *shigella*, *norovirus*, *enterovirus*, and *hepatitis A virus*—to continuously deliver on our promise: consistently better water.† For more information, visit [www.viqua.com](http://www.viqua.com).

\*Efficacy of VIQUA UV systems has been demonstrated in internal testing using surrogate organisms, specifically MS2 Phage. MS2 is a well-documented surrogate organism that is accepted in the water treatment industry in the design and testing of UV systems being used to treat *cryptosporidium* and *giardia*. Contact VIQUA for the details on internal testing performed.

† Versus identical incoming water that is not treated with a UV system. Based on internal efficacy testing, VIQUA UV treatment systems, when installed in accordance with the manufacturer's recommendations and with use of a VIQUA UV lamp that is within its expected life, and subject to mechanical and water quality variables, can inactivate common waterborne pathogens. Actual efficacy of any particular VIQUA UV system will be dependent upon mechanical and water quality variables, including incoming water quality, the specific pathogen(s) present, age of UV light bulb, etc. Accordingly, no guarantee can be provided of actual percentage of common waterborne pathogens inactivated in an application.