



# Understanding the Results of Your Well Water Test



# Understanding the Results of Your Well Water Test

By testing the quality of your well water, you've taken an important step in protecting yourself and your family from common waterborne pathogens that can cause illness. You just received your test results, so you're probably wondering now what?

## How do I decipher the results?

Regarding microbial contamination, the most important measurement is total coliform bacteria. Coliform bacteria occur naturally in soil, decaying vegetation, and the intestines of warm-blooded animals. While many coliform organisms are completely harmless, some like *E. coli* can make people sick and even be deadly. When present, coliforms are a strong indicator that your water source has already or can easily become contaminated with human or animal fecal matter. The seriousness depends on how high the number is.



► **Remember: A water test only provides a snapshot in time—and water quality changes frequently.** Test well water at least once a year, preferably during warmer months when the risk of external influences on your well is higher.

If your results show any fecal coliforms, including *E. coli*, your water is contaminated. You must boil your water before consuming it.

TABLE 1: RESULTS BY TESTING TYPE

Presence-absence test	Lab test (total coliforms)	Interpretation
		Indicators tests are looking for are bacteria: Total coliforms indicate general water quality, and <i>E. coli</i> indicate definite fecal contamination.
Negative (absence)	0 or ND (not detected)	You can confidently consume your water.
Positive (presence)	1 to 5*	As long as it tests negative for fecal coliform or <i>E. coli</i> , you can confidently consume your water.
Positive (presence)	6 or higher*	Boil your water before it's consumed.
Positive (presence)	O/G (overgrown)	Boil your water before it's consumed. Sometimes a test result says "O/G" instead of listing the number of total coliforms. This means many other types of bacteria exist in your water sample, which prevented the lab technician from seeing whether there were coliform bacteria.

\*If you see "est." or "estimate" next to your test results, coliform bacteria were in your water. However, because other types of bacteria also existed, the lab technician couldn't accurately count the number of coliform bacteria. Boil your water before it's consumed.

## My water cannot be consumed. Now what?



### Boil your drinking water

Until the problem is addressed, bring your water to a rolling boil for a full minute before drinking or cooking with it.



### Shock your well

To remove microbes from your well, “shock” it with a high dose of chlorine and then purge the water. Highly chlorinated water should never be consumed.

The amount of chlorine needed for the shock depends on numerous factors. Your water treatment professional will know exactly how much is required and how to safely dispose of the chlorinated water once the treatment is complete.

► **Remember: Shocking your well isn’t a long-term solution;** it’s a quick fix that needs to be paired with long-term, continuous treatment.



### Retest your water

After shocking your well, wait 24 hours and retest. Then test again in a week or two. After two negative results, you can confidently consume your water again. But don’t let your guard down: Once a well has been contaminated, it can be contaminated again.

## What could have caused the problem?

To reduce the risk of future contamination, identify the source and fix it. Common sources include:

- Heavy rain, snowmelt, and flooding
- Leaking septic systems
- Land use practices, including fertilizers, pesticides, and piles of organic materials
- Agricultural runoff and livestock operations

► **Remember: Wells may draw water from the same aquifer,** so if your neighbors aren’t maintaining their wells properly, your water can become contaminated.

## How do I find a long-term solution?

Unfortunately, some problems can’t be fixed. If you can’t control the source of contamination, or if you want peace of mind, install a water treatment system that inactivates microorganisms so they cannot reproduce or cause infection.

Various approaches to treatment exist—each with different benefits and drawbacks (see Table 2 on the next page). Your options depend on whether you want to treat all your water as it enters the home (point-of-entry or POE systems), or if you want to treat water at your sink (point-of-use or POU systems).

Your water treatment professional can help you determine which treatment best suits your water conditions, home size, and budget. They’ll also assess whether you need any pretreatment (reducing hardness, iron, etc.).

TABLE 2: WATER TREATMENT SYSTEMS

Treatment method	Benefits	Drawbacks	Maintenance	Inactivates microorganisms	Estimated initial investment
Ultraviolet light (UV)	<ul style="list-style-type: none"> <li>Doesn't require chemicals or generate disinfection byproducts</li> <li>Installs easily</li> <li>Inactivates microbial contaminants found in water</li> <li>Will not alter the taste*</li> </ul>	<ul style="list-style-type: none"> <li>Usually requires pretreatment (e.g., softeners in hard-water areas)</li> <li>May require high UV doses to inactivate some viruses</li> </ul>	<ul style="list-style-type: none"> <li>Replace lamp annually</li> <li>Occasionally clean and replace quartz sleeve</li> </ul>	Yes	\$1,500 to \$2,000 for the system
Chlorine injection	<ul style="list-style-type: none"> <li>Reduces some disagreeable taste and odors</li> <li>Provides residual disinfection</li> <li>Can help remove iron and manganese</li> </ul>	<ul style="list-style-type: none"> <li>Requires storage and use of noxious chemicals</li> <li>Requires ongoing monitoring of chlorine levels</li> <li>Does not work on chlorine-resistant microbes, like <i>cryptosporidium</i> and <i>giardia</i></li> <li>Requires professional installation</li> <li>Can alter water's taste and odor</li> <li>Is corrosive</li> <li>Can produce harmful byproducts</li> </ul>	<ul style="list-style-type: none"> <li>Check for loose, worn, missing, or broken parts</li> <li>Clean the entire system semiannually</li> <li>Clean all surfaces showing corrosion</li> <li>Refill chlorine supplies</li> <li>Clean any clogged injectors</li> </ul>	Yes	\$1,995 to \$3,600 for the system
Shock chlorination	<ul style="list-style-type: none"> <li>Reduces some disagreeable taste and odors</li> <li>Is inexpensive, fast, and conducted as needed</li> </ul>	<ul style="list-style-type: none"> <li>Does not offer continuous treatment or address seasonal changes in water quality</li> <li>Is not a long-term solution, as contamination will likely reoccur unless the source of the problem has been fixed</li> <li>Requires storage of 12 to 24 hours' worth of water for drinking and cooking during the treatment</li> <li>Can alter water's taste and odor</li> <li>Is corrosive</li> <li>Can produce harmful byproducts</li> <li>Does not work on chlorine-resistant microbes, like <i>cryptosporidium</i> and <i>giardia</i></li> </ul>	<ul style="list-style-type: none"> <li>Monitor the status of the well through regular testing</li> <li>Repeat the shock process in the event of a positive test</li> </ul>	Yes	\$80 to \$200 per shock

\* In rare circumstances, low levels of sulfur in source water may become detectable due to the UV system.

Have questions about your test?  
Ready to talk next steps? Contact us at:

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# What Happens When a Water Test Is Negative?

## Understanding the Results of Your Coliform Bacteria Test

As you know, we recently performed a total coliform bacteria test on your water. The results have come back **NEGATIVE**.

### What does a negative test result mean?

The lack of total coliform bacteria in your water does not necessarily indicate that your water is not contaminated; it only means that at the time of testing, there were no signs of external influence on your water. Water quality changes over time. Precipitation, such as snowmelt and heavy downpours, and seasonal changes are two common influences that can cause these microorganisms to infiltrate your water. Your best course of action is to continue to test for microbes at least once a year, preferably in the spring and fall. However, the more you test, the more confident you can be in your water quality.

### What should you do?

Since there was no indication of external influence on your water, you can continue to use your water normally. Going forward, you have a few things to consider. We are happy to answer any questions about these options and help you choose the right path.

1. **Consider testing seasonally.** If your test was drawn in the winter and the region in which you reside frequently sees temperatures below 60°F, schedule to test your well again in the spring. Late April to early June is ideal, as this is the time of year in which you are most likely to have external influences on

your water. Fall is also another opportune time for indicator testing.

2. **Maintain a testing schedule.** Regular testing is the single most effective way to understand the potential risk that an infectious microorganism might exist in your well. We can perform these tests for you regularly to help you monitor your well at least once a year or more often if desired.
3. **Consider a continuous treatment system.** Testing water for indicators provides a snapshot of your water quality at a point in time. The result does not tell you if your water is contaminated or not contaminated, but rather that you have “less risk” or “more risk.” To help you manage that risk, you may want to think about installing a method of continuous treatment.

Many highly effective treatment technologies are available for managing microbial contamination in water—some physical and some chemical. Ultraviolet light is the most common physical treatment method, and chlorine injection is the most common chemical approach. Each one has advantages and disadvantages. We can help you determine the option that is best suited to your water, your family, and your budget.

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# What Happens When a Water Test Is Positive?

## Understanding the Results of Your Coliform Bacteria Test

As you know, we recently performed a total coliform bacteria test on your water. The results have come back **POSITIVE**.

### What does a positive test result mean?

Total coliforms are rarely infectious bacteria that are commonly found in the environment. The presence of these bacteria in your water does not necessarily indicate an immediate health risk; however, their presence indicates that the risk of infectious microorganisms—including bacteria, virus, or protozoa—have a pathway to your water source and could be present.

### What do you need to do immediately?

The presence of these organisms does not necessarily indicate an immediate issue, but the risk of one is much higher. As a result, public health agencies recommend you stop drinking your water and only use boiled water for cooking and other essential needs like brushing teeth. You can continue to shower normally.

### What are your options for the longer term?

You have a few options to consider for next steps. We can discuss the pros and cons of these with you to help you determine the most-appropriate path forward.

**1. Do nothing.** As noted above, total coliforms are not necessarily infectious. Because they exist in similar environments to those microorganisms that are infections, their presence means there is a pathway to your water source for something that might cause illness.

- 2. Retest.** We can test your water again, or you can have it tested by a third-party laboratory. Proper sampling techniques are critical to the testing process, and there is always a possibility that some cross-contamination could have occurred. If you choose to use a certified lab for validation, make sure the sample is drawn using best practices.
- 3. Inspect the well, perform shock chlorination, and then retest.** As total coliforms are common in the environment, their presence indicates a direct link between the surface environment and the well. Deficiencies within the well itself may be to blame. Repairing those deficiencies in conjunction with shock chlorination could address the contamination. However, in many instances, the pathways are not created by the well's construction, and thus, the shock chlorination process is only temporarily effective.
- 4. Install a continuous treatment system.** Many highly effective treatment technologies are available for managing microbial contamination in water—some physical and some chemical. Ultraviolet light is the most common physical treatment method, and chlorine injection is the most common chemical approach. Each one has advantages and disadvantages. We can help you determine the option that is best suited to your water, your family, and your budget.

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