

# TESTING WELL WATER

---

## Basic Information You Should Know

Private well owners are encouraged to perform annual water testing as an essential maintenance practice in order to keep drinking water safe. The following information includes recommendations for well water testing.

## Recommended Testing

At a minimum, well water should be tested every year for bacteria, the most common water quality problem. Other tests may be needed, depending on where you live and what is located near your drinking water supply.

For example, if a well is located in an area of intensive agricultural use, testing should be done for nitrates and pesticides commonly used in that environment. If household tests for radon in the air are very high, well owners should arrange for testing of radon in the water. If there are problems with taste, odor, staining, or color of the water, levels of iron, manganese, and sulfate should be tested.

Testing more than once a year may be warranted in special situations:

- Someone in the household is pregnant or nursing
- There are unexplained illnesses in the family
- Neighbors find a dangerous contaminant in their water
- A change in water taste, odor, color, or clarity is noted
- There has been a spill of chemicals or fuels into or near a well

For guidance in selecting tests, refer to the table on page 2 of this information sheet. Contact the [wellcare®](#) hotline at 888-395-1033, a water well professional, the local health department, cooperative extension service, or state health or environmental agency.

## Choosing a Testing Lab

You or your patients can get an up-to-date list of all state-approved laboratories and the specific tests they are certified to perform from the local or state health department. Check with individual laboratories to get prices. Ask how soon to expect results (not more than two weeks) and about the information that will be provided with the test results. A good lab should help interpret the results and make sense of the scientific data. The [wellcare®](#) hotline staff can also assist in interpreting test results.

## Tests for Specific Conditions

Conditions of Surroundings	Recommended Tests
Cloudy, frothy or colored water	Coliform bacteria, chloride, hardness, iron, pH, sodium, tannins, turbidity
Coal or mining operations	Boron, metals, pH, Total Dissolved Solids (TDS)
Corrosion of pipes, blue-green colored water or stains, metallic taste	Alkalinity, chloride, copper, hardness, iron, lead, manganese, pH, sodium, sulfate, zinc
Dump, landfill, factory or dry-cleaning operation nearby	Metals, pH, PFAS, salts, Volatile Organic Compounds (VOCs)
Gas drilling (fracking) operations nearby	Barium, chloride, methane, sodium, strontium
Gasoline or fuel odor	Gas or oil indicators or VOCs
Gastrointestinal illness	Total coliform, E. coli, fecal coliform, cryptosporidium, giardia, legionella
Household plumbing and/or well casing is metal	Alkalinity, chloride, copper, hardness, iron, lead, manganese, pH, sodium, sulfate, zinc
Intensive agriculture	Arsenic, coliform bacteria, nitrate, pesticides
Radon present in indoor air or region	Gross alpha and beta or radium plus radon, uranium
Rapid wear of water appliances including treatment devices	Chloride, hardness, iron, manganese, pH, sodium
Salty taste, heavily salted roadway nearby	Boron, chloride, sodium, total dissolved solids (TDS)
Scaly residue, soaps won't lather	Chloride, hardness, sodium
Slimy residue, jelly-like substance	Chloride, iron bacteria, pseudomonas, pH, silica, sodium
Stained laundry, plumbing, water appliances	Iron, manganese, sulfate, tannins
Unpleasant taste or smell	Coliform bacteria, iron, manganese, sulfate, tannins
Water softener to treat hardness (before purchase)	Chloride, hardness, iron, manganese, pH, sodium, sulfate, turbidity

It is important to note that these are only some tests that may be recommended. Contact the [wellcare®](#) Hotline for further assistance at 888-395-1033.

## Taking a Water Sample

The laboratory chosen should provide specific sampling instructions and clean bottles or small plastic bags for collecting the water sample. Lab containers should not be rinsed or filled to the top. Check to see if the sample must be refrigerated or treated with special chemicals.

It may be necessary to take a sample from the tap with the first flush of water in the morning or after the tap has been allowed to run for a period of time. If there is suspicion that there may be a problem somewhere in the home plumbing, samples may need to be taken from several points: before and after water enters the hot water tank, for example, or at the inlet and outlet of a filtering device. If testing for evidence of corrosion, allow the water to stand in the plumbing system for at least 12 hours.

Instructions for taking samples should carefully be followed. Sampling is the most important part of testing, and carelessly collected samples can yield inaccurate results.

How to collect water samples:

- Step 1: Remove the aerator from an indoor, lead-free, cold water faucet. If testing for bacteria, flame the end of the faucet with a lighter to destroy any organisms in the tap itself.
- Step 2: Let water run for five minutes to bring in water that has not been in contact with household plumbing.
- Step 3: Reduce the water flow until the stream is about 1/4-inch in diameter.
- Step 4: Fill the special container as instructed by the testing laboratory. Do not let anything touch the inside of the cap or the container.
- Step 5: Close the sample container and transport it as instructed by the laboratory.

## Understanding Test Results

The report of analysis, as some laboratories call test results, can take a variety of forms. It may be a computer printout of results from the specific tests requested or a preprinted form with the results typed or written into blocks or spaces. It may include some general information about the laboratory that performs the test and the types of tests that were done or it may provide only the results.

The amount of a specific contaminant in the water sample will be expressed as a concentration of a specific weight of the substance in a specific volume of water. The most commonly used concentration units for drinking water analyses are provided in our information sheet [Understanding Your Well Water Test Results](#).

The test results also may use other symbols and abbreviations. Laboratory methods have detection limits, or levels below which contaminants cannot be reliably detected. That does not necessarily mean that the chemical is not present. There could be so little present that it cannot be reliably detected with the laboratory equipment or testing procedures being used.

The important question is whether the contaminant poses a health threat at the particular concentration. Compare the water test results to the federal standards in our information sheet [Understanding Your Well Water Test Results](#) and to other guidance numbers, such as health advisories, to assess the potential for health problems. If in doubt, contact the wellcare® hotline, state health department or environmental agency, the local extension service, or the well water contractor.

After you get the first test results, it is recommended to follow up with a second test taken at a different time, before deciding on any water treatment. This is because there is a certain margin of error in water testing, and contamination problems may vary.

## Additional Resources

The following sites provide up-to-date information on efforts to protect water supplies and steps you can take as a private well owner:

Water Quality Association     [www.wqa.org](http://www.wqa.org)

The Groundwater Foundation     [www.groundwater.org](http://www.groundwater.org)

## **For More Information on Testing Well Water**

See our [wellcare®](#) brochure and information sheet on [Well Water Testing](#) or contact your licensed well contractor, cooperative extension office, local health department, state environmental agency, or the [wellcare®](#) Hotline.

The Association of Clinicians for the Underserved (ACU) participated in the writing and research for this information sheet. The ACU is a nonprofit, transdisciplinary organization of clinicians, advocates and health care organizations united in a common mission to improve the health of America's underserved populations and to enhance the development and support of the health care clinicians serving these populations. Please visit the ACU at [www.clinicians.org](http://www.clinicians.org).



## **Information to help maintain and protect your water well system:**

[wellcare®](#) is a program of the [Water Systems Council \(WSC\)](#). WSC is the only national organization solely focused on protecting the health and water supply of an estimated 23 million households nationwide who depend on private wells (according to the U.S. EPA).

This publication is one of more than 100 [wellcare®](#) information sheets available FREE at [www.watersystemscouncil.org](http://www.watersystemscouncil.org).

Well owners and others with questions about wells and well water can contact the [wellcare®](#) Hotline at 1-888-395-1033 or visit [www.wellcarehotline.org](http://www.wellcarehotline.org) to fill out a contact form or chat with us live!

## **JOIN THE WELLCARE® WELL OWNERS NETWORK!**

By joining the FREE [wellcare®](#) Well Owners Network, you will receive regular information on how to maintain your well and protect your well water.

Contact us at 1-888-395-1033 or visit [www.wellcarehotline.org](http://www.wellcarehotline.org) to join!