

# wellcare® information for you about

# Well Water Testing

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To keep your well water clean and pure and your well operating at peak performance, regular water testing is an important maintenance tool. Private well owners are solely responsible for the quality of their drinking water. So it is up to you, the well owner, to decide when and how to test your water.

## Recommended Testing

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

Table 1 (see page 2) describes some conditions that may prompt you to test for select contaminants. Table 2 (see page 2) lists the limits for some primary contaminants.

For example, if your well is in an area of intensive agricultural use, test for nitrates and the pesticides commonly used in that region. If household tests of radon in the air are high, test for radon in water. If you have problems with taste, odor, staining or color of your water, then test levels of iron, manganese and sulfate.

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

- someone in your household is pregnant or nursing
- there are unexplained illnesses in the family
- your neighbors find a dangerous contaminant in their water
- you note a change in water taste, odor, color or clarity
- there is a spill of chemicals or fuels into or near your well.

Contact your local health department, cooperative extension service, state health or environmental agency or your well professional for guidance in selecting tests.

## Choosing a Testing Lab

Approach water testing as a smart shopper. Get an up-to-date list of all state-approved laboratories and the specific tests they are certified to perform from your state health or environmental agency. Check with individual laboratories to get prices. Ask how soon you should expect results and about the information that will be provided with the test results. A good lab should help you interpret the results and make sense of the scientific data.

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**Table 1: Tests for Specific Conditions**

Conditions or Nearby Activities	Recommended Test
Recurrent gastrointestinal illness	Coliform bacteria
Household plumbing contains lead	Copper, hardness, lead, pH, salts
Radon present in indoor air or region	Radon
Scaly residues, soaps don't lather	Chloride, hardness, sodium
Water softener to treat hardness	Iron, manganese (before purchase)
Stained plumbing fixtures, laundry	Iron, manganese, sulfate, tannins
Objectionable taste or smell	Hydrogen sulfide, pH, hardness, metals
Water is cloudy, frothy or colored	pH, salts, tannins, turbidity
Corrosion of pipes, plumbing	Copper, lead, pH, salts
Rapid wear of water treatment equipment	Hardness, iron, manganese, pH, salts
Nearby areas of intensive agriculture	Coliform bacteria, nitrate, pesticides
Nearby coal, other mining operation	Metals, pH, TDS
Gas drilling operation nearby	Barium, chloride, sodium, strontium
Gasoline or fuel oil odor	Volatile organic compounds (VOCs)
Dump, landfill, factory or dry-cleaning operation nearby	Metals, pH, salts, VOCs
Salty taste and seawater, or a heavily salted roadway nearby	Boron, chloride, sodium, TDS

**Table 2: Tests for Specific Contaminants**

Contaminant	When to Test	How to Test	When to Treat / Maximum Limits
<b>Arsenic</b>	Baseline test in areas prone to arsenic / annually after treatment	State Laboratory	10 parts/billion
<b>Bacteria</b>	Annually in spring; newborn in house; well equipment installed	Local health department test of total coliforms	Positive test for total coliforms, presence of fecal coliforms
<b>Chromium</b>	Near steel/pulp mills or In at-risk states*	State laboratory	100 parts/billion
<b>Iron</b>	Water colored or leaving stains of orange/red, rusty	State laboratory	300 parts/billion
<b>MTBE (methyl tertiary butyl ether)</b>	Water has oil/gas smell or oily film in area where MTBE used	State laboratory	20 parts/billion
<b>Nitrate</b>	Annually in farm areas, pregnant woman/infant in house	State laboratory	10 parts per million
<b>Radium</b>	Area with high radium in bedrock	State laboratory	5 picocuries per liter
<b>Radon</b>	Before buy / move into new home	State laboratory	Check with State Radon Office
<b>Sulfur &amp; Manganese</b>	Bitter taste, rotten egg odor, black/brown water or staining	Local health department	250 parts/million – Sulfur 50 parts/billion - Manganese
<b>TCE (trichloroethylene)</b>	Near factories/dry cleaners or In at-risk states**	State laboratory	5 parts/billion

\* Chromium at-risk states: California, Connecticut, Delaware, Illinois, Indiana, Maryland, New York, New Jersey, Pennsylvania, Texas and Wisconsin

\*\* TCE at-risk states: Pennsylvania, Illinois, Georgia, Texas, Massachusetts and West Virginia

## Taking a Water Sample

The laboratory you choose should provide specific sampling instructions and clean bottles in which to collect the water sample. Do not rinse lab containers or fill them to overflowing. Check to see if the sample must be refrigerated or treated with special chemicals.

You may need 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 you suspect a problem somewhere in your home plumbing, you may need to take samples from several points: before and after water enters the hot water tank, for example, or at the inlet and outlet of a filtering device.

Again, carefully follow instructions for taking samples. Sampling is the most important part of testing. A carelessly collected sample can give you inaccurate results.

## 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 for the specific tests you requested or a preprinted form with your 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 your results.

The amount of a specific contaminant in your 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 Table 2.

The test results may also include 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.

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### To Collect Most Water Samples

*Always follow laboratory directions carefully to ensure the accuracy of the test.*

**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.



*\* From "Drinking Water Well Management," Home\*A\*Syst, Natural Resource, Agriculture and Engineering Service (NRAES)*

The important question is whether the contaminant poses a health threat at that particular concentration. Compare your water test results to the federal standards in Table 2 and to other guidance numbers, such as health advisories, to assess the potential for health problems. If in doubt, contact your state health department or environmental agency, the local extension service, your water well professional or the wellcare® Hotline.

After you get your first test results, you would be wise to follow up with a second test taken at a different time before you decide on any water treatment. This is because there is a certain margin of error in water testing and contamination problems may vary. For more information on understanding test results see our wellcare® information sheet on “Understanding Your Well Water Test Results.”

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## For more information to help you maintain your well and protect your water supply



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 the 43 million people nationwide who depend on household wells for their water supply.

This publication is one in a series of wellcare® information sheets. There are more than 90 available FREE on the WSC website at [www.watersystemscouncil.org](http://www.watersystemscouncil.org).

Well owners and others with questions about wells or groundwater can also contact the FREE wellcare® Hotline at 1-888-395-1033 or visit [www.wellcarehotline.org](http://www.wellcarehotline.org)

**JOIN THE WELLCARE® WELL OWNERS NETWORK! You can join the well owners network and receive regular information on how to maintain your well and protect your well water...it's FREE!**

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

