Protect Your Home's Water

epa.gov/privatewells/protect-your-homes-water

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Testing wells to safeguard your water

Testing frequency

Test your private well annually for total coliform bacteria, nitrates, total dissolved solids, and pH levels. If you suspect the presence of other contaminants, you should test for those also. You can also contact your local health department to find out what substances may be common in your area's groundwater.

You may want to test more frequently if small children or elderly adults live in your house or if someone in your house is pregnant or nursing. These segments of the population are often more vulnerable to pollutants than others.

You should also test your private well immediately if:

- There are known problems with ground water or drinking water in your area
- Conditions near your well have changed significantly (i.e. flooding, land disturbances, and new construction or industrial activity)
- You replace or repair any part of your well system.
- You notice a change in your water quality (i.e. odor, color, taste).

In addition, well owners should also determine if the ground water you rely on for household use is under direct influence from surface water. Ground water under the direct influence of surface water is susceptible to contamination from activities on the surface. Direct influence

is determined on a site by site basis under state program criteria. To find a state agency to contact, please click here.

Identifying reasons to test your water

The chart below lists common conditions or nearby activities that well owners should be aware of and the substance(s) that you should consider testing for to ensure your well is safe. Not all of the substances listed pose an immediate or long term health problem, some impact quality of life only such as appearance, taste, and odor.

Conditions or Nearby Activities:	Test for:
Recurring gastro-intestinal illness	Coliform bacteria
Household plumbing or service lines that contain lead	pH, lead, copper
Radon in indoor air or region is radon rich	Radon
Corrosion of pipes, plumbing	Corrosion, pH, lead
Nearby areas of intensive agriculture	Nitrate, nitrite, pesticides, coliform bacteria
Coal or other mining operations nearby	Metals, pH, corrosion
Gas drilling operations nearby	Chloride, sodium, barium, strontium
Dump, junkyard, landfill, factory, gas station or dry-cleaning operation nearby	Volatile organic compounds, total dissolved solids, pH, sulfate, chloride, metals
Odor of gasoline or fuel oil, and near gas station or buried fuel tanks	Volatile organic compounds
Objectionable taste or smell	Hydrogen sulfide, corrosion, metals
Stained plumbing fixtures, laundry	Iron, copper, manganese
Salty taste and seawater, or a heavily salted roadway nearby	Chloride, total dissolved solids, sodium
Scaly residues, soaps don’t lather	Hardness
Rapid wear of water treatment equipment	pH, corrosion
Water softener needed to treat hardness	Manganese, iron
Water appears cloudy, frothy or colored	Color, detergents

Where to test your water

Only use laboratories that are certified to do drinking water testing. To find a certified laboratory in your state, you can contact:

- A State Certified Laboratory in your state.
- Your local health department, which may provide private well testing for free.

Test results

Your water test results should include the concentration of the substances you tested for. It may also include whether the substance concentration exceeds a national primary or secondary drinking water standard. In case your test results are not compared to EPA's national health standards, they are provided for your reference:

> See the List of Drinking Water Contaminants and their Maximum Contaminant Levels (MCL)(6 pp, 920K, About PDF) for information on Drinking Water Contaminants.

Treatment

If a contaminant is found to exceed health standards in your sample, contact your public health department for specific steps to follow and have your well re-tested to confirm the contaminant's presence and concentrations. Some problems can be handled quickly. For example, high bacteria concentrations can sometimes be controlled by adding disinfection to a well, such as: chlorine, ozone, ultra-violet light, and electronic radiation. More specific information can be found in the Center for Disease Control's guide to drinking water treatments for household use.

On-site treatment processes like disinfection, distillation, and filtration may remove the contaminants found in your well water. However, depending on the contaminant, its concentration, and the condition of the well, you may need a new source of water or to drill a new well.

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Prevent water well pollution

Protect your water supply by carefully managing activities near the water source. For households using a domestic well, this includes keeping contaminants away from sinkholes and the well itself. Keep hazardous chemicals out of septic systems.

- Slope the area around the well to drain surface runoff away from the well.

- Install a well cap or sanitary seal to prevent unauthorized use of, or entry into, the well.
- Keep accurate records of well maintenance, such as disinfection or sediment removal, that may require the use of chemicals in the well.
- Hire a certified well driller for any new well construction, modification, or abandonment and closure.
- Avoid mixing or using pesticides, fertilizers, herbicides, degreasers, fuels, and other pollutants near the well.
- Do not dispose of wastes in dry wells or in abandoned wells.
- Do not cut off the well casing below the land surface.
- Pump and inspect septic systems as often as recommended by your local health department.

- Never dispose of harsh chemicals, solvents, petroleum products, or pesticides in a septic system or dry well.

- Periodically inspect exposed parts of the well for problems such as:
  - Cracked, corroded or damaged well casing
  - Broken or missing well cap
  - Settling and cracking of surface seals
- Regularly check the integrity of any above ground and underground storage tanks that hold home heating oil, diesel, or gasoline on your property
- Check with your local health department or environmental agency to ensure activities and industry on or near your property are set a safe distance from your well.

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Identify potential sources of contamination in your community

In addition to the area near your drinking water well, you should be aware of other possible sources of contamination that may already be present in your community or may be moving into the area.

Consult a local expert to find out the physical and chemical properties of the groundwater you rely on and the presence of any potential drinking water contaminants. Such experts may include, but are not limited to:

- Local health department officials

- State environmental agency officials
- Agricultural extension agents
- Nearby public water system officials
- Local professional geologists and civil engineers

Find out about existing and proposed facilities that may pollute your drinking water. Check the local paper for announcements or call your planning or zoning commission to find hearings or zoning appeals on development, construction or industrial projects. Attend these hearings, planning meetings, or zoning appeals. Ask questions to ensure your drinking water will be protected during construction and operation of a facility. Make sure the project has plans for managing storm water and any wastewater it might produce. Request the project's environmental impact statement to confirm it includes a review of drinking water sources.

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Protect your water after a natural disaster or emergency

Flooding, earth quakes, landslides, and other natural disasters can impact the safety of your drinking water by allowing contaminants to enter your private well system. If you suspect your drinking water well may be contaminated after a flood or another natural disaster,

contact your local or state health department or environmental agency for advice on inspecting and testing your well. If possible, use a contractor with experience in servicing drinking water wells to inspect and test your well.

Water well flood response steps

- Stay away from the well pump while flooded to avoid electric shock.

- Do not drink or wash from the flooded well to avoid becoming sick.
- Get assistance from a well or pump contractor to clean and disinfect your well before turning on the pump.
- After the pump is turned back on, pump the well until the water runs clear to rid the well of flood water.
- If the water does not run clear, get advice from the county or state health department or extension service.

EPA provides more specific steps for well owners to follow in its short guide "What to do After the Flood".

Water well natural disaster and emergency response

Flooding is a common cause of private well contamination. However, there are other emergencies which can impact well water safety. The Center for Disease Control (CDC) has a website dedicated to preparing for, responding to, and surviving natural disasters and severe weather.