

# GROUNDWATER PROTECTION: WELLS

Kentucky Division of Water

Ninety-five percent of all available freshwater comes from aquifers underground. And since most surface water bodies are connected to groundwater, our impact on groundwater is important. Additionally, many public water systems draw all or part of their supply from groundwater, so protecting the resource protects the public water supply and impacts treatment costs.

If you own a well to provide water for your family, farm or business, groundwater protection is doubly important. As a well owner, you are the manager of your own water system. Protecting groundwater will help reduce risks to your water supply.

## Take Steps to Protect Groundwater

Locate any abandoned wells on your property. Contact a certified water well driller to determine if an unused or open well on your property needs to be properly decommissioned. An improperly abandoned well can be a direct pathway for contamination into the aquifer. Never dispose of any substance down an abandoned well.

If the abandoned well has not been properly decommissioned, call a certified water well contractor to do so. If you have a septic system, have it checked regularly by a qualified septic system contractor. A failing septic system may present a contamination threat to the groundwater.

Properly use, store and dispose of hazardous household substances, which include:

- Gasoline and oil
- Paints and paint thinner
- Cleaning products
- Weed killers
- Pesticides
- Fertilizers

Proper use means always following the manufacturer's instructions. Do not over apply fertilizers, pesticides, and weed killers. Also, do not apply or mix such substances close to the wellhead.

Proper storage of hazardous household substances means keeping them in sealed containers in a secure place.

Proper disposal of hazardous household substances means do not dump them on the ground, pour them down the drain, or flush them down the toilet. Instead, contact local waste authorities about proper disposal.

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## Proper Well Location and Construction

If you are planning to construct a water well, work with a certified water well and registered hydrogeologist to determine the best location for the well. They will be familiar with state and local well construction codes, including those pertaining to separation distances from potential contamination sources. The Kentucky Division of Water, Groundwater Section administers the Water Well Drillers Certification Program, which requires certification of water well drillers and also that the wells they drill meet the minimum construction standards.

## Regular Well System Maintenance

If you have an existing well, disinfect it regularly and get an annual well system maintenance checkup to reduce risks to your water supply and prevent costly and inconvenient breakdowns. Refer to the Water Well Owner's Guide for guidance on disinfecting and maintaining your water well. The annual well inspection should be performed by the well owner or a certified water well driller or water treatment specialist and include:

- Examination of the wellhead
- Checking the pumps flow rate
- Water level in the well
- Pump performance
- Pressure tank and gauges
- Pressure switch contacts
- Testing the well for the presence of bacteria

A clear, concise, written report should be provided following the checkup explaining the results and any recommendations for service. The well owner should also periodically check the well cover or cap and the well casing above the ground to make sure they are in good shape.

## Water Testing and Treatment

One of a well owner's most important responsibilities is to regularly test your water supply. First, well owners should have their well water tested annually for the presence of bacteria. The well owner or a groundwater professional can sample the well. The sample should be delivered to a Certified Drinking Water Laboratory for analysis. The presence of bacteria can indicate a problem with your water supply.

Indicators of potential water quality problems with your water supply include:

- A change in the water's taste, odor, or appearance
- A family member or houseguest who has recurrent incidents of gastrointestinal illness

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Reasons for other testing include:

- A pregnancy or new infant living in the home
- A dangerous contaminant shows up in your neighbor's water
- A need to monitor the efficiency and performance of home water treatment equipment

## Contaminants of Local Concern

Contaminants of local concern may include landfills, industrial sites, hazardous substance spills, or improper disposal of hazardous household wastes. Some naturally occurring contaminants, such as arsenic and radon are area specific. To determine what might be of local concern, contact the Kentucky Division of Water or Division of Waste Management, ask a qualified local water well system contractor or water treatment company, a certified drinking water testing laboratory or local health or environmental health officials.

Upon receiving test results, ask the lab if there are any contaminants that present a health risk or check with the Kentucky Division of Water, Drinking Water Section at 502-564-3410. You can also check out your test results against the U.S EPA's maximum contaminant levels at the following link: [Drinking Water Regulations | US EPA](#).

Should any contaminants above levels of health concern remain after any necessary maintenance, well owners can talk to a certified water well driller, water treatment system contractor about options such as installing a new well, rehabilitating the well, or installing a water treatment technology to address the specific water quality issues.

## Water Treatment Devices

When considering a water treatment device, have a qualified water treatment professional review your test results to make sure the treatment system specifications match up to the substances and concentrations you need to treat.

Also, there are performance testing programs available for water treatment systems, such as those of the Water Quality Association and National Sanitation Foundation (NSF) International. Water quality testing is voluntarily in Kentucky.

## Water Testing Laboratories

You can find a certified drinking water testing laboratory by emailing [DOWLabCertification@ky.gov](mailto:DOWLabCertification@ky.gov) and requesting a list of certified drinking water laboratories or you can contact your local health department for further help.