

Well-A-Syst

A voluntary program to assist private drinking well users evaluate and modify practices to protect their drinking water supply

Private Drinking Water Well Management

Why should you be concerned?

The condition of your water supply system is an important factor to consider when looking at the quality of your drinking water. Specifically, you should be concerned about the location and condition of your well and the activities around your well that may affect the quality of your drinking water supply.

Evaluate the condition of your private well by answering the following questions:

1. Do you own a dug or driven well, rather than a drilled well?
2. Is your well more than 20 years old?
3. Have you tested your water supply within the last three years?
4. Is your well casing (well pipe) less than 12 inches above ground level and 19 feet below ground level?
5. Is there an earth depression around your well casing, or does the casing have cracks or holes?
6. Is your well downhill from any potential contamination sources (for example, septic system, pesticides, fertilizer, animal manure, petroleum storage, or other pollutants)?
7. Do you have any abandoned wells on your property?

If you answered “Yes” or you do not know the answer to any of these questions, use this worksheet to address those issues. The information will help you develop a voluntary plan of action to reduce the contamination risks to your drinking water supply.

1. Do you own a dug or driven well, rather than a drilled well?

A dug well is a large-diameter hole normally wider than three feet and is often built by hand. Usually shallow and often poorly protected from surface water runoff, these wells are the most susceptible to contamination.

A driven well is typically two inches wide or less and installed in areas of loose materials such as sand. Since driven wells are usually shallow (less than 50 feet), the potential for contamination is high.

A drilled well with properly installed casing and grout is usually the least vulnerable to contamination and is typically the safest.

The depth of your well is another important factor to consider when assessing water quality. Contaminants that infiltrate from the surface are more likely to pollute shallow, uncased wells than deep wells with properly installed casing.

2. Is your well more than 20 years old?

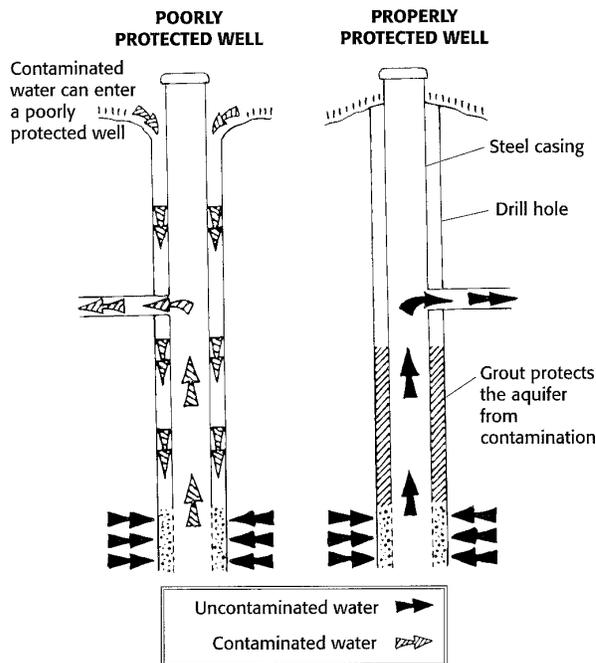
The age of your well is a factor when considering the potential for contamination of your water supply. Older wells are often shallow and more likely to be near potential pollution sources. Inadequate or corroded casing in these wells can cause problems.

3. Have you tested your water supply within the last three years?

Water testing is the only sure way to know the quality of your water supply. Some contaminants may only affect appearance, while others such as bacteria, nitrates, and toxins can be harmful or even fatal. Testing should be done frequently for bacteria; for other pollutants, tests should be done every three to five years. Consult with your local health department or state Water Quality Control Division about testing procedures.

4. Is your well casing (well pipe) less than 12 inches above ground level and 19 feet below ground level?

In assessing potential contamination, you need to consider casing height and depth. In Colorado, the well casing is required to extend 12 inches above ground and at least a minimum of 19 feet below ground level.



5. Is there an earth depression around your well casing, or does the casing have cracks or holes?

If the surface of the ground around your well casing is lower than the surrounding landscape, it provides an area for surface water to collect. Contaminants in the standing water around a well can either leak down along the well casing or through cracks in the well casing.

The well casing and cap should be inspected periodically. It is possible for the well casing to erode or crack and the well cap to become damaged. Visually inspect the above-ground portion of your well for holes or cracks and ensure the cap is secure. You can also examine the inside of the casing by removing the well cap and shining a light around the inside of the casing.

6. Is your water supply downhill from any potential contamination sources?

If a well is downhill from a livestock yard, a leaking petroleum storage tank, or failing septic system, it has a greater chance of being contaminated than a well uphill from these pollution sources. However, surface slope does not always indicate the direction of ground water flow, especially for deep aquifers.

On existing wells that are down slope from contaminants, consider removing contaminant sources or diverting surface water runoff away from the well.

Locating a new well takes planning and consideration. Wells should be at least 50 to 100 feet and uphill from any source of contamination. Factors such as location to surface drainage and direction of ground water flow also are important. The actual distance depends on the geological conditions of your property, for example shallow topsoil, fractured rock and depth to water. When in doubt, double the distance.

7. Are there abandoned wells on your property?

Abandoned wells are often an easy and direct route for contaminants to enter your ground water. In addition, they pose a liability for the owner; it is not unheard of for livestock—or small children—to fall into an abandoned well, especially a dug well. Guidelines on plugging abandoned wells have been developed and are available from the State Engineer's Office, Division of Water Resources.

Glossary

contaminant

a substance which makes another substance impure or unsuitable for its original use; may include a chemical material, organic material, live organism, radioactive material or heated or cooled water

grout

any material which is used to form a permanent impermeable seal between the casing and the well bore or between two strings of casing or which is used in plugging and sealing wells; a thin mortar for filling cracks and crevices in masonry

well casing

a pipe or tube constructed of PVC or metal used to line the borehole of a well to prevent contamination of a drinking water supply system

Contacts

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Well*A*Syst Worksheets

Private Drinking Water Well Management
Cistern Management
Site Assessment
Septic System Management
Household Hazardous Waste Management

Livestock Management
Fertilizer Management
Pesticide Management
Petroleum Storage Management

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