

# Living with Well & Septic

## Water Wells and Septic in the Evergreen/Conifer area



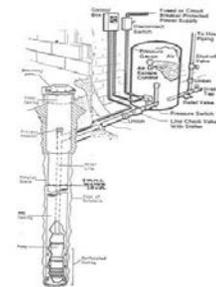
Approximately 85% of the residences in our area are served by wells and septic systems instead of municipal water and sewer. To the uninitiated who associate wells and septic systems with hard-scrabble farm life, this may seem like taking country living to the limit. But today's wells and septic systems are engineered to provide years of trouble-free service with minimal maintenance. In fact, there are so few maintenance costs that we consider wells and septic systems a cost savings by comparison to municipal water and sewer utilities that charge \$100/month or more. And the icing on the cake is that well-water users uniformly report that their water tastes better than any other water in the world!

### Wells—water supply

In our mountain area, wells don't tap into a water table or aquifer like they do on the plains. Instead, they draw water from veins in the subterranean granite where water tends to accumulate.

The typical water well consists of a drilled borehole, 8-10 inches in diameter at the top and narrowing to 6 inches at the bottom. The hole is lined with a steel casing for the first 20 feet or to solid bedrock and plastic pipe then extends to the bottom. A cement and water mixture (grout) is poured between the upper casing and the side of the borehole to prevent shallow groundwater from entering the well. A submersible pump is located above the bottom of the hole, inside the plastic pipe. The water line to the dwelling is buried at least 6 feet deep to keep it below frost line in winter. The only portion of the well that is usually visible is the top of the steel casing with the cap bolted to it.

Well depths may vary from 50 feet to over 1,000 feet; it is possible for well holes drilled within 25 feet of each other to tap into different veins and produce significantly different yields. Well yields vary from 0.5 gpm (gallons per minute) to over 30 gpm. If a deep well has a low yield, it may be considered quite adequate because water stored in the bore of the hole (approximately 1 gallon per foot of well bore hole) will provide water for the family during peak usage times (mornings and evenings), while the well replenishes the storage 24 hours a day. Even where a shallow well yields relatively little water, a 200-500 gallon tank may be installed to provide storage for high-use periods and render the water system viable.



Water well contractors suggest that people use approximately 75 to 100 gallons of water per day in the following ways:

Bath:	37 gallons
Shower:	20 gallons
Toilet:	6 gallons
Dish washer:	14 gallons
Laundry :	40 gallons

A dripping faucet can use over 12 gallons a day and a leaking toilet may waste as much as 60 gallons a day.

We turn to licensed contractors to test the well as part of the due diligence in buying a home to determine whether the combination of well yield and storage capacity will provide adequate water to the household.

## Wells—water quality

---

In addition to testing a well for water production, we recommend our buyer clients test the quality of the water as well. The test typically examines total coliforms, a group of related bacteria commonly found in water and soil. The vast majority of coliform bacteria do not cause disease, but if coliform bacteria are found in water, other disease-causing bacteria and viruses that are more difficult to detect may also be present.

The test also examines nitrate levels. While small amounts of nitrates are present in virtually all individual water supplies, higher levels of nitrates may pose a health concern and it would be appropriate to request the seller to add a water purification system before accepting the quality of water as satisfactory. Other less frequently tested aspects of water quality include fluoride, hardness and radon.

Again, we suggest our buyer clients use a licensed contractor to sample the water quality. The same contractors that test well yield can perform this test.

## Septics

---

An Individual Sewage Disposal System (ISDS) usually consists of a septic tank and absorption (or leaching) field. The tank is buried, usually made of concrete or other durable material, has a capacity of 1000 gallons or more, and is divided into two compartments with an access lid to each.

Sewage from the house flows to the first compartment of the tank where bacterial decomposition occurs and materials that cannot be digested settle to the bottom as sludge or float to the top as scum. The remaining liquid flows into the second compartment through a series of baffles, where additional bacterial breakdown occurs.



From the tank, the effluent travels to the absorption field, which is a series of perforated pipes bedded in gravel. The liquid drains through the gravel and underlying soil before flowing back into the groundwater system. The filtering action of the soil purifies the liquid, resulting in a natural, environmentally sound process of recycling water.

Items such as disposable diapers, cigarette butts, sanitary napkins, bones, eggshells, coffee grounds and grease do not decompose readily and should be thrown out rather than put through the garbage disposal and septic system. Chlorine bleach may kill the bacteria that break down the sewage in the tank and should therefore not be used with laundry—use bleach additives and cleansers marked “septic system safe” instead.

The sludge and scum in septic tanks should be pumped at regular intervals. Every two years is usually safe, but if the septic pumper tells you the tank was only  $\frac{1}{4}$  full after two years, you might wait for 4 or even 6 years to repump, depending on usage.

Avoid compacting the gravel/soil above and around the leach field by not driving or parking vehicles or grazing horses or cattle over it. You can tell where the field is because, as the late Erma Bombeck said, the grass grows greener over the leach field.

Again, we recommend our buyer clients have the septic system on any home they contemplate purchasing tested by a professional contractor; the same contractors that test wells usually inspect septs too.