WATER SOFTENER CONNECTED TO SEPTIC TANKS

Water softener impact septic tanks in two ways

First, the backwash quickly changes the salt content of the septic system. Fast changes in salt content (and pH and several other parameters) will kill or disperse bacteria. However, bacteria can survive steady levels of salt content.

Enzymes are produced by bacteria, and are not directly affected by salt per se, but if you deplete the bacteria, you also deplete the enzymes. When bacteria die or disperse, they become solids that pass through to the leach field. The change in salt content also negatively affects the buoyancy of the solids and bacteria, helping increase the transfer of solids to the leach field.

Second, the typical water softener gives a large flow of cold water over a short time. This causes solids to wash out to the leach field due to hydraulic factors and possibly thermal changes. The warm sludge on the bottom of a septic tank rolls over on top of the cold water softener water.

Some septic tank additives can cause similar effects. With a “typical enzyme” product, you liquefy the solid wastes, as is seen in the cat food test. However, you aren’t bio-degrading the waste. That means you are only sending these liquefied solids to the leach field, where they will re-solidify once the enzyme/waste slurry is diluted.

> A true bacterial additive is a source of naturally occurring soil-type bacteria that seeds the tank so that it operates as designed. A bacterial additive can reduce the Impact of water softeners by introducing a healthy bacterial population with a micronutrient to boost resilience to toxicity, and by creating a dense sludge that settles better and wants to stay at the bottom of the tank (where it belongs).

The water softener industry would tell you there is no negative impact to a septic system from a softener. However, salt is nature’s preservative. It has been used over the ages to retard bacterial growth in food preparation and storage.

If the backwash from a water softener is saline (most, not all, are saline) then bacterial growth will be retarded (not killed, retarded). In and of itself, the backwash will not clog a soil absorption system, but if the bacterial activity in the septic tank is slowed down, the tank’s ability to provide primary waste treatment will be affected, possibly allowing solids into the leach field, If you find a sluggish field that has no other apparent culprit, look to the water softener.

In the soil particularly, salt reacts with the soil surface in the leach field or pit to form a biomat film that progressively reduces percolation, leading to failure. Water softeners are detrimental to septic systems over time for this reason alone. The effect on hydraulic capacity from original design is another consideration.

The softener discharge is likely to be a different temperature than the tank water, and this helps to prevent mixing. For example a cold discharge is not likely to disperse but rather will drop to the sludge layer and carry the salt with it. This discharge alone can turn the bottom over, disturbing the solids.

Concentrated quick salinity changes like those from a water softener discharge will cause an osmotic pressure change, causing individual bacteria to implode or explode as they can’t compensate. An imploded bacteria or au exploded bacteria is dead, as in killed. The population on a whole can be significantly affected.