

Message From the Manager: Water Heaters

Hello, this is Paul Tischler, General Manager of Sardis-Lone Elm Water Supply. Yes, if you ask me what time it is, I have been known to tell you in return how to build a watch! I am frequently asked questions like "why do the screens on my shower heads get clogged?" or "why do I constantly have to clean the screen on my kitchen faucet?". Not all customers experience these problems but some do and they are not isolated to just this water system. I wanted to take the time to explain the causes and solutions from both a water providers and a home-owners point of view.

All water is not the same. Water supply sources are regional by nature and quality can vary a great deal. Surface water in our area comes from Joe Pool Lake, Cedar Creek reservoir, and Richland Chambers reservoir. Groundwater supplies come from both the Trinity and Woodbine aquifers. Why does this matter to a water heater? When it comes to heating water, its all about the Total Dissolved Solids (TDS). Examples of dissolved solids are calcium, magnesium, sodium, etc. All water supplies have TDS; however, surface water supplies typically have lower amounts where groundwater supplies are usually run higher. Sardis Lone Elm currently provides a blended supply. From 1964-2008, we relied 100% on groundwater and then surface water was introduced in 2009. As of 2021, the ratio of ground to surface water had changed to 60/40 respectively. Due to limited supply in the aquifers, no new groundwater sources will be added and the ratio will continue to evolve where the majority of the water supplied will be from surface water sources. Simply put, as new homes are added to the system, more treated surface water will be purchased. Currently, the TDS content of our blended supply averages 540 mg/l. For perspective, State regulations call for a maximum Total Dissolved Solids (TDS) content in potable water to be less than 1,000 mg/l.

How does TDS affect conventional water heaters? As water is heated, dissolved solids will precipitate out of solution and settle in the bottom of the tank as sediment. The higher the temperature, the more sediment will occur. Typically, anything over 140F will make the sediment much worse. If you are constantly having to clean the screens on your shower heads and kitchen & bathroom faucets, your water heater may be set too high. Please be mindful that 140°F water can cause scalding accidents and burns, especially with the elderly and children. Temperature limiting fixtures such as bathtub faucets and shower mixers can help reduce risk of scalding even further. Be careful though, the CDC recommends at no point should the water be below 120° due to the possibility of bacteria growth. Heat dissipates the disinfectant residual (chlorine) in the water and bacteria can thrive in a warm environment. So, having the temperature set in your water heater between 120°-140° will prevent the possibility of bacteria growth while also greatly reducing mineral sediment. Some heating element switches on water heaters have a scale between 110°-160°, while others just say "High, Medium, Low". A good way to dial in the desired temperature is to run the hot water at a sink closest to the water heater for 3-4 minutes and then measure the temperature with a cooking thermometer. It is important to know the maintenance recommendations that are supplied in the manual that

pertains to your particular unit. Most manufacturers suggest flushing conventional water heaters on an annual basis to help prevent corrosion and extend the life of the heater.

Now, let's discuss the alternative to conventional. Tankless water heaters are different in that they super heat the water through a coil system on demand with no storage. This method causes a scale buildup on this inside of the coils from the dissolved solids. The scale continues to build until eventually, it either breaks off and ends up in the screens of your shower heads and faucets or it closes off the coils and prevents water from flowing. Scale buildup will also greatly affect the efficiency of the heater because water is coming into contact with it instead of the metallic coils, making the heater work harder only to heat the water less. Please do not confuse the word "tankless" with the phrase "maintenance free". Where conventional water heaters have the storage capacity for scale and solids to accumulate in the bottom of the tank, tankless heaters do not and the effects of scale and solids will be seen more rapidly. The manual that came with your tankless water heater will contain maintenance procedures that recommend cleaning your heater on at least an annual basis or more frequently depending on the dissolved solids content of the water. Most heaters will come with a maintenance port that allows for a vinegar solution to be pumped through the heater which will dissolve the scale and discharge into a bucket. Please check with the manufacturer of your particular unit for more information. There are also scale inhibitor systems on the market that install on the cold-water line prior to the tankless water heater. These devices prevent scale from forming in the heater by offering a controlled dosage of polyphosphates that keep solids in solution and not allowing scale to form. An example of this type of device is the 3M AP430SS scale inhibitor which sells for around \$70. Neither Sardis-Lone Elm Water nor myself are recommending this specific device nor do we guarantee its effectiveness, I am only offering this information as an example of what devices are on the market that are designed to help tankless water heaters perform the way they were intended to. Research the internet by searching for "tankless water heater scale inhibitor", "tankless water heater maintenance", "tankless water heater scale", etc. and you will find more information than you can imagine.

Please know that water heater sediment and scale is not isolated to just Sardis-Lone Elm Water Supply customers. All water systems USA have dissolved solids. All water heaters need routine maintenance. Yes, conventional water heaters can be neglected to a point because of their storage capacity. Yes, scale will show itself faster in a tankless water heater. There are advantages and disadvantages to both types of heaters. Do the research and make an informed decision. Or, if your water heater has already been purchased, know the maintenance procedures and intervals. A little bit of maintenance can greatly extend the life of both appliances!!!