

Pataskala Utilities Department

Water Softeners

The City of Pataskala operates two separate water treatment plants. Both plants use groundwater pulled from wells as a drinking water source for our customers. As the water makes its way through the ground to the drinking water wells, it adsorbs minerals that it encounters. These minerals (notably calcium and magnesium) are what classifies the water in the wells as hard water. Hard water will leave mineral deposits on the inner lining of plumbing, leave a residue on clean dishes, and even require more soap to be used than would otherwise be necessary.



The Utility Department uses several Ion Exchange systems to soften the well water as it is treated. These systems are nothing more than industrial sized water softeners, similar to the units that many people have in their homes. They are filled with a media that carries a negative charge. This media is submerged in a salt water solution. The sodium in this solution has weak positive charge, causing the sodium to attach to the media. Calcium and magnesium carry strong positive charges. These stronger positive charges cause the hardness to adhere to the media and displace the weaker sodium bond. When the media becomes saturated with calcium and magnesium, a strong salt water solution is forced through to remove the

hardness by sheer volume of sodium ions. This process replenishes the media, making it ready to remove hardness once again.

Zero hardness water is undesirable in taste and leaves a “slimy” feeling on the skin. A balance of soft and hard water is blended at the treatment plants to achieve a cost effective, yet still reasonably soft water (around 110 parts per million). The cost of softening, however, is a considerable one as the Utility Department spends about \$175,000 each year on salt alone, and that price increases every year.



We would be happy to answer any questions at: Utilities Department, 621 W Broad St, 740-964-6275

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