

Anna Kulp

*A New Approach to Treating & Remediating Incrusting Bacteria in Water Supply Wells via
NaHSiO₃ + H₂O*

Water is the beginning of all things. One of our greatest global struggles is to ensure clean, safe drinking water to all parts of the world. Although my project focuses on water systems used for agricultural purposes, it is still important that the water be clean and free from bacteria. In the San Luis Valley, household and farm wells are infected with iron, manganese, and sulfur reducing bacterias. Although there are no alarming effects to the presence of these bacteria, they are capable of completely overtaking a well and eventually making it inoperable. Common routine chemical and mechanical removal treatments are not effective as they do not have long-term stability. Twelve years ago a mixture called AquaLuxus was developed. This mixture is a nonhazardous combination of sodium and silica. AquaLuxus attacks the bacteria, kills it, eliminates its protection, and eliminates its food source. In 2008, Oil Recovery Ventures LLS began using AquaLuxus in oil rigs to remove sulfate bacteria build up; the results were very promising. This is where I began my research; if AquaLuxus is successful at removing hydrogen sulfide (H₂S) in oil rigs, then would it not be effective in removing sulfate bacteria (a byproduct of H₂S) in water supply wells? AquaLuxus was first introduced to the San Luis Valley six months ago. The results from the first pilot project show a promising future for its success in water well treatment. I have begun compiling data from three wells and will continue to implement AquaLuxus into various wells.