furthermost from the well, open the faucet and run the water until chlorine odor is detected. Repeat this procedure for all other outside faucets before going to all inside plumbing fixtures to conduct the same process; this includes cold and hot water valves (hot water heater turned off), showerheads, laundry fixtures, dishwashers, and toilets. Allow the chlorinated water to stand in the well and the entire water system for a minimum of 12 hours (24 hours is recommended) during which time the system, with the exception of moderate toilet use, should be considered unusable. After 12-24 hours, chlorinated water can be flushed from the system through the furthermost outside faucet until the chlorine odor is no longer present. Once the chlorine odor is no longer detectable at all outside faucets, repeat the process for all indoor faucets and fixtures taking care not to discharge large amounts of heavily chlorinated water into a septic system, nearby lakes, rivers, ponds, or any surface waters, onto lawns, gardens, or sensitive plants. When no chlorine odor can be detected at any inside faucet or fixture, restore power to water heaters.

3. FOLLOW-UP ACTIONS: After waiting at least one week for the chlorine to dissipate, collect a water sample for Total Coliform and E-Coli (bacteria) analysis by a state-certified laboratory, following proper sampling procedures. The laboratory will likely reject a sample containing even a trace of chlorine, so the use of a chlorine residual test kit is recommended to ensure that chlorine is not present, before taking the sample. If bacterial contamination is detected in this sample, repeat the entire shock chlorination process, followed by a second bacteria test. A third positive bacteria test is a likely indication that the source aquifer is contaminated or a structural problem exists within the well. Upon a third positive bacteria sample, contact a well professional to thoroughly evaluate the condition of the well. If no problems are found that can be corrected, the installation of a continuous chlorination system will be necessary to ensure a safe supply of drinking water. If problems are found and corrected, shock chlorinate the system per this procedure, before taking a bacteria sample to ensure that the repairs have been effective.

4.ADDITIONAL IMPORTANT CONSIDERATIONS: The chlorine solution must come into direct contact with the bacteria that it is intended to eradicate. If there is a significant amount of scale or slime (“biofilm”) on the surfaces of the casing or bedrock, it will effectively shield the bacteria and prevent the chlorine solution from coming in direct contact with it. In this situation, mechanical cleaning and purging of the well may be required prior to any attempt at shock chlorination (contact a well professional).

Another important factor, frequently overlooked, is the effect of well water pH on the disinfection process. Chlorine’s effectiveness as a disinfectant decreases dramatically in high pH water. Chlorine is 100% effective as a biocide when used in water having a pH of 5.5, but only 34% effective at a pH of 7.6, and only about 10% effective at a pH of 8.1. Chlorine itself has a high pH: when a 50 ppm solution is added to water with a pH of 7.2, the pH of the mixture rises to 7.6, further reducing the chlorine’s biocidal effectiveness. Typically, the deeper the well the higher the pH. To effectively shock chlorinate a well with high pH water, consult a licensed water professional for assistance.