



Harford County Health Department

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Public Health
Prevent. Promote. Protect.
Harford County Health Department

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CHLORINATION AND DISINFECTION PROCEDURES PRIVATE WELL WATER SUPPLIES - WELL POLICY (WP-CD)

PLEASE READ THIS ENTIRE PROCEDURE BEFORE YOU BEGIN THE CHLORINATION PROCESS.

ACCEPTABLE TYPES OF CHLORINE

Liquid chlorine laundry bleach (5.25% Chlorine)

Granular swimming pool type chlorine (70% available chlorine)

Half liquid chlorine bleach and half granular chlorine solution (recommended)

Note: Some brands of chlorine tablets are ‘time-release’ or ‘slow dissolve’; these types should NOT be used.

DOSAGE

Drilled Wells: Use either 1-cup of liquid or 1/3 cup of granular chlorine per 20 feet of well depth. Regardless of the depth of the well, the Harford County Health Department (HCHD) recommends using a mixture of half liquid and half granular chlorine for the well disinfection process. If the well is over 100 feet deep, using liquid chlorine only is not recommended. The above concentration of chlorine should ensure an adequate amount to properly disinfect the system.

Note: If you have water treatment equipment, you must check with the manufacturer and/or the installer to determine if the chlorine will harm the system and to determine what chlorine levels can be used to disinfect the treatment equipment. If the water produced by your well is cloudy or contains iron, double the dosage to ensure sufficient disinfection.

Dug or Augured Wells: These wells will not be certified by the HCHD as potable water supplies, since they rely on shallow water sources which cannot be properly protected. If your property is served by a dug or augured well, contact the HCHD for replacement and abandonment procedures.

PROCEDURE

1. Evaluate the condition of your well:
 - a. If the well was drilled after 1980, the well casing should be at least eight (8) inches above the ground surface and have a two-piece vented cap. The casing and electrical conduit should be evaluated for any signs of damage. If any deficiencies are observed, they should be corrected before proceeding with the chlorination process.
 - b. If the well was drilled prior to 1980, the above construction standards may not be present. Some wells may be buried or installed in pits. These types of wells may not respond to the disinfection/chlorination process. Therefore, the HCHD recommends upgrading the construction of the well, so that the well terminates above grade and has the proper type of cap installed. In addition to providing a safer water supply, extending the casing above grade provides easier access for future maintenance. **Please contact a Master Well Driller for assistance.**
2. Disable the hot water heater as heated water can break down the chlorine residual present.
 - a. Turn off any electric hot water heater at the circuit breaker.
 - b. Turn any gas hot water heater control to “pilot”, or as directed by the unit’s instructions.
3. Remove the well cap and introduce the chlorine into the well. It is recommended that the chlorine be mixed in a clean plastic bucket with warm water, prior to being introduced into the well.

NOTE: If using a granulated chlorine solution, a small amount of solid chlorine should be allowed to sink to the bottom of the well to ensure complete disinfection of the water column.

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2027 Pulaski Highway
Havre de Grace, MD 21078
410-939-6680

HAVRE DE GRACE OFFICE
2015 Pulaski Highway
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4. Insert a hose connected to an outdoor faucet into the top of the well and re-circulate water into the well for two hours to ensure mixing of the chlorine and water. Using the same hose, wash the interior casing, cap and pump apparatus thoroughly with the chlorinated water. Remove the hose and reinstall the cap. No cap other than a watertight, two-piece, screen vented cap should be installed. Do not install a pump recovery rope outside of the well casing.
5. Run the outside faucets one at a time until a strong odor of chlorine is present. Any outside water lines to out buildings must also be chlorinated.
NOTE: Do not run the chlorinated water through any treatment/filtration device without first checking with the manufacturer or installer.
6. Run all plumbing fixtures inside the house, hot and cold, until the chlorine odor is detected. Run the chlorinated water through any water using appliances or accessories such as ice- makers, kitchen sink sprayers, dishwashers, showerheads, and washing machines.
7. The chlorinated water must remain in the plumbing system for a minimum of twelve (12) hours. **Do not use any water** for a minimum of twelve (12) to twenty-four (24) hours (preferred).
CAUTION: Using water with high levels of chlorine can cause injury to the skin and eyes, and damage clothing.
8. After the holding time, test the water for chlorine residual. A swimming pool test kit may be used for this application. There should be at least 5-ppm (mg/l) of chlorine residual in the system. If less is present, the system may not have been adequately disinfected and should be re-chlorinated following steps 2-7. If the residual chlorine is acceptable, the plumbing system must then be purged to remove the remaining chlorine.
9. To purge the system of chlorine, use an outside faucet or the tap at the base of the pressure tank. Using a hose, discharge the water to the sump pump or outside onto the ground surface. **Chlorinated water should NOT be discharged into the septic system.** This water should not be used for irrigation or for human or animal consumption. Once the chlorine residual is no longer present from the first location being flushed, flush the remainder of the fixtures in the plumbing system, including the hot water heater and other water using appliances. It is recommended that you run the well pump one (1) to two (2) hours at a time, allowing an equal amount of rest time to avoid overworking the well pump.
10. The chlorine level should be reduced to below 0.5 ppm before use of the water. Additionally, the chlorine level must be zero (0) before a water sample can be secured. Again, these levels can be verified using the chlorine test kit referenced above.

After having completed this chlorination procedure, your water supply needs to be sampled to verify it is safe for human consumption. It is recommended that the first water sample not be collected until at least seven (7) days after the chlorine is completely removed from the system. For a new or replacement drinking water well, two (2) consecutive satisfactory bacteriological samples taken a minimum of seven (7) days apart without the influence of chlorine between samples, and a satisfactory test for nitrates, turbidity, and sand is required by the Code of Maryland Regulations (COMAR) 26.04.04 for the issuance of a Certificate of Potability (COP). Public Water Systems may have different sampling requirements than a private system, therefore, please contact the HCHD for verification of sampling parameters.

To schedule a water sample or if you have any questions, please feel free to contact the HCHD at 410-877-2300. Since all water samples taken by the HCHD are processed through the State Laboratory, turnaround times may be extended for a number of reasons. If turnaround time is important to a homeowner, the HCHD recommends contacting a Certified Private Water Testing Laboratory, as most Private Labs offer significantly quicker results reporting. If utilizing a Private Lab, it is important to ensure that the laboratory is a Maryland Certified Water Testing Lab and that the individual collecting the samples possesses a Maryland Water Sampler Certification. The HCHD can provide a list of local Certified Water Testing Labs operating in Harford County upon request.