

FAQ Treatment and Continuous Disinfection of Private Water Systems:

Ohio Administrative Code (OAC) 3701-28-15

Also see Pond Filtration Requirements: OAC 3701-28-14

December 2012

Ultraviolet Light (UV) Disinfection

Question:

- 1. Can I use the inexpensive UV device from the hardware store for continuous disinfection of my private water system?**

Answer:

No. Only UV systems that meet The National Sanitation Foundation (NSF/ANSI) Standard 55 Class "A" or the equivalent can be considered for approval as a means of primary disinfection of private water systems in Ohio. Class "A" UV systems are listed at NSF

<http://www.nsf.org/Certified/DWTU/Listings.asp?ProductFunction=055%7CDisinfection+Performance%2C+Class+A&ProductType=&submit2=SEARCH> or with The Water Quality Association under their Gold Seal Program. Class B UV system are not permitted for continuous disinfection of private water systems in Ohio. <http://www.wqa.org/goldseal/4.html> .

See the Ohio Department of Health Bureau of Environmental Health Fact Sheet "Ultraviolet Light for Continuous Disinfection" for more information.

Any UV device used on private water systems in Ohio should be able to treat enough water to disinfect all household water at peak usage.

Question:

- 2. Since a UV disinfection system has no chemical residual, does it need the 120 gallons of retention (contact) tank required for contact time.**

Answer:

No. A 120 gallon retention tank is not required for UV disinfection. The 120 gallon Retention/contact tank is a requirement is for chlorine and iodine chemical disinfectants (ozone uses a different contact process).

Chemical Disinfection

Question:

3. Is a hydrogen peroxide disinfection system allowed in Ohio?

Answer:

Although hydrogen peroxide is recognized as a strong oxidizer and would be acceptable to use for treating aesthetic water conditions, it is not an acceptable means of continuous disinfection on private water systems.

The acceptable means for continuous disinfection of private water systems are chlorination, iodination, ozone, and ultraviolet light that meet National Sanitation Foundation (NSF) Standard 55 class "A" requirements. Anyone installing continuous disinfection on a private water system must be registered as a Private Water Systems Contractor with the Ohio Department of Health.

Question:

4. Do the rules require the local health department inspector to check a water supply for evidence of chlorine in the system prior to collecting a bacterial sample?

Answer:

*Yes. The local health department must always measure the chlorine residual (or other chemical residual) before collecting any water sample for a new or alteration permit. You should have a chlorine test kit. Some LHDs use chlorine test strips, however, ODH strongly recommends the use a DPD test kit that can measure down to .1 ppm. The homeowner should also be encouraged to always keep a test kit on site that is accurate enough to detect the low residuals of whatever disinfectant they are using. Water wells not required to have continuous disinfection should have **no chlorine** detected at the time a water sample is collected. All system that are required to have continuous chemical disinfection should have the required chemical residual present at the time the water sample is collected.*

Question:

5. Do we need to have an accurate measurement of the chemical disinfectant in order to determine the contact value for that disinfection system?

Answer:

The chemical residual should be accurately measured. Check the retention tank size (120 gallon minimum) and measure the chemical residual after contact. For chlorine, it should be no less than .4 ppm. You do not need to calculate the CT value if they have one 120 contact tank and it is a single family home.

Cyst Reduction Filters

Question:

6. Is there a size requirement for the NSF 53 cyst reduction filter?

Answer:

*If a filter meets NSF 53 for cyst reduction it will be a minimum **absolute** 1 micron filter. Filters that are listed on NSF Standard 53 must meet their stated claims for treatment: i.e. cyst reduction, specific chemical reductions etc.*

Currently the Harmsco PP (Poly-Pleat) absolute 1 micron cartridges are the only non NSF 53 filters approved by the Ohio Department of Health for cyst reduction on private water system in Ohio. Harmsco completed other third party testing to achieve the 99.95 percent cyst reduction.

Question:

7. What is meant by “absolute” filter size as opposed to a “nominal” filter size?

There is a substantial difference between filters that are rated as “absolute” and “nominal”. An “absolute” rated filter removes 99.95 percent of particles for the filters rated micron size. A “nominal” rated filter removes around 85 percent of that rated micron size, or in other words, allows 15 percent of the particles of that rated micron size through the filter.

Question:

8. Since many of the NSF 53 cyst reduction filters are rated at a low flow rate how should these cyst reduction filters be installed on a private water system to ensure that enough water is available for all the household needs?

Answer:

The installation of the filters must allow a flow of at least 10 gallons per minute per household. This will likely require the installation of the cyst reduction filters in parallel (not in series). In this way all of the filters work at the same time. For example a cyst filter rated for 2.5 gallons per minute would require the installation of four cyst filter units to maintain at least 10 gallons per minute.

Question:

9. *Is a permit needed to install a UV device on a well when it is not required by rule?*

Answer:

No. However, there are some caveats. A UV device should never be installed on a well that has deteriorated or is allowing surface water infiltration through faulty construction.