

Acceptable Annual Water Supply Start-up Procedures for Seasonal Public Water Systems

March 2016

According to the Revised Total Coliform Rule (40 CFR 141.857) all seasonal Public Water Systems (PWS) must demonstrate completion of a State-approved start-up procedure, prior to serving water to the public. A seasonal system is defined as a non-community water system that is operated in three or fewer calendar quarters per calendar year. A facility operator of a seasonal PWS must ensure that an acceptable annual start-up procedure, as described below, is completed and that the distribution system is free of coliform bacteria before the PWS can open and serve water to the public. The procedures described may also be applicable to systems that do not operate year round but are not considered seasonal (e.g. PWS open for 10 – 11 months) and non-public water systems.

Only the start-up procedure(s) that are specified for the facility's potable water system type may be used. Start-up procedures must be completed at least 15 days prior to opening for the season.

**Certification that an acceptable start-up procedure was performed must be submitted to the local health department, along with a copy of any pre-season coliform samples and disinfectant residuals that were collected.*

General Start- up Procedure

Annual Water Supply Start-up Disinfection Procedure

All water mains that are not subject to continuous water use shall be disinfected by completely filling to remove all air pockets, flushing the main to remove particulates, and filling the main with potable water. The potable water shall then be chlorinated by feeding liquid hypochlorite at a constant rate such that the water will not have less than a 25 ppm free chlorine residual throughout the facility water system. After a 24-hour holding period there must be a free chlorine residual of not less than 10 ppm throughout the facility water system.

Acceptable Alternate Start-up Procedures (water system type specific)

A. Water System Type: On-site Water System Using Chlorine Disinfection

1. Flush the well (when applicable) and chlorine contact tanks by running water from a tap nearest the water supply source until the water appears to be free of particulates and discoloration.
2. Install the chlorination equipment and ensure that it is operational.

3. Flush all water lines thoroughly utilizing continuous chlorination until a free chlorine residual of at least 2.0 ppm is measured at all taps in the distribution system. Shut off all taps and allow the water to remain undisturbed in the water lines for 24 hours. Evaluate the system for leaks and pressure loss.
4. If the pressure (20 psi minimum) and chlorine residual (0.2 ppm minimum) are acceptable, flush the distribution system again until the water appears to be free of particulates and discoloration. Confirm that a free chlorine residual of at least 0.2 ppm is present in the distribution system and then shut off all taps and allow the water to remain undisturbed for another 24 hours.

*If the system was unable to maintain adequate pressure or a free chlorine residual, correct the problem and repeat steps 2 and 3 before continuing.

5. After 24 hours, (48 hours total), flush each tap and confirm that a free chlorine residual of at least 0.2 ppm but less than 4.0 ppm is present. Collect at least one water sample for Total Coliform¹ analysis from a representative point in the distribution system for each water source. Submit the sample(s) to a laboratory certified by the New York State Department of Health (NYSDOH). If the results show the presence of coliform bacteria, steps 1 through 5 should be repeated. Water sample analysis reports must be submitted to the Local Health Department (LHD) and must show the distribution system is free of coliform bacteria prior to opening for the season.

B. Water System Type: On-site Water System Using Ultra-violet (UV) Disinfection

1. Flush the well by running water from a tap nearest the well until the water appears free of particulates and discoloration.
2. Install the ultra-violet disinfection equipment and ensure that it is operational.
3. Flush all water lines on the system with UV treated water until the water appears to be free of particulates and discoloration, and the distribution system is completely filled with treated water. Shut off all taps and allow the water to remain undisturbed in the water lines for 24 hours. Evaluate the system for leaks and pressure loss.
4. If the pressure (20 psi minimum) is acceptable, flush the distribution system again until the water appears to be free of particulates and discoloration.

*If a problem was discovered regarding maintaining adequate pressure, correct the problem and repeat step three (3) before continuing.

5. Collect at least one water sample for Total Coliform¹ analysis from a representative point in the distribution system and submit the sample to a laboratory certified by the NYSDOH. If the results show the presence of coliform bacteria, the steps for well disinfection should be followed. Water sample analysis reports must be submitted to the LHD and must show the distribution system is free of coliform bacteria prior to opening for the season.

C. Water Source: On-site Water System with disinfection waiver

1. Flush the well by running water from a tap nearest the well until the water appears free of particulates and discoloration.
2. Flush all water lines on the system until the water appears to be free of particulates and discoloration, and the distribution system is completely filled with water. Shut off all taps and allow the water to remain undisturbed in the water lines for 24 hours. Evaluate the system for leaks and pressure loss.
3. If the pressure (20 psi minimum) is acceptable, flush the distribution system again until the water appears to be free of particulates and discoloration.

*If a problem was discovered regarding maintaining adequate pressure, correct the problem and repeat step 2 before continuing.

4. Collect at least one water sample for Total Coliform¹ analysis from a representative point in the distribution system and submit the sample to a laboratory certified by the NYSDOH. If the results show the presence of coliform bacteria, the steps for well disinfection should be followed. Water sample analysis reports must be submitted to the LHD and must show the distribution system is free of coliform bacteria prior to opening for the season.

D. Water Source: Off-site Public Water System

1. Flush the seasonal use distribution lines with water from the approved off-site system until a detectable free chlorine residual* is present in the distribution system and the water appears to be free of particulates and discoloration. Shut off the taps and allow the water to remain in the lines undisturbed for 24 hours.
2. After 24 hours, flush each tap until the water appears to be free of particulates and discoloration, and confirm that a detectable free chlorine residual* is present in the distribution system. Shut off the taps and allow the water to remain in the lines undisturbed for another 24 hours.
3. After 24 hours, (48 hours total), flush each tap and confirm that a detectable free chlorine residual* is present in the distribution system. Collect at least one Total Coliform water sample from a representative point in the distribution system and submit it to a laboratory certified by the NYSDOH. If the results show the presence of coliform bacteria, steps 1 through 3 should be repeated. Water sample analysis reports must be submitted to the LHD and must show the distribution system is free of coliform bacteria prior to opening for the season.

*If no residual appears after continued flushing, please notify the operator of the PWS and the LHD.

Well disinfection: On-site Water System Using Ultra-Violet Disinfection or with a Disinfection Waiver

1. Run Water until clear, using an outdoor faucet closest to the well or pressure tank.
2. Flush all water lines on the system with water until the water appears to be free of particulates and discoloration, and the distribution system is completely filled.
3. Mix two quarts of unscented household bleach containing about 5% chlorine, in 10 gallons of water in a large bucket or pail in the area of the well casing.
4. Turn the electrical power off to the well pump. Carefully remove the well cap and well seal if necessary. Set aside.
5. Place hose connected to outdoor faucet inside the well casing. Turn electrical power back on to the well pump and turn the water on to run the pump.
6. Carefully pour the water and bleach mixture from the bucket or pail down the open well casing. At the same time, continue to run the water from the hose placed inside the well casing.
7. At each indoor and outdoor faucet, run the water until a chlorine odor is present, then shut off each faucet
8. Continue running water through the hose inside the well casing to recirculate the chlorine-treated water. Use the hose to also wash down the inside of the well casing.
9. After one hour of recirculating the water, shut off all faucets to stop the pump. Disconnect power supply to pump. Remove recirculator hose from the well.
10. Mix two more quarts of bleach in 10 gallons of water and pour mixture down the well casing. Disinfect the well cap and seal by rinsing with a chlorine solution. Replace well seal and cap. Allow the well to stand idle for at least eight hours and preferably 12 to 24 hours. Avoid using the water during this time.
11. If the pressure (20 psi minimum) and chlorine residual (0.2 ppm minimum) are acceptable, flush the distribution system again until the water appears to be free of particulates and discoloration. Then run the water using an outdoor faucet and garden hose in an area away grass and shrubbery until the odor of chlorine disappears. Run all indoor and outdoor faucets until the odor of chlorine disappears.

* If the system was unable to maintain adequate pressure or a free chlorine residual, correct the problem and repeat step 10 before continuing.
12. When the system has been flushed continue on with step 5 if using UV disinfection or step 4 if there is a disinfection waiver.

Footnote 1: At least one Total Coliform sample must be collected in the distribution system and it must be free of coliform bacteria prior to serving water to the public. Additional representative sampling and subsequent lab report result submission may be required in accordance with requirements specified in applicable Parts of the State Sanitary Code (6, 7, 14, 15, and 17.)