

NEENAH WATER UTILITY

BACTERIOLOGICAL TESTING & SAMPLING PROCEDURES FOR WATER MAIN AND LARGE SERVICE INSTALLATIONS

REFERENCE: ANSI/AWWA C651-14

Contractor shall provide all labor, chemicals, and equipment, including sample points, to sterilize, flush and hydrostatically test all new water main and large service laterals (and extensions and modifications to existing lines). This requirement applies to lines larger than 2" in diameter. Pressure testing shall be witnessed by Utility, during normal working hours, at rates billed to Contractor for such witnessing. All chlorination of water mains and appurtenances shall be performed per one of the methods specified in AWWA C651-14.

Maintaining clean pipes and appurtenances and avoiding contamination during construction will save time and expense during testing. Even extremely high chlorine concentrations will not disinfect a dirty main and flushing is no substitute for preventive measures during construction.

Where pipe, valves, and fittings installed at connections to existing mains cannot be sterilized and flushed the same as new installations, use following procedures:

1. After existing pipe, valve, and/or fitting has been exposed or plug removed, clean and wash existing point of connection with not less than two (2) applications of 25% solution of household grade (at least 5% by weight) sodium hypochlorite.
2. Clean and wash each new fitting, valve, and pipe section to remove foreign materials, which could cause contamination. After cleaning and just before lowering into trench, wash with two (2) applications of 25% solution of household grade (at least 5% by weight) sodium hypochlorite in clean water. Sterilize joint materials before use. In making installation, care should be used to avoid contaminating surfaces coming in contact with water when installation is restored to service.

Water Utility staff shall determine location(s) for sampling, and sample and perform two bacteriological tests at each location. Samples will be taken at each dead-end, branch, and each additional segment of main (not to exceed 1000'). If, in the opinion of the inspection staff, trench water, excessive dirt, or debris has entered the water main, samples in such areas shall be taken at intervals of approximately 200'. Typical sampling will be at risers installed on proposed water services and tapped plugs and/or caps.

Fire hydrants shall not be used for bacteria sampling purposes. If provisions require water services and/or assemblies to be installed at locations acceptable for sampling, the Contractor may install such corporations for sampling prior to their reuse after safe samples have been obtained. Sample points shall terminate with no larger than a ½" hose bib or valve with tailpiece no longer than 6" long and ½" diameter, and be capable of sterilization by torching and / or chlorinating the valve and discharge (a 1/4" boiler cock on a building riser is ideal). **Sample points must be extended out of the trench, above grade and safely accessible to Utility staff.** Utility personnel shall not be required to enter a trench in order to perform any testing. Contractor shall furnish and install all water sample points, incidental to the water main unit prices.

It shall be Contractor's responsibility to keep sample points, mains, and hydrants, from freezing.

Water supply valves shall remain closed at all times during the construction, except while filling, flushing, and sampling of the new main. Water shall not be used for any other purpose until after sampling is completed and line is deemed safe.

Proper dechlorination procedures shall be followed by the Contractor pursuant to applicable laws when flushing chlorinated water from mains, hydrants, or services.

In conjunction with the requirements of AWWA C651-14, Neenah Water Utility requires the following sampling procedure be used for bacteriological sampling of new water mains (and larger services) and modifications thereto:

After the final flushing, the water main shall sit undisturbed, for a minimum of 16 hours before the first sample is collected by the Water Utility. The water main shall continue to remain undisturbed and the sample tap running for a minimum of 15 minutes, until after the second sample collected by the Water Utility is obtained. When both the first and second bacteriological samples are tested to be safe, the segment can then be connected to the distribution system and put into service. At the discretion of the Water Utility, if there is indication of tampering or unauthorized water use, the test shall be deemed a failed test; the Contractor shall, at a minimum, re-flush the segment for retesting.

ALL SAMPLING IS PERFORMED BY WATER UTILITY PERSONNEL. Contractor must coordinate with the Distribution Manager to schedule sampling. **Samples will not be collected on weekends or on Water Utility holidays.** To confirm test results, call the Distribution Manager at 920--886-6191, or the Water Utility Operator on Duty at 920-886-6190, Option 4. The test results will generally be available 24 hours after the second sample has been collected.

If any of the original tests are unsafe, the entire section of water main being tested shall be re-flushed and then resampled. If any of the samples from the retest are still unsafe, the water main shall be re-chlorinated, flushed, and resampled until satisfactory results are obtained.

If potable water is to be used for any purpose other than filling, flushing, and testing the main, or from means other than hydrants installed by Contractor on this project, Contractor shall apply for a "**hydrant use permit**" by contacting the Distribution Manager at 920-886-6191. If available, the Water Utility will install a backflow preventer and meter on a hydrant of the Water Utility's choosing. The Contractor shall not operate any municipal water main valve or hydrant, but is only authorized to operate the hydrant nozzle valve that will be installed by the Water Utility after a hydrant use permit is acquired.