SECTION 330110.58 - DISINFECTION OF WATER UTILITY PIPING SYSTEMS

This Section includes disinfection of domestic water services associated with site services and utility supply systems.

See Drawing Coordination Checklist and Evaluations for information needed to coordinate this Specification Section with Drawings.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Disinfection of potable water distribution systems.

Testing and reporting of results.

* + - 1. REFERENCE STANDARDS

List reference standards included within text of this Section, with designations, numbers, and complete document titles.

* + - * 1. American Water Works Association:

AWWA B300 - Hypochlorites.

AWWA B302 - Ammonium Sulfate.

AWWA B303 - Sodium Chlorite.

AWWA C651 - Disinfecting Water Mains.

* + - 1. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
        2. Manufacturer’s installation instructions shall be provided along with product data.
        3. Submittals shall be provided in the order in which they are specified and tabbed (for combination submittals).
        4. Disinfection Procedure:

Submit description of procedure to the Director’s Representative for review/approval, including type of disinfectant and calculations indicating quantities of disinfectants required to produce specified chlorine concentration.

* + - * 1. Product Data: Submit manufacturer information for proposed chemicals and treatment doses.
        2. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
        3. Certify that final water complies with disinfectant quality standards of the New York State Department of Health.

Include separate paragraphs for additional certifications.

* + - * 1. Test and Evaluation Reports: Indicate testing results comparative to specified requirements.
        2. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
        3. Qualifications Statements:

Coordinate following subparagraph with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer and applicator.

* + - 1. CLOSEOUT SUBMITTALS
         1. Disinfection Report:

Type and form of disinfectant used.

Date and time of disinfectant injection start and completion.

Test locations.

Name of person collecting samples.

Initial and 24-hour disinfectant residuals in treated water in ppm for each outlet tested.

Date and time of flushing start and completion.

Disinfectant residual after flushing [**in ppm**] for each outlet tested.

* + - 1. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

* + - * 1. Perform Work according to AWWA C651. Do not use the Tablet Method therein.
        2. Comply with all requirements of the New York State Department of Health for disinfection of potable water lines, valves, hydrants, and appurtenances.

1. PRODUCTS
   * + 1. DISINFECTION CHEMICALS
          1. Chemicals:

Hypochlorite: Comply with AWWA B300.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Ammonium Sulfate: Comply with AWWA B302.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Sodium Chlorite: Comply with AWWA B303.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verify that piping system has been cleaned, inspected, and pressure tested prior to disinfection.
          2. Verify that access fittings have been installed under Section 331416 - Site Water Utility Distribution Piping.
          3. Perform scheduling and disinfecting activity with startup, water pressure testing, adjusting and balancing, and demonstration procedures, including coordination with related systems.
       2. INSTALLATION
          1. Provide required equipment to perform Work of this Section.
          2. [**Inject treatment disinfectant**] [**Introduce treatment**] into piping system.
          3. Maintain disinfectant in system for [**24**] <**\_\_\_\_\_\_\_\_**> hours.
          4. Flush, circulate, and clean until required disinfectant quality standard has been achieved using [**municipal**] <**\_\_\_\_\_\_\_\_**> domestic water.
          5. Replace permanent system devices that were removed for disinfection.
       3. FIELD QUALITY CONTROL
          1. Disinfection, Flushing, and Sampling:

Disinfect pipeline installation according to AWWA C651.

Use of liquid chlorine is not permitted.

Upon completion of retention period required for disinfection, flush pipeline until chlorine concentration in water leaving pipeline is no higher than that generally prevailing in existing system or is acceptable for domestic use.

Disposal:

Discharge super chlorinated water in a manner that will not adversely affect plants and animals. Comply with applicable State regulations for waste discharge.

[**If chlorinated discharge may cause damage to environment,**] apply neutralizing chemical to chlorinated water to neutralize chlorine residual remaining in water.

After final flushing and before pipeline is connected to existing system or placed in service, disinfection, and subsequent bacteriological tests must be completed, and approval must be obtained by the New York State Department of Health.

Bacteriological Tests: Coordinate with Director’s Representative for sampling criteria and procedures.

Test water main for bacteriological quality before putting pipe into service. A minimum of two successive sets of samples shall be taken at 24-hour intervals. Both sets of samples shall indicate bacteriological safe water and approval must be obtained by the Director’s Representative before putting the system in operation. Pay all expenses incurred for testing.

Tests shall be conducted by a laboratory approved by the New York State Department of Health.

Give all test results to Director’s Representative.

Should test results prove any part of the system bacteriologically unsafe, repeat disinfection procedures until satisfactory results are obtained.

Obtain written approval from the Director’s Representative/New York State Department of Health prior to bringing water system online.

END OF SECTION 330110.58