

Section 01733

PROCEDURE FOR NEW WATER LINE DISINFECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Disinfection of new water lines is by Public Utility Division personnel.

1.02 MEASUREMENT AND PAYMENT

- A. No separate payment will be made for this item. Include the cost of disinfection and pressure testing of new water lines in Unit Price bid for water main construction.

1.03 PROCEDURE

- A. Perform activities listed in Exhibit A attached to this section.

1.04 SUBMITTALS

- A. "Request for Disinfection and Placement in Service:" Submit as noted in 01330 - Submittal Procedures.

1.05 CANCELLATION

- A. The Contractor, Construction, and Public Utilities Division may cancel the agreed scheduled disinfection appointment at no extra cost to either party. The Contractor shall notify the City Inspector 24 hours in advance. The City Inspector shall notify COS immediately of the cancellation. Cancellation may be caused by bad weather, unforeseen delays by either party, preparation work taking longer than anticipated, etc.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

EXHIBIT A

REQUEST FOR NEW WATER LINE DISINFECTION

Water Production Telephone: (713) 842-4000

ONLY FAX REQUESTS FOR NEW WATER LINE DISINFECTION WILL BE ACCEPTED.
FAX NO. (713) 842-6904.

The following procedure will be used by the Water Production Branch, Systems Development Section when receiving requests from City Inspector for New Water Line Disinfection.

- a. Forms must be completed correctly and faxed a minimum of 3 days prior to the actual date work is to be performed (excluding weekends, holidays, inclement weather days, and the day fax is received).
- b. **All requests for disinfection will be addressed to Ms. Kathlie J. Bulloch, P.E.**

PHASE I - CHLORINATION OF NEW WATER LINES:

- Step 1.** The City Inspector will complete the 4 forms: Request for Disinfection and Placement in Service of Water Mains, Disinfection of Water Mains Exhibit, and Chlorination of Water Mains Checklist.
- Step 2.** The City Inspector will mark the water lines that have been disinfected on the construction drawings for his records.
- Step 3.** The City Inspector shall check for proper installation of blow-off and chlorination injection risers.
- Step 4.** The City Inspector shall notify **Ms. Kathlie J. Bulloch** at **(713) 842-4001, Pager No. (281) 621-3556, Mobile Telephone No. (713) 253-3088**, if the chlorination crew has not arrived at the site within 30 minutes of the scheduled appointment. **If the Contractor is not ready when the chlorination crew arrives to disinfect the new water main, Contractor shall reimburse the City for mobilization in the amount of \$250.00 for each request.**
- Step 5.** Contractor and Construction Division shall assist the chlorination crews to flush the dirt and debris out of the pipes **before** applying the chlorine.
- Step 6.** The chlorination crews shall inject chlorine solution into the pipe, confirming no less than a 25 ppm.
- Step 7.** The chlorine shall be left in the pipe for at least 24 hours.

PHASE II - FINAL FLUSHING/BACTERIOLOGICAL SAMPLING:

- Step 8.** The chlorination crews shall flush chlorine out thoroughly until clear water is obtained from existing system. Crews shall collect samples from prescribed sample points, preferably every 1000 feet length of pipes, all dead ends, and blow-off, if any.
- Step 9.** The chlorination crews shall obtain sample results from the laboratory.
- Step 10.** If samples are good (**negative**), Water Production Branch shall send back the request form to the City Inspector with second part completed (**fax to Construction Division Inspector/Senior Inspector**). The original form shall be sent by interoffice mail.
- Step 11.** Water Production Branch shall advise the City Inspector when it is permissible to perform hydrostatic test.
- Step 12.** The Water Production Branch will receive the pressure test results performed by the Contractor from the City Inspector. **If the water line was opened, the City will re-chlorinate the water line at the Contractor's cost and obtain samples until found good.** The Water Production Branch will obtain the third part of the request form from the City Inspector.
- Step 13.** **If the samples are found to be POSITIVE more than twice**, re-chlorinate the water line.
- Step 14.** Send correspondence to Construction Division with any necessary charges.
- Step 15.** After the residual results are acceptable, the new water line is now ready to be **PLACED IN SERVICE**. Water Production Branch shall complete the fourth part of the Request for Disinfection and Placement in Service of Water Mains form and fax to the City Inspector. The original form will be sent by interoffice mail.

WATER MAINS PIPE-LAYING PRE/POST INSPECTION CHECKLIST (for water mains 30 inches in diameter and larger):

GFS/File No: _____ Exhibit: __ Location: _____

Inspector: _____ Contractor: _____
(Print name)

All questions must be answered "Yes" prior to requesting disinfection of water mains.

- | | <u>Yes</u> | <u>No</u> |
|---|--------------------------|--------------------------|
| 1. Installed and maintained trench safety and confined space safety systems according to provisions of OSHA 29CFR . | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Confirmed that separation of gravity sanitary sewers, manholes, and force mains complies with minimum clearance specified. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Pipe trenches were free of water which might impair pipe-laying and cause contamination. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Covered or backfilled laid pipe and securely placed stoppers or bulkheads in all openings and in end of line when pipe-laying operations are interrupted and during nonworking hours. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Placed pipe along project site before installation where storm water or other water will not enter or pass through pipe. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Thoroughly cleaned and dried interior of pipe and fittings of foreign matter before installation. Kept interior clean until Work had been accepted. Kept joint contact surfaces clean until joining was completed. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Left no debris, tools, clothing, or other materials in pipe. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Inspected each pipe and fitting for defects before installation. Rejected defective or damaged pipe and fittings and removed from site. | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Cleaned pipe interior, removed all debris, and inspected thoroughly after all pipe-laying operations. | <input type="checkbox"/> | <input type="checkbox"/> |

Inspector: _____
(Signature)

Date: _____ / _____ / _____

DISINFECTION OF WATER MAINS CHECKLIST:

GFS/File No: _____ Exhibit: __ Location: _____

Inspector: _____ Contractor: _____
(Print name)

All questions must be answered "Yes" prior to requesting disinfection of water mains.

- | | <u>Yes</u> | <u>No</u> |
|--|--------------------------|--------------------------|
| 1. Construction is completed and the water mains have been laid as shown on the drawings. Water mains shown in Exhibit ___ are free of dirt and debris. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. A chlorine riser has been installed at the beginning of the new main. It is located in a manner that it can be reached conveniently from a chlorination trailer. The corporation cock is turned on. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. A water supply riser is installed on a <i>live</i> line within 20 feet of the chlorine riser. The corporation cock is turned on. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Blow-offs with minimum diameter of 2 inches or greater are installed at each end, and at every 1,000 feet of the new mains. The blow-offs are large enough for the size of pipe used and length of main laid. They are safely accessible. Handwheel valve is installed 3 feet above grade on each one of them. The corporation cocks are turned on. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Adequate drainage is provided for blow-offs and fire hydrants so that private property or other construction sites will not be flooded. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. An operator can reach all valves with a valve key. Stacks, if used, are straight and clean. There is no dirt or debris covering the operating nuts. There are no large holes full of water or anything else to prevent an operator from reaching the valve. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Wet connection valve is installed and existing water supply is adequate for proper disinfection. | <input type="checkbox"/> | <input type="checkbox"/> |

Inspector: _____
(Signature)

Date: _____ / _____ / _____

***HYDROSTATIC PRESSURE TEST FOR:**

- Small-diameter (less than or equal to 20 inches), minimum test pressure 125 psi
- Large-diameter (greater than 20 inches), minimum test pressure 150 psi

GFS/File No: _____ Exhibit: _____ Location: _____

Inspector: _____ Contractor: _____
 (Print name)

SECTION TO BE TESTED				
ON (street name)	FROM (street name)	TO (street name)	TOTAL FOOTAGE (feet)	PIPE DIAMETER (inches)

TEST LOG				
HRS	TIME	PSI READ	METER	LEAKAGE**
Start				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

TEST LOG				
HRS	TIME	PSI READ	METER	LEAKAGE**
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
Total Leakage/24 Hrs. (gallons)				

- Test results:**
- Passed
 - Passed, after repairs.
 - Failed, needs repairs. Retest and request re-disinfection.

Inspector: _____ Date: ___ / ___ / ___
 (Signature)

* Disinfect water mains prior to hydrostatic pressure testing.
 Small-diameter pipelines shall be tested in lengths between valves, or plugs, of not more than 1500 feet,
 Large-diameter pipelines shall be tested in lengths between valves, or plugs, of not more than 4400 feet,
 Test pressure is to be maintained for eight (8) hours.

** Maximum allowable leakage for water mains with rubber gasketed joints:
 10.63 gallons per inch nominal diameter per mile of pipe per 24 hours while testing at 125 psi, or
 11.63 gallons per inch nominal diameter per mile of pipe per 24 hours while testing at 150 psi.

REQUEST FOR DISINFECTION AND PLACEMENT IN SERVICE OF WATER MAINS:

- Water, Wastewater, Storm & Sewer, Street & Bridge, Maintenance, 'C' Permits, Metro, TxDOT, L.A.N. Contract, Harris County, Other

GFS/File No: CIP No: Contractor: Contractor Phone:

Table with 2 columns: Request type (Chlorination, Pressure Test) and Date.

PART I: REQUEST FOR DISINFECTION OF WATER MAINS

Date: / /

To: Engineer / Water Production Branch
Phone: (713) 842-4000 Fax: (713) 842-6904

From: Inspector (Print name) (Quadrant)
Fax: Pager:
Phone: -

Please schedule the water mains listed in Exhibit for Disinfection / Re-disinfection.

Inspector: (Signature)

- Attachments: Disinfection of water mains; Checklist Exhibit
Water mains pipe laying pre and post inspection checklist

PART II: DISINFECTION COMPLETION REPORT AND REQUEST FOR PRESSURE TEST OF WATER MAINS

Date: / /

To: Inspector

From: Engineer / Water Production Branch

The water mains listed in above-mentioned Exhibit have been disinfected on / / , and samples collected passed laboratory test on / / . Water mains are now ready to be pressure tested. Disinfection Certified Operator's initials: _____

Signature: _____

Attachment: Disinfection of water mains, Exhibit _____

PART III: HYDROSTATIC PRESSURE TEST COMPLETION OF WATER MAINS

Date: / /

To: Engineer / Water Production Branch

From: Inspector

The water mains listed in above mentioned Exhibit passed hydrostatic pressure test on / / .

Inspector: (Signature)

PART IV: RELEASE AND IN SERVICE PLACEMENT NOTIFICATION OF WATER MAINS

Date: / /

To: Inspector

From: Engineer / Water Production Branch

The water mains shown in Exhibit are released and now ready to be placed in service, effective _____.

Signature: _____

Attachment: Disinfection of water mains, Exhibit _____

- c: Peter Dobroslski, P.E. Tim Lincoln, P.E.
Philip Meaders, P.E. Project File

