



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

DISTRIBUTION SAMPLING GUIDELINES

ASBESTOS

Sampling Points:

Systems shall collect the asbestos sample(s) from the distribution system at a location that is representative of each entry point. When applicable, the sample(s) shall be collected from a tap served by an asbestos cement pipe and under conditions where asbestos contamination is most likely to occur.

TOTAL COLIFORM & PHYSICAL PARAMETERS

Sampling Points:

The distribution sampling points should be representative of the entire distribution system. The following criteria should be considered when evaluating and selecting sampling sites.

- 1) Sites should be distributed uniformly throughout the distribution system.
- 2) Representative locations for each storage facility and pressure zone should be included.
- 3) Sample locations in loops should be provided.
- 4) There should be locations that are representative of the different sources within the system (if applicable). The number of samples should be proportional to percentage of population served by each source.
- 5) Sample locations at the extremities of the distribution system are required.

Samples Required By Population Size:

<i>Population Served</i>	<i>Number Of Minimum Routine Samples Per Month</i>	<i>Population Served</i>	<i>Number Of Minimum Routine Samples Per Month</i>
25 to 1,000	1	25,001 to 33,000	30
1,001 to 2,500	2	33,001 to 41,000	40
2,501 to 3,300	3	41,001 to 50,000	50
3,301 to 4,100	4	50,001 to 59,000	60
4,101 to 4,900	5	59,001 to 70,000	70
4,901 to 5,800	6	70,001 to 83,000	80
5,801 to 6,700	7	83,001 to 96,000	90
6,701 to 7,600	8	96,001 to 130,000	100
7,601 to 8,500	9	130,001 to 220,000	120
8,501 to 12,900	10	220,001 to 320,000	150
12,901 to 17,200	15	320,001 to 450,000	180
17,201 to 21,500	20	450,001 to 600,000	210
21,501 to 25,000	25	600,001 to 780,000	240
		780,001 to 970,000	270

DISINFECTION BYPRODUCTS (TTHMs & HAA5)

Sampling Points & Minimum Number of Samples:

<i>Type of System</i>	<i>Minimum Monitoring Frequency ⁽¹⁾</i>	<i>Sample Location in the Distribution System ⁽²⁾</i>
A system using surface water or GWUDI in whole or in part and serving 10,000 or more persons	Four (4) samples per quarter per treatment plant	At least 25% of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system.
A system using surface water or GWUDI in whole or in part and serving fewer than 10,000 persons	One (1) sample per quarter per treatment plant	Location representing maximum residence time
A system using only groundwater not under the direct influence of surface water and serving 10,000 or more persons	One (1) sample per quarter per treatment plant	Location representing maximum residence time
A system using only groundwater not under the direct influence of surface water and serving fewer than 10,000 persons	One (1) sample per year per treatment plant during the third calendar quarter	Location representing maximum residence time ⁽³⁾⁽⁴⁾

NOTES:

⁽¹⁾ Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with written approval from the department.

⁽²⁾ If a system elects to sample more frequently than the minimum required, at least twenty-five (25) percent of all samples collected each quarter, including those taken in excess of the required frequency, shall be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples shall be taken at locations representative of at least average residence time in the distribution system.

⁽³⁾ If the sample, or average of annual samples if more than one sample is taken, exceeds the MCL, the system shall increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system. Systems on increased monitoring may return to routine monitoring if, after at least one year of monitoring, their TTHM annual average is 0.060 mg/l and HAA5 annual average is <0.045 mg/l and the system is granted approval by the department in writing.

⁽⁴⁾ Maximum residence time, for small public water systems, is a location as close to the end of the distribution system as possible.

DISINFECTION RESIDUALS

Sampling Points:

Routine monitoring for chlorine and chloramines. CWS and NTNC that uses chlorine or chloramines in any part of the treatment process shall measure the residual disinfectant level in the distribution system, at the same point in the distribution system and at the same time as total coliforms are sampled. Surface water or GWUDI systems may use the results of residual disinfectant concentration sampling conducted under 40 CFR 141.74(c)(3)(i) in lieu of taking separate samples.

LEAD & COPPER

Sampling Points:

- 1) The sampling sites selected for a community water system's sampling pool (tier 1 sampling sites) shall consist of single family structures that: contain copper pipes with lead solder installed after 1982 or contain lead pipes; or are served by a lead service line. When multiple-family residences comprise at least twenty percent (20%) of the structures served by a water system, the system may include this type of structures in its sampling pool.
- 2) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with tier 2 sampling sites, consisting of buildings, including multiple-family residences that: contain copper pipes with lead solder installed after 1982 or contain lead pipes; or are served by a lead service line.
- 3) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with tier 3 sampling sites, consisting of single family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For the purpose of this sub-clause, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.
- 4) The sampling sites selected for a non-transient non-community water system (tier 1 sampling sites) shall consist of buildings that: contain copper pipes with lead solder installed after 1982 or contain lead pipes; or are served by a lead service line.
- 5) A non-transient non-community water system with insufficient tier 1 sites to meet the targeting criteria in subparagraph (A)(vi) of this subdivision shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the non-transient non-community water system shall use representative sites throughout the distribution system. For the purpose of this sub-clause, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

- 6) Any water system having a distribution system containing lead service lines shall draw fifty percent (50%) of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and fifty percent (50%) of those samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall collect first draw samples from all of the sites identified as being served by such lines.

Number of Samples Required:

<i>System Size (Number of People Served)</i>	<i>Number of Sites (Standard Monitoring)</i>	<i>Number of Sites (Reduced Monitoring)</i>
Greater than 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
Less than or equal to 100	5	5

In the case of a consecutive public water system, the number of sampling sites shall be based on the total population of the consecutive system and the supplier's system. The number of sites for each system shall then be apportioned according to the percentage of the total population served by each system.

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