

Guidance on Bacteriological Site Selection

What makes a representative sampling site?

Coliform bacteria like warm environments, low to no disinfection, and stagnant water. Sampling shall be representative of the water throughout the distribution system, representing the varying conditions that occur.

The goal of coliform sampling is to identify any coliform contamination so it can be dealt with promptly. To ensure that bacteria cannot persist undetected, it is important to identify trouble spots and areas of concern that may adversely affect the bacteriological quality of the water in the distribution system.

Sites to consider sampling:

- Areas representing the water supply to critical or sensitive facilities: schools, daycares, hospitals, etc.
- Residential areas
- Commercial areas
- Areas reflecting varying population densities
- Locations of dead-end pipes, water mains, branch lines, loops, and other piping system configurations
- Areas near cross connection hazards
- Areas representing low or no chlorine residuals
- Areas with long hydraulic retention times
- Areas with low-pressure or varying-pressure zones
- Areas of low-velocity water movement
- Sites of deteriorating water mains
- Areas comprised of different water main materials
- Near a storage tank
- Areas primarily sourced by finished water storage facilities
- Areas reflective of different sources
- Areas where there is an interface between multiple water sources
- Areas representing supplemental (booster) disinfection stations

You may wish to include comments on your plan explaining the reason(s) for selecting each site.

Which types of faucets should you avoid?

Keep in mind that a customer's faucet may not accurately reflect the distribution system, but instead be representative of the customer's personal plumbing; thus, each faucet should be carefully examined to ensure suitability.

Faucets to avoid:

- Dirty taps
- Faucets that supply areas where bacterial contamination is likely, such as janitorial or commercial sinks
- Faucets that are unable to deliver a smooth stream of water
- Threaded taps
- Aerated taps (or remove aerator before sampling)
- Unprotected outdoor faucets
- Seldom used faucets
- Swing or swivel-type faucets that have a single valve for hot and cold water
- Hot water faucets
- Leaky or corroded taps
- Faucets that are surrounded by excessive foliage
- Close to or below ground level taps
- Upward pointing taps
- Hoses or other faucet attachments
- Frost-proof yard hydrants

These faucets may not always be avoidable. If you must collect a sample from one of these faucets, use good sampling and disinfection techniques.

What should be considered when establishing a sample collection schedule?

- A bacteriological sample is an individual sample collected at one specific site at one point in time. Sample analysis provides a snapshot of the water quality.
- Samples must be collected at regular time intervals throughout the month: daily, weekly, biweekly, etc. Supplies using only ground water and collecting five or fewer samples in a month may collect all samples on a single day if they are taken from different sites.
- Sampling early in the week and early in the month allows ample time to collect replacement or repeat samples, should issues arise.
- Consider establishing a larger sampling pool than required and rotate sample collection between all sites on a set schedule: monthly, quarterly, etc.

Additional Guidance

- Establish backup sampling site(s) to be used if the routine site is unavailable.
- Collect more samples than required if concerned about certain areas of the system.

**Total Coliform Monitoring Frequency
(R 325.10704g)**

Population served	Minimum number of samples per month
1,000 or fewer	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480