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. Sampling locations should reflect areas where customers are drinking the water and you should strive for mixture of different types of sampling locations.

The goal of coliform sampling is to identify coliform contamination so it can be dealt with promptly. To ensure that bacteria cannot persist undetected, it is important to identify and routinely monitor 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 where the water main configuration varies (looped, branching/non-looped (full of dead-ends))
- 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
- Areas with smaller water mains (6-inch or 8-inch)

You may wish to include comments on your sampling plan explaining the rationale for selecting each site.

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.

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 connected to softeners, pumps, cisterns, etc. (or bypass before sampling)
- 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
- Large transmission lines
- Sample taps near the edges of the distribution system (dead-ends)

These faucets my 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.