

PathCon[®] Laboratories

Legionella in Building Water Systems Protocol for Sample Collection

This protocol is suggested to assist the on-site investigator in developing an overall sampling strategy. PathCon Laboratories does not assume responsibility for selection of the appropriate sampling protocol or interpretation of the findings. These decisions must be made by the on-site investigator. Samples should be collected by a trained environmental health professional with experience in sampling for microorganisms; therefore, this protocol is not a complete sampling guide.

The On-Site Inspection

Potential sampling sites in buildings include any water sources that are possibly aerosolized. Some water sources implicated in legionellosis are cooling towers, evaporative condensers, potable water heaters and holding tanks, pipes containing stagnant warm water, shower heads, decorative fountains, faucet aerators, nebulizers, mister reservoirs, and hot tubs/spas.

Sample Collection

COOLING TOWERS OR EVAPORATIVE CONDENSERS. Legionellosis is primarily spread by airborne transmission. Consequently, individuals who collect samples should avoid breathing aerosols contaminated with *Legionella* bacteria. This can be accomplished by:

- * Turning cooling tower fan off during sample collection.
- * If the above is not possible, individuals collecting samples should wear a fit-tested, half-face or full-face mask that is equipped with a bacteriologic filter that has a HEPA efficiency rating.

Collect samples from each reservoir in 125-milliliter (ml) sterile screw-capped polypropylene bottles. Collect sample by tilting the bottle and then moving it in a single-direction subsurface motion, making sure that the water entering the bottle has not been contaminated by the water moving over the hand. When sampling, use of sterile, disposable gloves may be considered. Avoid collecting excess sediment. Record water temperature. If chlorine is used as a biocide, request bottles containing sodium thiosulfate.

POTABLE (DRINKING) WATER. Samples should be collected in 125-ml sterile screw-capped polypropylene bottles. Potable hot water outlets may be analyzed by taking two samples -- a pre-flush sample and a post-flush sample. These two samples can help determine whether amplification of *Legionella* is due to terminal line amplification or upstream amplification in or near the hot water source. For sampling purposes, the plumbing system may be divided into those portions primarily served by individual hot water heaters (mini-systems). Each mini-system may be considered a separate system for sampling purposes.

* For potable hot water lines, turn on the hot water tap and collect the first 125 ml from sinks, showers, hoses, etc. (pre-flush). Then allow the hot water to run at full force for 1 minute (or until the water is hot) and collect a second 125-ml sample (post-flush). Mark the first sample "pre-flush" and the second sample "post-flush". Record temperature of post-flush hot water. Each of these samples should be analyzed separately.

* For potable water in cold water lines (i.e., from water fountains) or cold water from sink faucets, showers, and water storage tanks, collect 125 ml of water that comes from the spigot or outlet. Record water temperature.

OTHER NON-POTABLE WATER. For water from other sources such as decorative fountains, hot tubs/spas, humidifiers, reservoirs, cisterns, etc., collect 125 ml. When possible, include water near the side or bottom of the vessel or reservoir. Avoid collecting excess sediment. Record water temperature.

Sample Identification Record

Complete the Sample Identification Record on the back of this page for each sample. Number the bottles with an identification number. Describe the sample associated with each sample number on the sample identification sheet. If biocide was used, indicate in the space provided.

Shipment of Samples to the Laboratory

Place bottles in insulated boxes to protect the samples from extremes in temperature during transport. Samples should be packed in such a manner that leakage of water does not occur during shipment. The following is recommended:

* Screw the cap tightly on each bottle. Place each bottle in a plastic bag and seal the bag.

* Place sealed plastic bags containing the samples in a cardboard box containing insulated panels (or a cooler) and add sufficient packing (i.e., bubble wrap or paper) to cushion and hold the bottles firmly in place during shipment.

* **Send the samples at ambient temperature, by an overnight carrier, preferably Federal Express, on the same day the samples are collected. The samples should be in transit only overnight and should be delivered in the morning (via Priority Service).**

Send samples to:

**PathCon Laboratories
270 Scientific Drive, Suite 3
Norcross GA 30092
Phone # (770) 446-0540**

Sample Identification Record

For client signature:

Released by: _____

____ CHECK HERE if NY State DOH ELAP analysis is requested.

Date: _____ Time: _____

For PathCon signature:

Received by: _____

Date: _____ Time: _____

Sample # _____ Description: _____ () Potable () Cooling Tower () Other non-potable Biocide: _____

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Sample # _____ Description: _____ () Potable () Cooling Tower () Other non-potable Biocide: _____

PathCon Number: _____ Date: _____ Purchase Order or Reference Number: _____

Investigator: _____ Telephone: _____

Fax: _____

Would you like a copy of the report by e-mail? Yes / No E-mail address: _____

Company: _____

Address for Report: _____

Address for Invoice: _____