



Community Public Water System Criteria for Developing a Sample Site Plan under the Lead and Copper Rule of the Safe Drinking Water Act

North Dakota Department of Environmental Quality, Division of Municipal Facilities

The Lead and Copper Rule (LCR) of the Safe Drinking Water Act requires all community and non-transient non community public water systems (PWS) to routinely monitor for lead and copper. The following criteria have been established to assist PWS in the development of lead and copper sample site plans.

Purpose

Since lead and copper enter the public drinking water through contact with the pipes in homes and not from the water source, it is important to select sites that meet certain criteria. The development of a sample siting plan allows the water system operator to identify sample sites that represent the locations in the system that are most likely to have the highest lead or copper results.

Identifying Sample Site Locations

Before starting initial monitoring, the PWS must complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites. Information that can be used to identify a sufficient number of sampling sites includes previous materials surveys, plumbing/building permits, inspection records, and existing water quality information indicating locations that may be particularly susceptible to high lead or copper concentrations.

The sampling sites must be Tier 1, Tier 2 or Tier 3 sites defined as follows:

Tier 1 – Single family structures that have:

- Copper pipes with lead solder installed after 1982 but before 1989, or
- Lead pipes, and/or
- Are served by a lead service line.

Tier 2 – Buildings, including multiple-family residences that have:

- Copper pipes with lead solder installed after 1982 but before 1989, or
- Lead pipes, and /or
- Are served by a lead service line.

Tier 3 – Single family structures that have copper pipes with lead solder installed before 1983.

Sample sites may not include faucets with point-of-use or point-of-entry treatment devices. If at least 20 percent of the structures served by the water system are multiple family residences, they may be included in the sampling pool as Tier 1 sampling sites. If insufficient Tier 1 sites are found, Tier 2 sites can be selected, and only if insufficient Tier 2 sites are available, should Tier 3 sites be used. If an insufficient number of tiered sampling sites are available, representative sites throughout the distribution system can be used. A representative site is one in which the plumbing materials used at that site would be commonly found at other sites in the system.

Any water system whose distribution system contains lead service lines must collect 50 percent of the samples during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of the samples from sites served by lead service lines. If lead service lines are present and an insufficient number of sites served by lead service lines can be located, then such systems must collect samples from all the sites identified as served by lead service lines.



Number of Samples and Sites

During initial standard monitoring water systems must collect at least one sample during each six-month monitoring period from each sampling site. The number of sampling sites is based on the population served (see Table 1).

Table 1. Number of Sampling Sites

Population	Standard Monitoring	Reduced Monitoring
10,001-100,000	60	30
3,301-10,000	40	20
501-3,300	20	10
101-500	10	5
Less than 100	5	5

Water systems must identify and maintain the number of sample sites required for standard monitoring in the sample site plan regardless of any change to reduced monitoring. It is recommended that additional alternate sites also be located, whereby, in the event an initial site cannot be sampled, the alternate site may be utilized.

Lead and Copper Sample Site Coding

Each sampling site for lead and copper must be assigned a code. The code numbering sequence must start with LC01, then progress to LC02, LC03, and so on. For example, a city required to have 15 tap sampling sites for lead and copper must number the sites from LC01 to LC15.

Content of an LCR Sample Siting Plan

Sample siting plans must consist of:

- A map of the water distribution system showing the location of each sample site
- A list of sampling sites including
 1. the sample site code
 2. the address
 3. the selected tap (kitchen or bathroom)
 4. the tier materials information

Changes to an LCR Sample Site Plan

If it becomes necessary to make changes to a lead and copper sample site plan, the request must be made in writing. The written request must identify the site that is being replaced, the reason for the change and information about the proposed replacement site, including the type and age of plumbing. All efforts must be made to replace an LCR sample site with a new site of the same tier level.

Other LCR Guidance:

Initial (Standard) Monitoring

The first six-month monitoring period begins when a PWS begins operating. Systems are required to conduct two consecutive six-month monitoring periods. If the action levels are not exceeded, then the PWS may be able to go on reduced monitoring.

Reduced Monitoring

A system that meets the lead and copper action levels for two consecutive six-month monitoring periods may reduce the number of samples collected (see Table 1), and the frequency of sampling to once per year. A PWS that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring from annually to once every three years.

Reduced monitoring must be done during the months of June, July, August, or September. Systems conducting reduced monitoring must resume standard monitoring when a lead or copper action level is exceeded.



Completed plan, proposed changes or any questions regarding the LCR should be directed to:

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