

Monitoring of Corrosion Control Parameters

By Thomas S. DeLoach

If your water system exceeded a lead or copper action level in the past, you are required to monitor for corrosion control parameters. When a system exceeds a lead or a copper action level, the system is notified of the requirement to submit a corrosion control plan to the Department. This corrosion control plan should not only indicate the corrosion control method to be instituted, but should also outline the method for collecting the required corrosion control parameters.

Systems are given the discretion of choosing one of two methods for collecting corrosion control parameters which are listed below:

1. Systems using the Baylis Curve may demonstrate proper corrosion control by monitoring the treated water from each water source on a daily basis for pH and total alkalinity. Should the system utilize the Langelier Index or Ryznar Index for evaluating the corrosive level of the water, the treated water from each source must be monitored for pH and alkalinity daily and calcium, water temperature, and total dissolved solids on a weekly basis. Should an orthophosphate or silicate inhibitor be used, the system shall monitor pH on a daily basis and the phosphate or silicate level on a weekly basis for each treatment facility.
2. Systems could also choose to collect two samples from designated sites in the distribution system and two samples of finished water from each treatment facility. The number of distribution sites is based on the population served by the system (see chart below). These samples should be collected on two different days during each six-month monitoring period. The samples must be analyzed for pH, alkalinity, calcium, total dissolved solids and water temperature. Orthophosphate or silica must also be analyzed if a system uses a corrosion inhibitor.

System Size (population)	Number of sites
greater than 100,000	25
10,001-100,000	10
3301-10,000	3
501-3300	2
25-500	1

After a system has begun corrosion control parameter monitoring, the system must ensure that the parameters are within specific ranges depending on the method being utilized to determine optimal corrosion control. The specific ranges and the methods are listed below:

Optimal Corrosion Control
Indicator

Indicator Ranges

Baylis Curve	Baylis curve indicates no incrusting or corrosion will occur.
Langelier Index	-1.0 to +2.0
Ryznar Index	7 to 11
Calcium Carbonate Precipitation Potential	4 to 10 mg/l

If a water system is unable to meet the indicator ranges or incurs an additional lead or copper action level exceedance, the system will be required to either submit a new corrosion control plan or conduct a full corrosion control study. We encourage all systems that have exceeded a lead or copper action level in the past to review their corrosion control parameter monitoring to ensure that the monitoring is being performed as required and submitted to the Department.

If you have any questions concerning the corrosion control parameter monitoring requirements, the requirements are outlined in Chapter 11 of the Water Supply Program regulations or you can contact me at (334) 271-7791.