



Potable Water Testing Protocol for Lead Concentration
Phase III Testing

This Elementary and High School Sampling Protocol is based on EPA Revised Technical Guidance “3Ts for Reducing Lead” dated October 2006 and recommendations from the Chicago Water Management. The purpose of this Protocol is to collect, analyze and measure the concentration of lead in potable water in Chicago Public Schools Elementary and High School Buildings. Young children, those 6 years and younger, are at particular risk for lead exposure as their nervous systems are still undergoing development and thus are more susceptible to the effects of toxic agents such as lead.

1.1 Selection of Phase III schools for testing was based on the EPA guidance. The following criteria were applied.

1. The remaining schools and campuses that are owned or leased by CPS but not yet tested.

2.1 Selection of sampling locations within schools was determined by the following criteria:

1. All sources of drinking and cooking water (outlet) will be tested.
2. Samples are to be collected from each drinking and cooking water outlet. Individual fixtures will be tested independently of surrounding fixture. There is no group sampling of two drinking fountains located near or adjacent to one another.
3. Drinking Water outlets not working will be noted and assigned a location identifier.
4. Faculty Lounge Sink/ water supply.
5. Nurse’s Station Sink/ water supply.
6. Pre-K & K classrooms with sinks will be tested.
7. Health clinic drinking water sources.

- 3.1 Prior to sampling, the person responsible for collection of the sample shall.
1. Complete the Potable Water Sampling survey (Attachment 1)
 2. Visit the school and interview the school Engineer to finalize or confirm the information on the survey, and to generate a floor plan/sketch drawing showing the water outlets in the school. (Sketches are available from the School's AHERA reports and the CIP Construction Document Database)
 3. If the school has not been in normal operation for more than three days, the Sample Collector will need to ensure that all potable water outlets are flushed completely the day prior to testing. The sampler will simulate normal water use by ensuring that all potable water outlets are thoroughly flushed the on the afternoon prior to the day of sampling. The sample should be collected no sooner than 8 hours after the system was last used.
 4. If the school has been operating normally for at least three days prior to testing, the Sampler will not need to ensure that all potable water outlets are flushed completely.
 5. On the day prior to testing, the Sampler will instruct/confirm with the engineer that no water outlets in or around the school will be utilized until the sampling is completed. Bilingual Signs indicating that the fixture is out of service for testing purposes will be placed at all fixtures once the fixtures are closed for testing.
- 4.1 During the inspection/sampling at each school, the Sampler shall:
1. Return to the school for sampling at a minimum of 8 hours after the system was last used.
 2. Prior to the commencement of sampling the Sampler should confirm/verify with the engineer that no water outlet in and around the school has been operated/utilized within the time period between the flushing and sampling.
 3. Prior to commencing of sampling the Sampler should identify all outlets that are most likely used for drinking and food preparation purposes. The sample must be collected from a COLD water tap.
 4. Prior to commencing sampling the Sampler should identify and mark all water outlets to be sampled on the generated floor plan/sketch drawing showing the potable only water outlets in the school.
 5. Sample identified outlets in accordance with the USEPA Protocol.
 6. Remove "Out of Service/Testing" signs once testing at the location is completed.
- 5.1 Conducting the Sampling

1. Collection Procedures

- a. All water samples collected should be 250 milliliters (mL0 in volume). A smaller sample is more effective at identifying the sources of lead at an outlet because a smaller sample represents a smaller section of plumbing. A smaller sample is also more representative of water per serving consumed by a child.
- b. Collect all water samples from COLD water taps BEFORE the facility opens and BEFORE any water is used. Ideally, the water should sit in the pipes unused for at least 8 hours. However, water may be older at some locations that are infrequently used. If this is typical of normal use patterns, then these outlets should still be sampled.
- c. Make sure that no water is withdrawn from the taps or fountains from which the samples are to be collected prior to their sampling.
- d. Do not collect samples in the morning after vacations, weekends, or holidays if possible. If samples must be taken during these periods, ensure that the system has been adequately flushed at least 8 hours prior to the sampling.
- e. A total of (5) 250ml will be taken from each fixture sequentially and labeled accordingly.
 1. Alternate Method being considered:
 - Pull 5 Sequential 250ml (mL0 in volume). Samples from fixtures at the top of risers, the end of a branch/horizontal line, or kitchen.
 - For all other drinking locations pull two 250ml (mL0 in volume). Samples: First draw, 30 seconds, Second Draw 250 ml (mL0 in volume).

2. Discolored water noted during sampling

- a) Tester will notify CPS in writing - the same day - with the school name, location of fixture and brief description of the color/discolor issue.
- b) Samples will be taken and tested as normal.
- c) CPS Facilities will decommission the fixture(s) on the same day.
- d) CPS will continue to work on resolution of the issue in advance of the test results.
- e) Tester will continue with the sampling and testing per standard protocol.

6.1 Labeling

1. Assign a unique sample identification number to each sample collected. The sampling number system should be as follows.

- a) Facility ID Number (5 digits),
- b) Floor Number (B, 1, 2, 3)
- c) Hallway, Kitchen, Cafeteria or Room Number
- d) Fountain (F), Water Cooler (WC), Sink (S), Kitchen Sink (KS)
- e) Unique Sample identifier.

2. On the record keeping form include:

- a) Sample ID number
- b) Type of sample taken (ie first draw, follow-up, etc)
- c) Date and time of Collection
- d) Name of the Sample Collector
- e) Location of the sample site (Room 105, South Hall 3rd Floor)
- f) Name of the manufacturer that produced the outlet and the outlet model number, if known.
- g) Note if fixture is working as designed.

3. Handling of Sample Containers:

- a) Follow instructions provided by the laboratory for handling sample containers.
- b) Ensure that containers are kept sealed between the time of their preparation by the laboratory and the collection of the sample
- c) Carefully follow the laboratory's instruction for preservation of the samples.
- d) Keep samples in containers that are at the proper temperature (ice packs as necessary).
- e) DO NOT Rinse or OVERFILL containers.
- f) Tightly cap the sample bottles
- g) Review the sample bottle label to ensure that all of the information contained on the label is correct.
- h) Make sure that all information on the sample collection form is correct and complete.

4. Damaged labels and/or Missing Samples

- a) For the instances when labels are lost or damaged labels, continue with the testing the sample. The lab can note Sample IDs as "N/A" (Not Available) for these samples and continue testing.
- b) If the test results from N/A Sample ID's are below AL, no further action is necessary.
- c) If the tests are above AL for any samples with "N/A", the locations will need to be extrapolated by process of elimination - understanding that if there is single "N/A" sample that comes above AL, CPS will decommission all fixtures with an "N/A" sample ID from the Facility until follow up testing can be completed.

- d) In the event that a sample is not included in the lab results or a label has been damaged during transport, the following criteria shall be used to determine if a fixture is to be re-tested.
- e) 1st Draw or Sequential - In coordination with Asset, CPS School Staff and/or Food Services, if the fixture is concluded to be used, then the fixture shall follow the flushing protocol described in (FIND NAME OF DOCUMENT) and shall be re-tested.
- f) Multiple Draws or Sequential per Fixture - If at a minimum two samples are missing, the fixture shall follow the flushing protocol described in (FIND DOCUMENT NAME) and shall be re-tested.
- g) 2nd – 5th Draws or Sequential - Following the above criteria, if one (1) sample result for that fixture comes back Non-Detectable (ND), then no re-testing shall take place.
- h) Above Action Level Results With Missing Samples - If results received have Above Action Level results and is indicated to have missing samples, the Network Chief, Principal and Communications shall be notified and the Building Engineer shall be responsible for bagging and tagging the fixture(s). The fixture with missing sample(s) will follow the above procedure to determine if re-testing shall be necessary.

7.1 Data Input and Management

1. Data Collection Procedures

- a) All water samples collected shall be inputted into a Data Collection Form and shall be associated by Facility ID for proper record keeping.
- b) All water sample outlets shall have quality photos taken.
- c) All water sample locations shall be marked up on Architectural Drawings
- d) Each Water Sampling School Campus shall have a Building Engineer or Custodial Staff member complete a Potable Water Sampling for Lead Concentration Plumbing Profile Questionnaire.
- e) All samplings shall be submitted to a certified lead water testing laboratory for analysis.

2. Data Collection Management

- a) All test results shall be submitted within one (1) day of sampling of a School
- b) All test results shall be submitted to CPS and follow the CPS and/or the certified lead water testing laboratory Chain of Custody (COC).

8.1 Notification Protocol -Please see CPS Facilities Daily Communication Protocol

9.1 Follow-Up Flush Sampling

1. Follow up sampling procedures will be completed based upon initial survey results and the need for additional information that targeted testing could provide. Additional sampling could be for risers, fixtures or the main water service. Sampling methods could include:
 - First Draw, 30 seconds, Second Draw (250 ml, or 1L)
 - Sequential Five (5) Draws (250 ml, or 1L)
 - Sampling methodology will be determined Environmental Department in conjunction with the CWM, Facilities consultants and staff.
2. Post Modifications, Repair or Replacement- Once repairs, replacement or construction is complete, all impacted fixtures and outlets will be retested for clearance purposes.
 - Sequential Five (5) Draws (250 ml) will be the standard clearance procedure.
3. CPS Follow Up Testing
 - Fixtures that have been mitigated will have follow up testing conducted 90-120 days after the fixture(s) have been returned to service. Follow up Testing will follow the standard testing protocol.