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# WATER SAMPLING METHODOLOGY/ PROTOCOL DEKALB COUNTY SCHOOL DISTRICT

## SEPTEMBER 12, 2016 VERSION

All testing, will be performed in accordance with the U.S. Environmental Protection Agency (EPA) technical guidance *3Ts for Reducing Lead in Drinking Water in Schools*, revised October 2006.

Timing of Sample Collection: Note that, in accordance with the above referenced guidance, all water samples are to be collected before the facility opens and before any water is used. Ideally, the water should sit in the pipes unused for at least 8 hours, but not more than 18 hours, before a sample is collected. Samples cannot be collected in the morning after vacations, weekends, or holidays. If samples must be collected during these periods, DeKalb County School District (DCSD) must ensure that the system has been adequately flushed at least 8 hours prior to sampling.

1. AEM will coordinate directly with Indoor Air Quality Maintenance Manager, to schedule each site visit with his designated staff. DCSD staff will shut down each facility to be sampled by 7:00 p.m. on the day prior to the anticipated sampling date. Also, DCSD will provide a representative to accompany AEM staff to each school and to each sample location.
2. DCSD staff will identify drinking water outlets at each facility and provide to AEM three business days prior to the visit. Those outlets include at a minimum the following, where applicable. Note that not all of the following drinking water sources (e.g., athletic fields) will be present at each facility:
  - i. Water fountains
  - ii. Pre-kindergarten and kindergarten classroom sinks and/or restroom sinks and all class room bubbler fountains
  - iii. Cafeteria kitchen sink
  - iv. Teachers' water fountain/Teachers' Lounges
  - v. Drinking water sources at the Athletic Fields
  - vi. Restroom sinks
  - vii. Other identified locations where drinking water is typically obtained (i.e., high use areas)
  - viii. Ice makers
  - ix. Duplicate sample for QA/QC purposes
3. Sampling will be conducted Tuesday through Friday and will begin at approximately 5:00 a.m.

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4. The day of testing, AEM staff will meet with DCSD staff at the scheduled location at 5:00 a.m. AEM will confirm with DCSD that to the best of their knowledge the outlets have not been used for at least 8 hours but have also not been unused for more than 18 hours. All samples will be collected from a cold water tap (with the exception of samples from ice makers; see iii. below). AEM will collect one 250-milliliter (250 mL) sample from each designated location as a primary “first draw sample.” Following collection of the first draw sample, the sampling location will be flushed for 30 seconds and a second sample or “Flush sample” will be collected. Sample locations will be clearly marked on a floor plan/sketch. The types of samples collected include the following:
    - i. Quality Assurance/Quality Control samples include one first draw and one Flush duplicate sample from each school. A field blank is not recommended for this study.
    - ii. For all samples except for the incoming water from DeKalb County and ice makers, samples will be collected from each source by collecting an initial Draw Sample in a 250 ml laboratory supplied sample bottle, and after flushing for 30 seconds, a second 250 ml sample will be collected as the Flush Sample from this same water source.
    - iii. Where present, ice makers will be characterized by collection of a single sample of ice cubes. Ice cubes will be collected from the machine and placed directly into an unpreserved 500 mL container. The sample will be delivered to the laboratory with the other samples for the same analysis. No duplicate samples will be collected from ice makers.
  5. Upon completion of the sample collection inside the building(s), AEM and DCSD will meet with DeKalb County Watershed Management staff to collect a split sample from the main water line to the school buildings. A 500 mL sample will be collected in one container. The sample will then be split between two 250 mL bottles, alternating approximately 50 mL at a time until each bottle is filled. One 250 mL sample will be given to DeKalb County Watershed Management and one will be submitted with the school samples for laboratory analysis. No duplicate samples will be collected from the main water lines.
  6. Samples will be collected in unpreserved sample bottles and stored in an iced cooler. A laboratory chain of custody form including the unique identification number, date and time, and analysis type will accompany each cooler to the laboratory.
  7. All samples will be submitted for laboratory analysis for lead in drinking water via U.S. EPA Method 200.8DW on the same day the sample is collected. The laboratory staff will preserve the sample bottles upon receipt, as per U.S. EPA Method 200.8. Please note that the EPA procedure requires that each sample also be tested for turbidity, which is a second test, to determine whether any metals detected are in the dissolved or total concentrations phase.

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8. All samples will have a unique identification number. A key, which will be reviewed and approved in advance with DCSD, will be provided in the report to assist the reviewer in identifying the location of each sample.
  9. AEM will clearly document in a bound logbook the (1) Facility Name, (2) location of each sample site, (4) date and times, (5) type of sample [i.e., Flush or first draw], and (6) name of the manufacturer that produced the outlet (e.g., water fountain cooler) and the outlet's model number. If provided, AEM will also document the DeKalb County Watershed Management specific sample ID for the split sample collected at the main water line.
  10. AEM will review results upon receipt and on a daily basis. AEM will notify DCSD within two hours of receipt of any sample that reports at or exceeds **15 micrograms/liter ( $\mu\text{g/L}$ )**, equivalent to parts per billion (ppb).
  11. AEM will provide a report per school detailing the sampling protocol conducted, observations made during the site visit, and the results of the sampling. Should concentrations of lead in drinking water equal or exceed 15 ppb, AEM will make a recommendation for additional sampling to narrow the source of the lead and/or so that corrective action can be initiated immediately. Additionally, AEM will prepare an Excel<sup>®</sup> spreadsheet listing all results from all schools.