POTABLE WATER SAMPLING PROTOCOL FOR LEAD CONCENTRATION

In

NEW YORK CITY BOARD OF EDUCATION ELEMENTARY SCHOOL BUILDINGS

This Elementary School Sampling Protocol (hereinafter the "protocol") is based on EPA Guidance 812-B-94-002, dated April 1994, *Lead in Drinking Water in Schools and Non-Residential Buildings (*hereinafter, the "EPA Guidance"*).* The purpose of this Protocol is to collect, analyze and measure the concentration of lead in potable water in New York City Board of Education (NYCBOE) Elementary School Buildings. Initially, the Elementary School Sampling Protocol will be used to sample drinking water outlets at elementary schools that were not investigated as of May 31, 2002.

1.0 Prior to the inspection, the environmental consultants shall:

1.1 Contact the custodian engineer at the school to coordinate and schedule the potable water (water use for drinking and food preparation purposes) inspection.

1.2 At the same time the environmental consultant will interview the custodian engineer and obtain the information necessary to complete the Lead in Drinking Water Plumbing Profile Questionnaire (Attachment 1). If the custodian engineer is not available for interview at the time of scheduling (Item 1.1 above) the consultant will interview the custodian engineer or a member of his staff and complete the Lead in Drinking Water Plumbing Profile Questionnaire at any time prior or during the school visit (Item 2.2 below) but prior to sampling.

2.0 Prior to sampling, the environmental consultant shall visit the school and:

2.1 Flush all potable water outlets to be sampled. Since the majority of these elementary school are closed or partially utilized during this sampling period (July – August) it will be necessary to simulate normal water system use. Therefore, the environmental consultant will visit the elementary school and simulate normal water use by flushing all potable water outlets to be sampled at the elementary school for a minimum of two (2) hours. The said flushing should take place no less than eight (8) hours but no more than eighteen (18) hours prior to sampling.

2.2 Interview the school custodian engineer and/or custodial staff one more time to finalize and/or confirm the information on the Lead in Drinking Water Plumbing Profile Questionnaire.

2.3 During this time the environmental consultant with the assistance of the custodian engineer and/or custodial staff should generate a floor plan/sketch drawing showing the all potable only water outlets in the school. (Copies of floor plans can be obtained from the school's AHERA books located at the Board of Education - Environmental Health and Safety (EHS) office, 28-11 Queens Plaza North, 4th Floor, Long Island City, NY 11101).

2.4 At the same time, to the extent feasible based on the information provided to the consultant by BOE and on his/hers field observations, the consultant will verify the accuracy of the information provided by the school custodian engineer and/or custodial staff and included in the Lead in Drinking Water Plumbing Profile Questionnaire.

2.5 After the flushing the consultant will instruct/confirm with the custodian engineer and/or custodial staff that no water outlets in and around the school will be utilized until the sampling is

complete which must take place at minimum eight (8) hours but not later than eighteen (18) hours after the flushing (Item 2.1 above). The custodian engineer and/or custodial staff must post signs and secure each outlet (e.g. install yellow warning tape to isolate each outlet) to prevent anyone from using the outlet prior to the sampling and to assure that each outlet is ready for sampling.

3.0 During the inspection/sampling at each school, the environmental consultant shall:

3.1 Return to the school for sampling at minimum (8) hour after but not later than eighteen (18) hours from the time of flashing (Item 2.1 above).

3.2 Prior to commence sampling the environmental consultant should confirm/verify with the custodian engineer and/or custodial staff that no water outlet in and around the elementary school have been operated/utilized within the time period between the flushing (Item 2.2 above) and sampling (Item 3.5 below). In the event that the environmental consultant confirm/verify that water outlet(s) in and around the elementary school have been operated/utilized within the time period between the flushing (Item 2.2 above) and sampling (Item 3.5 below) and/or outlet(s) show immediate prior use do not sample the said outlet(s) at this time and proceed with Item 3.8 below.

3.3 Prior to commence sampling the environmental consultant should identify all outlets that are most likely used for drinking and food preparation purposes, including, but not limited to, kitchen taps, fountains, coolers, faucets, bubblers, ice makers, and bottled water machines.

3.4 Prior to commencing sampling the environmental consultant should identify and marked all water outlets to be sampled on the generated floor plan/sketch drawing showing all the potable only water outlets in the school (Item 2.3). Each water outlet will be numbered according to a consistent protocol.

3.5 Sample all the identified outlets that are most likely used for drinking and food preparation purposes, including, but not limited to, kitchen taps, fountains, coolers, faucets, bubblers, and ice makers. Bottled water dispensers should be noted but not sampled.

a. The environmental consultant will coordinate the water outlets to be sampled with the school contact. Custodial slop sinks and bathroom hand washing taps from sinks will not be sampled unless they are used by Pre-Kindergarten, Kindergarten or Special Education students. Two samples will be collected at each such water outlet as follows:

i. Initial screening sample, a first-draw. This sample should be collected before the school opens and before any water is used to assure that no water is withdrawn from the outlets from which the samples are to be collected for a minimum of eight (8) hours prior to sampling but not later than eighteen (18) hours. This protocol assumes that the NYC BOE will be responsible for assuring that water is not drawn from any potable water outlet within the subject school overnight prior to sampling.

ii. Follow-up sample, a thirty (30)-second flush sample. This sample will be collected to indicate if the piping that supplies that outlet with water is a source of

lead. This sample will also indicate the extent to which a brief flush can provide temporary remediation at outlets where lead levels above 0.020 mg/L are detected in the first draw sample.

b. Sample volumes will be collected in 250 milliliters (ml) containers. Sample containers will be HDPE or LDPE acid-washed containers preserved with nitric acid.

c. The environmental consultant shall assign a unique sample ID number to each sample collected. This number will be recorded on the sample bottle and clear waterproof tape shall be installed over the sample number to prevent wash off. The sample ID number shall be recorded on the Potable Water Sample Collection Form (Attachment 2) along with the date and time of collection, the name of the sample collector, the sample site address, the type of outlet being tested, the location of the outlet being tested, the name of the manufacturer that produced the outlet, and the outlet's model number. In addition, the environmental consultant shall document all observations in the field on the form (such as low water flow, colors or odors in the water, etc.).

d. To ensure that samples obtained in the field are of satisfactory quality and represent the system from which they are collected, sample handling shall be performed in accordance with the EPA Guidance. In particular, samples shall be collected and handled in a manner that will minimize contamination by dust, dirt, or other impurities. In addition, the sample collector shall don a new pair of latex disposable gloves for each sample.

e. To avoid shipping restrictions and personnel handling hazards, samples shall be sealed immediately on collection and shipped overnight to a certified laboratory for sample preparation and analysis.

3.6 Sample **COLD water only**.

3.7 **DO NOT** sample hot water or mixed hot and cold water.

3.8 Re-coordinate with the NYC BOE to return and test outlet(s) that show immediate prior use or where supply valves have been operated on outlet piping within eight (8) hours prior to sampling.

4.0 Following the inspection at each school, the environmental consultant shall:

4.1 Utilize NYC BOE-approved laboratories, certified by NYS ELAP for analysis of lead in drinking water, to analyze all potable water samples collected.

4.2 Instruct the laboratory to first analyze only the initial screening sample(s) (1st draw sample). Follow-up sample(s) (30 sec. flush sample) shall be analyzed only when the initial screening sample collected from the same outlet exceeded the EPA Guidance level for lead in potable water of >0.020mg/L.

4.3 Notify the NYC BOE immediately (i.e., the same business day) upon receipt of any laboratory analysis sample results that exceed the USEPA guidance level for lead in potable water of >0.020mg/L. Provide an Inspection Report to NYC BOE that will document the number of

outlets in the elementary school, the number of outlets sampled, and the reason why particular outlets in the area were not sampled, as well as the name of the person who directed sampling at the site, if any. The Inspection Report will also include immediate and follow-up remediation recommendations.

New York City Board of Education
Office of Environmental Health and Safety

ATTACHMENT 1

ELEMENTARY SCHOOL SURVEY
POTABLE WATER SAMPLING FOR LEAD CONCENTRATION
PLUMBING PROFILE QUESTIONNAIRE

Attach floor plans identifying the location of outlets that provide water for cooking or drinking.

Name of School _____

Address _____

Main Phone Number _____

Principal _____ Phone # _____ Fax # _____

Custodian Engineer _____ Phone # _____ Fax # _____

1) When was the school constructed? _____

2) Were plumbing repairs made since construction of the school? ☐ YES ☐ NO
If YES, when? _____

3) Do the faucets used to obtain water for drinking and cooking purposes within the school have accessible aerated screens? ☐ YES ☐ NO
If YES, are the screens cleaned regularly? ☐ YES ☐ NO

4) Can you detect signs of corrosion, such as frequent leaks, or rust-colored water from taps, within the school? ☐ YES ☐ NO
If yes, how often and from what locations? (Indicate from cold and/or hot water)
_____

_____

5) Is electrical equipment 'grounded' to water pipes in the immediate area of the school?

☐ YES ☐ NO If yes, note location(s): _____

6) Have there been complaints about a bad (metallic) taste to the water? ☐ YES ☐ NO

7) When, if ever, were water samples from your building collected? _____

8) Is water used during the night or prior to the daily opening of the school? ☐ YES ☐ NO

If YES, for what purpose? _____

9) Complete the table below indicating the number and status of all potable water outlets in and around the school building where water is used for cooking or drinking purposes. Identify the location of each outlet.

Outlet	Number currently operational and in service.	Number Currently Operational and Out of service.	Number Currently Non-Operational.	Describe reason(s) For being out of service.
Water Fountains "bubbler type"				
Water coolers (chilled Storage)				
Bottled water coolers				
Kitchen faucets				
Ice makers				
Other source of drinking water (describe)				

Information provided by _____, _____, _____
(print name) (affiliation) (date)

Information provided by _____, _____, _____
(print name) (affiliation) (date)

Questionnaire completed by _____, _____, _____
(print name) (affiliation) (date)

To the extent feasible as outlined in Item 2.4 of the protocol the information provided by the above mentioned school custodian engineer and/or Custodial staff was verified for accuracy by:

_____, _____, _____
(print name) (affiliation) (date)