

J.C. Broderick & Associates, Inc.

Environmental / Construction Consulting & Testing

August 31, 2016

Mr. Dennis Warsaw
Miller Place Union Free School District
Administration Building
15 Memorial Drive
Miller Place, New York 11764

Re: **Lead in Water Sampling**
Miller Place Union Free School District

Sites: **Andrew Muller Primary School**
Miller Place High School

Laddie A. Decker Sound Beach School
North Country Road Middle School

JCB#: 16-34561

Dear Mr. Warsaw:

J. C. Broderick & Associates, Inc. (JCB) was retained by the Miller Place Union Free School District to perform an assessment and testing of the drinking water outlets servicing the above referenced school buildings for the presence of lead. The assessment and testing was performed in accordance with the United States Environmental Protection Agency (EPA's) protocols as recommended in their publication 3Ts for Reducing Lead in Drinking Water in Schools.

Sampling was performed at one hundred seventy one (171) drinking outlets, and lead was initially detected above the action level at only thirty five (35) of these locations. Subsequently, remediation measures have been implemented at each of these thirty-five locations.

Background

Lead is a toxic metal that can be harmful to human health when ingested or inhaled. Even small doses of lead can be harmful. Unlike most other contaminants, lead is stored in our bones, to be released later into the bloodstream. Even small doses can accumulate and become significant. The groups most vulnerable to lead include fetuses and young children. Drinking water represents one possible means of lead exposure.

Even though water delivered from your community's public water supply must meet Federal and State standards for lead, you may still end up with too much lead in your drinking water because of the plumbing in your facility and because of the building's water use patterns. The physical/chemical interaction that occurs between the water and plumbing is referred to as corrosion. The extent of which corrosion occurs depends on various factors such as the lead content of the building's plumbing and piping system, water velocity, temperature, alkalinity, chlorine levels, the age and condition of plumbing, and the amount of time water is in contact with the plumbing.

Therefore, the critical issue is that even though your public water supplier may send you water that meets all Federal and State public health standards for lead, you may end up with too much lead in your drinking water because of the plumbing in your facility. The only way to be certain that lead is not a problem in your school building is to test various drinking water outlets (i.e., taps, bubblers, coolers, etc.) for the



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substance. That is why testing the water from your drinking water outlets for lead is so important.

In their revised technical document, 3Ts for Reducing Lead in Drinking Water in Schools the EPA outlines a recommended guidance and testing protocol that can be used by schools to determine the source and degree of lead contamination problems in their school buildings and how to remedy such contamination. This strategy was utilized for the assessment and testing of the above referenced school buildings and included the following:

- The Development of a Plumbing Profile;
- The Development of a Sampling Plan;
- Conducting Initial and Follow-Up (Flush) Sampling and Analysis;
- Determination of Interim and Long-Term Remedies;
- Informing the School Community.

Development of a Plumbing Profile

The purpose of developing a plumbing profile is to target potential problems and assess the factors that can contribute to presence and extent of lead contamination in a school building. That is, determine whether the school building may have a widespread problem or a localized concern.

The plumbing profile performed included the answering of a series of questions by an informed school building representative. Typically the questionnaire is completed by the Director of Facilities, the district architect, or the district plumber. The responses to these questions assisted in determining how and where the water entered, flowed through the school building and identifying and prioritizing sampling sites.

Due to the age of the school buildings, the number of additions, historic repairs and the lack of specific information pertaining to the lead-content of the plumbing and associated fixtures, comprehensive information was not obtained from the questionnaire identifying if, or where lead-containing plumbing may exist in the school buildings' plumbing system. Therefore a sampling plan was prepared to assess all High Priority Water Outlets or outlets used for drinking or cooking within the school buildings.

Development of a Sampling Plan

An inspection of all functional spaces located within the above referenced school buildings were performed to identify the locations of all high priority water. High priority water outlets are defined by the EPA as:

- Drinking fountains, both bubbler and water cooler style
- Kitchen sinks
- Classroom combination sinks and drinking fountains
- Home economic rooms sinks
- Teacher's lounge sink, nurse's office sink
- Classroom sinks in special education classrooms
- Or any other sinks known to be visibly used for consumption (for example, coffee maker or cups are nearby).

The location of these water outlets were demarcated on Site Location Maps which have been prepared for each school building. Copies of these maps can be referenced as an attachment of this report.

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Detailed information pertaining to each outlet sampled was recorded on a chain of custody document at the time of the sampling. Unique sample identification numbers were assigned to each sample that correspond the school building’s prepared site location map and chain of custody documents. The information recorded on the chain of custody forms included the type of sample collected, date and time of collection, name of the sample collector, location of the sample site and the name of the manufacturer that produced the outlet and the outlets’ model number, if applicable and available. The manufacturer and model number information recorded about each of the water coolers servicing the school buildings were also compared to known water coolers that contain lead-lined tanks and or lead containing components.

Drinking water samples were collected for lead analysis utilizing the two-step process for lead contamination identification as described in the above referenced EPA document. This includes the collection of both “Initial 1st Draw” and “Follow-Up Flush” samples subsequent to meeting the recommended stagnation period. All samples were sealed immediately after collection and delivered to a certified laboratory, in laboratory provided coolers, for the analysis of lead content. A copy of the laboratory certifications can be referenced as an attachment to this report.

Initial and Follow-Up Flush Sampling

All “initial 1st draw samples” collected were analyzed for the presence of lead. Reported results were then compared to the established EPA action level of twenty parts per billion (20 ppb). If the reported level of lead in the initial first draw samples were at or below the action level, the water outlet was designated as satisfying the Federal guidelines for lead levels.

If the initial 1st draw sample’s lead levels were above the action level, then further investigation and sampling was performed (including the analysis of the follow-up flush sample) in accordance with the EPA’s Sampling Strategy Flowchart located in their guidance document.

The following table summarizes the number of drinking water/high priority outlets sampled in each school building and their corresponding results. Detailed information pertaining to each water outlet sampled and their specific laboratory results can be referenced on the chain of custody and laboratory results located in the attachments.

| School Building | Drinking Water Outlets Sampled | Locations which Exceeded EPA Action Level |
|----------------------------------|--------------------------------|---|
| Miller Place High School | 21 | Map Location 9: Faucet in 162/163 Walkthrough Map Location 18: Sink in Nurse’s Office |
| North Country Road Middle School | 47 | Map Location 11: Faucet in Room 4 Map Location 12: Fountain in Room 17 Map Location 13: Faucet in Room 18 |
| Andrew Muller Primary School | 47 | Map location 3: Faucet in kitchen Map location 5: Fountain in classroom 1 Map location 6: Fountain in classroom 2 Map location 12: Fountain in classroom 5 Map location 36: Fountain in classroom 25 Map location 37: Fountain in classroom 26 |

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| School Building | Drinking Water Outlets Sampled | Locations which Exceeded EPA Action Level |
|-------------------------------------|--------------------------------|--|
| Laddie A. Decker Sound Beach School | 56 | Map location 2: Faucet in kitchen Map location 3: Faucet in kitchen Map location 4: Faucet in kitchen Map location 5: Faucet in kitchen Map location 11: Faucet in classroom 138 Map location 12: Faucet in classroom 137 Map location 13: Faucet in classroom 140 Map location 14: Faucet in classroom 139 Map location 15: Faucet in classroom 144 Map location 17: Faucet in classroom 148 Map location 18: Faucet in room 111 computer room Map location 19: Faucet in classroom 150 Map location 20: Faucet in classroom 149 Map location 21: Faucet in classroom 152 Map location 22: Faucet in classroom 151 Map location 24: Faucet in classroom 153 Map location 31: Faucet in nurse's office Map location 44: Faucet in classroom 116 Map location 45: Faucet in classroom 113 Map location 47: Faucet in classroom 111 Map location 48: Faucet in classroom 112 Map location 49: Faucet in classroom 109 Map location 50: Faucet in classroom 110 Map location 53: Faucet in classroom 103 |

Interim and Long-Term Remediation

Point-of-use lead reduction filters have been installed and aerator replacements have been performed at each of the faucet outlets referenced above. Lead-free bubblers were installed at each of the fountain units. Also, flushing of these outlets will be performed in accordance with the EPA Guidelines until further testing deems this unnecessary.

For these and all other drinking water outlets, it is recommended that the district perform routine control measures including, but not limited to:

- Maintain all drinking water outlets, screens/aerators, and any associated filters
- Develop flushing program for extended non-use
- Use only cold water for food and beverage preparation
- Instruct users to run the water before use or drinking
- Communicate with building occupants the non-potable locations such as faucets in classrooms, bathrooms, and custodial areas indicating that water should not be consumed

For more information pertaining to these control measures, please reference the EPA's guidance document entitled "Drinking Water Best Management Practices for Schools and Child Care Facilities Served by Municipal Water Systems."

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Informing the Public

EPA recommends that schools conducting lead-in-drinking-water sampling programs comply with the public information components of the Lead Contamination Control Act. There are two components:

1. Notify relevant parent, teacher, student, and employee organizations of the availability of your sampling program results, and
2. Make copies of the sampling results available in your administrative offices “for inspection by the public, including teachers, other school personnel and parents.”

Given the health effects of lead, EPA advocates that any school conducting sampling for lead make public any test results. In addition, such schools should identify activities they are pursuing to correct any lead problems.

There are six (6) basic public notification methods recommended by the EPA that should be applied alone, or in combination, to communicate lead-in-drinking-water issues and the meaning of your sampling results. The method(s) that best suits the school districts particular situation should be chosen and can include:

- Press Releases
- Letters/Fliers
- Mailbox or Paycheck Stuffers
- Staff Newsletters
- Presentations, or
- Email and Web Sites.

Advice, suggestions and samples to assist in the public notification process is available from the EPA in their 3Ts for Reducing Lead in Drinking Water in Schools. This publication is available online in the EPA’s website.

It should be noted that this sampling was performed in accordance with current guidelines. Should the guidelines change, or legislation dictate other criteria, these results may need to be reevaluated. If you need any further assistance, please feel free to contact our office.

Sincerely,



Edward McGuire
J.C. Broderick & Associates, Inc.