



*Effective and Economical
Environmental Solutions*

**Comprehensive Lead in Drinking Water Services
Per amendments to N.J.A.C 6A:26 Educational Facilities
Upper Saddle River School District
395 West Saddle River Road
Upper Saddle River, NJ 07458**

Karl Environmental Group Project #: 16-0939

May 24, 2017

Prepared for:
Mr. Nijazi Leka
Supervisor of Buildings & Grounds
Upper Saddle River School District
395 West Saddle River Road
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Mr. Nijazi Leka
Supervisor of Buildings & Grounds
Upper Saddle River School District
395 West Saddle River Road
Upper Saddle River, NJ 07458

Re: Comprehensive Lead in Drinking Water Services per N.J.A.C 6A:26
Reynolds Primary School: 391 W. Saddle River Road, Upper Saddle River, NJ 07458
Bogert Elementary School: 391 W. Saddle River Road, Upper Saddle River, NJ 07458
Cavallini Middle School: 392 W. Saddle River Road, Upper Saddle River, NJ 07458
Karl Environmental Group Project #: 16-0939

Dear Mr. Leka:

Thank you for selecting Karl Environmental Group (“Karl”) for this project. This report details the methods and findings of the comprehensive lead in drinking water services as per New Jersey state regulations (amendments to N.J.A.C 6A:26 Educational Facilities) performed for the Upper Saddle River School District at Reynolds Primary School, Bogert Elementary School, and Cavallini Middle School (the “Facilities”), located at the above-referenced addresses on February 21, 2017.

1.0 PROJECT BACKGROUND

Karl was contacted by the Upper Saddle River School District (the “Client”) to perform lead in drinking water sampling to determine the lead content of drinking water from sources throughout the Facilities. Additionally, as per State regulations, Karl was contracted to create a Quality Assurance Project Plan (QAPP) and a Sampling Plan (SP), including a Drinking Water Outlet Inventory, Filter Inventory, and Outlet Location Diagrams. These documents are available under separate covers (*see Upper Saddle River School District Quality Assurance Project Plan, February 2017 and Upper Saddle River School District Sampling Plan, February 2017*).

The purpose of lead in drinking water sampling is to determine if any sampled drinking water sources exhibit lead levels exceeding the Regulatory Action Level of 15.5 parts per billion (ppb). Drinking water collection points included any water sources from which a student, staff, or faculty may reasonably drink or from which the water may be used for cooking or beverage preparation, including, but not limited to, water coolers/bubblers, kitchen faucets, Nurse’s Office faucets, Faculty/Staff lounges.

2.0 LEAD IN DRINKING WATER

Lead is a toxic substance that can be harmful to human health. As compared to adults, children are more susceptible to the detrimental health effects of lead, as their nervous systems are not yet fully developed. Exposure to lead can occur in a variety of ways including through food, soil, deteriorating lead-based paint, and drinking water. Lead can leach into drinking water from plumbing materials such as pipes and solder, as well as brass plumbing fixtures. For this investigation, planning, preparation, methodology, sampling, and follow-up actions were conducted according to the technical guidance provided by New Jersey following the adoption of amendments to N.J.A.C. 6A:26: Educational Facilities, requiring the sampling of drinking water for lead in public schools.

3.0 DRINKING WATER SAMPLING METHODOLOGY

Karl collected drinking water samples from water outlets throughout each Facility. At each collection point, Karl filled a 250 milliliter (mL) wide-mouth high density polyethylene (HDPE) sample collection bottle from the selected water source. Samples were collected after the water in each building had not been used for at least 8 hours, but not more than 48 hours. Samples were preserved using concentrated Nitric Acid (HNO₃). The initial sample at each collection point represents the first draw sample. The first draw sample is representative of the water from the end point of the water source (i.e. the bubbler or tap).

A field blank using lead-free laboratory reagent water was also collected at each Facility during the sampling event to rule out contamination of samples during the collection and transportation process.

All samples were recorded under proper chain of custody and couriered to Suburban Testing Labs (Suburban), a New Jersey certified laboratory (NJ Lab ID #PA081) located in Reading, Pennsylvania for analysis by EPA method 200.8.

Karl collected the following number of water samples during the initial sampling event on February 21, 2017:

Reynold Primary School:

- One (1) Field Blank Sample
- Eleven (11) First Draw Samples

Bogert Elementary School:

- One (1) Field Blank Sample
- Eleven (11) First Draw Samples

Cavallini Middle School:

- One (1) Field Blank Sample
- Thirteen (13) First Draw Samples

For complete drinking water outlet inventories and sampling location diagrams for each Facility, refer to the Client’s Sampling Plan, dated February 2017. Updates to this documentation can be found in the Field Log Book for each individual Facility.

4.0 DRINKING WATER ANALYSIS RESULTS

The analytical lead in drinking water results for each first draw sample are listed in Tables 1-3, below:

Table 1: Analytical Lead Results for First Draw Water Samples Collected from Reynolds Primary School – February 21, 2017

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Level?
USRR-BLANK	N/A	<1.00	No
USRR-TL-FACULTY	Sink	2.79	No
USRR-WC-HALLD-GYM-1	Water Cooler	<1.00	No
USRR-WC-HALLD-GYM-2	Water Cooler	<1.00	No
USRR-WC-HALLB-92-1	Water Cooler	<1.00	No
USRR-WC-HALLB-92-2	Water Cooler	<1.00	No
USRR-WC-HALLC-106-1	Water Cooler	<1.00	No
USRR-WC-HALLC-106-2	Water Cooler	<1.00	No
USRR-WC-NURSE-1	Water Cooler	<1.00	No
USRR-WC-NURSE-2	Water Cooler	<1.00	No
USRR-WC-HALLA-49-1	Water Cooler	<1.00	No
USRR-WC-HALLA-49-2	Water Cooler	<1.00	No

Table 2: Analytical Lead Results for First Draw Water Samples Collected from Bogert Elementary School – February 21, 2017

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Level?
USRB-BLANK	N/A	<1.00	No
USRB-WC-HALLC-8-1	Water Cooler	<1.00	No
USRB-WC-HALLC-8-2	Water Cooler	<1.00	No
USRB-WC-HALLB-16-1	Water Cooler	<1.00	No
USRB-WC-HALLB-16-2	Water Cooler	<1.00	No
USRB-WC-HALLA-27-1	Water Cooler	<1.00	No
USRB-WC-HALLA-27-2	Water Cooler	<1.00	No
USRB-WC-HALLA-34-1	Water Cooler	<1.00	No
USRB-WC-HALLA-34-2	Water Cooler	<1.00	No
USRB-TL-FACULTY	Sink	1.61	No
USRB-WC-HALLA-41-1	Water Cooler	<1.00	No
USRB-WC-HALLA-41-2	Water Cooler	<1.00	No

**Table 3: Analytical Lead Results for First Draw Water Samples Collected from
 Cavallini Middle School – February 21, 2017**

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Level?
USRC-BLANK	N/A	<1.00	No
USRC-WC-1FL-HALLA-39-1	Water Cooler	<1.00	No
USRC-WC-1FL-HALLA-39-2	Water Cooler	<1.00	No
USRC-WC-1FL-HALLB-GYM-1	Water Cooler	<1.00	No
USRC-WC-1FL-HALLB-GYM-2	Water Cooler	<1.00	No
USRC-WC-1FL-HALLC-24-1	Water Cooler	<1.00	No
USRC-WC-1FL-HALLC-24-2	Water Cooler	<1.00	No
USRC-WC-1FL-HALLA-42-1	Water Cooler	<1.00	No
USRC-WC-1FL-HALLA-42-2	Water Cooler	<1.00	No
USRC-WC-1FL-HALLD-31-1	Water Cooler	<1.00	No
USRC-WC-1FL-HALLD-31-2	Water Cooler	<1.00	No
USRC-WC-BL-HALLE-36-1	Water Cooler	<1.00	No
USRC-WC-BL-HALLE-36-2	Water Cooler	<1.00	No
USRC-TL-BL-FACULTY	Sink	4.93	No

All laboratory analytical results were compared to the Regulatory Action Level of 15.5 ppb for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling event no samples exhibited lead concentrations above the Action Level.

5.0 CONCLUSIONS & RECOMMENDATIONS

Karl collected first draw samples from drinking water sources throughout the three (3) Facilities of the Upper Saddle River School District. First draw sample results indicated that none of the samples collected exhibited lead levels above the Regulatory Action Level of 15.5 ppb. At the conclusion of the comprehensive lead in drinking water services, Karl offers the following recommendations at this time:

- Continue to monitor lead in drinking water levels as part of a regular sampling and maintenance plan, as per New Jersey State regulations. Sampling is required every six (6) years.
- Implement an aerator cleaning maintenance program to prevent the build-up of debris behind the screen which may contribute to elevated lead levels.
- Enter all filter maintenance, aerator maintenance, plumbing repairs/changes and any other pertinent information into the Field Log Book for each Facility.

- Use only cold water for food and beverage preparation. Hot water is more likely to contribute to the corrosion of plumbing materials and therefore contain a greater level of contaminants from the plumbing system.

6.0 LIMITATIONS

This investigation focused on lead in drinking water only. No other heavy metals or additional contaminants were sampled for or analyzed. Lead concentrations can change as water continues to move through the water system.

Each sample was a grab sample and represents lead concentrations only at the specific time of collection and may vary based on the water usage in the facility. Interpretation of these results is only valid if the facility is serviced by a municipal water supplier or water utility.

This lead sampling event was in response to the amendments to N.J.A.C. 6A:26, Educational Facilities dated July 13, 2016, which requires testing for lead in the drinking water of public school districts.

7.0 CLOSING

Thank you for using Karl to assist you with this project. Please do not hesitate to call if you have any questions relating to this report or for any other environmental health and safety concerns.

Respectfully submitted,
Karl Environmental Group



Kelly L. Mays
Consultant