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Mold Assessment
and Remediation

September 13, 2021

Health/Safety and
Environmental
Regulatory
Compliance

Mr. Steve Campbell
Supervisor of Buildings & Grounds
Paramus Board of Education
145 Spring Valley Road
Paramus, NJ 07652

Right-To-Know

re: **Water Sampling for Compliance with N.J.A.C. 6A:26-12.4
Lead in Drinking Water**

OSHA/EPA/DOT
Training Programs

Dear Mr. Campbell,

Asbestos and Lead
Management

We enclose the following documents and related information for compliance with the new NJ Department of Education Regulation related to Lead in Drinking Water in school buildings:

Industrial Hygiene/
OSHA Compliance

Sampling Report Narrative	5 pages
Listing of Non-Compliant Drinking Water Taps	1 page
Water Sampling Log and Results	9 pages
Notification Letter (modified from NJ Dept of Ed letter template)	2 pages
Laboratory Analytical Report (digital copy only via email, 146 pages)	

Indoor Air Quality

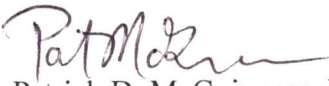
Underground/
Aboveground
Storage Tanks

All total of 104 drinking water samples were collected for Lead in the District's buildings and there were a total of seven (7) water samples that exceeded the 0.015 mg/L standard. As noted in section 2 of the report, public notification is required which identifies the responses the District has taken to address the issue.

Environmental
Site Assessment

If you have any questions, please don't hesitate to call us.

Hazardous/
Medical Waste
Management

Sincerely,

Patrick D. McGuinness, MS, P.E.
Vice President

Environmental
Audits

PDM/

(file\Reports\Watertest\Paramus-211)

Expert Witness/
Litigation Support

Customized
Software

Sampling Report - Lead and Copper in Drinking Water
Paramus School District

1. Sampling Results Summary

Sample Collection Date	August 12, 2021
Number of Buildings Sampled	8
Total Number of Samples Collected	114
Number of Samples with No Detectible Lead	56
Number of Samples Exceeding 5 ppb	15
Number of Samples Exceeding 15 ppb (0.015 mg/L) Standard for Lead	18
Number of Samples Exceeding 1.30 mg/L Standard for Copper	4

2. Required Response for Sample Results Exceeding 15 PPB Standard

The rules promulgated under the NJDOE “Safe Drinking Water” regulation N.J.A.C. 6A:26-12.4 require certain actions by the School District when the measured Lead content in any sample results exceeds the 0.015 mg/L standard. As indicated in the summary above, this level is equivalent to 15 parts per billion (ppb) and seven samples had results in excess of this level.

Within 72 hours after the District has reviewed the sample results, the District shall provide written notification to the parents and guardians of all students attending the affected facilities. The notification must include the following:

- A description of the measures taken by the School District to immediately end use of each affected water outlet;
- If necessary, measures taken to provide alternate drinking water;
- Information regarding health effects of Lead.

Appended to this report is a sample notification letter. It was taken from a template created by the NJDOE and has been modified to include our recommended responses as shown in the listing at the end of this report.

3. Water Sampling Procedures

Sampling protocols and procedures follow the EPA “3-T’s Program” that was developed for schools and Child Care centers. They recognize that the typical school building is actually a conglomeration of an original building with one or more additions, each of which typically having different plumbing system materials.

In addition, building sections constructed before 1986 likely have plumbing systems that used leaded solders on Copper water lines. Very old buildings and public water supply systems may also still have lead piping. Other potential sources of Lead in drinking water systems include brass faucets, fittings, along with valve seats and stems that are used in the municipal and building piping distribution systems. It is important to note that “Lead-Free” plumbing components used

since 1986 may actually contain up to 8% Lead by weight. In January 2014, this limit was lowered from 8% to 0.2% Lead.

The sampling protocol requires that water be collected as a “First-Draw” to ensure that the water sample has been standing for at least 8 hours. This is intended to replicate a “worst-case” situation since both the Lead levels are usually lowered significantly after running the water even for a few moments.

All samples were collected in 250 ml contaminant-free containers. Laboratory analysis of the water samples was performed by Pace Analytical Services, LLC of Melville, NY and Mt. Juliet, TN (NJ DEP Certification Nos. NY158 and TN002). The analytical method is per EPA Method 200.8 via atomic absorption, induction coupled plasma technique.

4. Sample Results and Discussion

Sampling results are discussed below and the sampling logs are appended to this report. All results are expressed as milligrams of Lead or Copper per liter of water (mg/L) and compared against the current 0.015 mg/L Action Level.

It is important to note that the laboratory results are reported in terms of micrograms per liter ($\mu\text{g/L}$). This is essentially equivalent to parts of Lead per billion (ppb) parts of water. The Action level also translates to 15 ppb.

A total of 114 water samples were collected on August 12, 2021 and analyzed for total Lead and Copper content. There were a total of 18 water sample locations in the various school buildings there the measured Lead content exceeded the 0.015 mg/L Action Level. On the other hand, 56 of the samples had no detectible levels of Lead present.

In addition, there were four (4) other locations where the measured Copper content exceeds the 1.3 mg/L Action Level. Three of these locations were at the High School and also had excessive Lead levels while the fourth sample at the Ridge Ranch Elementary School actually had acceptable Lead levels in the sample.

5. Additional Recommendations and Future Work

All but 7 water sample results showed acceptable results for Lead content. The following responses include those required by N.J.A.C. 6A:26-12.4 and our recommendations to maintain the drinking water quality as it relates to Lead contamination.

The NJDOE regulations requires that:

- These sampling results be made publically available at the school building and on the School District’s website.
- The School District shall collect drinking water samples and analyze for Lead at any drinking water outlet that has been replaced or after any alterations to the plumbing or

service lines to the outlet. Do not consume or cook with water from the affected outlet until acceptable Lead results are obtained.

- Repeat water sampling within 3 years or before August 2024.

In addition, we suggest that the following responses to minimize the potential for Lead contamination of drinking water:

Administrative Responses:

- There are several factors that influence the potential for Lead corrosion in drinking water piping systems. These include the chemistry of the water supplied being supplied to the building, water temperature and velocity through the piping, the age and condition of the plumbing, and the amount of time the water sits “stagnant” in contact with piping and drinking water fixtures. This last factor is the only one that a building owner has any control of.
- School building codes require a minimum of one (1) drinking water tap for every 100 students of building capacity. Wherever a larger number of water taps exists, the usage factor for each tap decreases. This, in turn, increases the “stagnation time” along with the increased potential for Lead corrosion. It is recommended that the need for all the water taps be investigated and reduced where appropriate while maintaining the minimum of 1 tap per 100 students.
- Consider implementing a program to shut-off and replace (if needed) any drinking water fixture of appliance that is more than 35 years old (was installed before the 1986 Lead Ban took effect).

Operational and Maintenance Responses:

- EPA recommends that any water tap where the measured Lead content exceeds 5 parts per billion (PPB) or 5 µg/L be inspected and cleaned of line sediment to eliminate potential sources of Lead contamination. There were a total of 15 water samples above this level.
- Use cold water only for drinking or cooking. Higher water temperatures will increase the water’s corrosion potential.
- The accumulation of line sediment on aerators and screens at the water taps is frequently the source of high levels of Lead. It is recommended that a program be established to regularly inspect for the presence of line sediment at all drinking water taps. Initially, an annual inspection is suggested. The inspection frequency should then be adjusted depending upon the amounts of sediment that is found and where it is found. Higher usage taps may accumulate sediment more quickly and need to be cleaned more often.
- It is known that flushing water through drinking water taps will reduce the levels of both Lead and Copper present in the drinking water. It is also recommended that a program

be established to run water at all drinking or cooking taps for at least one minute before students and staff return to school after long breaks, especially after the Summer recess.

Report prepared by:



Patrick D. McGuinness, MS, P.E.
Vice President

Sampling Report - Lead and Copper in Drinking Water
Listing of Non-Compliant Drinking Water Taps

Sample Location	Lead Results (µg/l or ppb)	Copper Results (mg/L)	Remedial Action – Recommended
<u>High School</u> Sink in Faculty Room Sink in Nurse's Office Ice Maker outside Trainer's Office Chiller outside Board Office Chiller in Board Office hallway	17.6 53.5 20.3 4,250 65.5	3.67 3.00 2.13	All these water taps were turned off so that they could not be used until they could be repaired or replaced. The outlets will remain out of service until acceptable laboratory results for Lead are obtained. Alternate sources of drinking water are located nearby these water fixtures
<u>East Brook Middle School</u> Kitchen Sink, across from prep area & freezer Kitchen Sink, across from refrigerator Nurse's Office sink / Eye Wash Sink in Instrumental Music Room	1,110 30.3 38.4 43.1		
<u>Parkway Elementary School</u> PTA Kitchen Sink, left side Main Office Break Room	19.3 18.3		
<u>West Brook Middle School</u> Bubbler in hall by Faculty Women's Room Kitchen Prep Sink faucet Kitchen Prep Sink Sink in Storage Room, next to Room 30	21.1 90.0 23.7 45.5		
<u>Memorial Elementary School</u> Bubbler in Room 108	62.1		
<u>Ridge Ranch Elementary School</u> Bubbler in hallway across from Resource Room Bubbler in Nurse's Office	35.7	2.18	
<u>Stoney Lane Elementary School</u> Faculty Room sink	38.0		

Water Sampling Log

Name of Building: Paramus High School Date Collected: 10-Aug-21
 Building Owner: Paramus Board of Education Sample Collected by: JS Gilbert

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Time	Results (mg/L)	
						Cu	Pb
RK-081021-01	1	1st	Sink/faucet		07:27	0.187	0.0021
RK-081021-02	2	1st	Bottle Filler		07:33	0.190	< 0.0020
RK-081021-03	3	1st	Kettle filler		07:40	0.076	0.0039
RK-081021-04	4	1st	Sink/faucet		07:44	0.295	0.0093
RK-081021-05	5	1st	Sink/faucet		07:49	0.300	0.0176
RK-081021-06	6	1st	Bubbler		07:58	0.218	0.0057
RK-081021-07	7	1st	Chiller	Halsey Taylor	08:00	0.194	< 0.0020
RK-081021-08	8	1st	Sink/faucet		08:05	0.429	< 0.0020
RK-081021-09	9	1st	Bubbler		08:10	0.087	0.0030
RK-081021-10	10	1st	Bottle Filler	Elkay	08:15	0.447	< 0.0020
RK-081021-11	11	1st	Bottle Filler	Elkay	08:16	0.425	< 0.0020
RK-081021-12	12	1st	Bottle Filler	Elkay	08:19	0.312	0.0022
RK-081021-13	13	1st	Sink/faucet		08:25	3.670	0.0535
RK-081021-14	14	1st	Ice Maker		08:40	0.092	0.0203
RK-081021-15	15	1st	Spigot		08:45	0.099	< 0.0020
RK-081021-16	16	1st	Sink		08:51	0.213	< 0.0020
RK-081021-17	17	1st	Sink		08:52	0.062	< 0.0020
RK-081021-18	18	1st	Sink		08:53	0.178	< 0.0020
RK-081021-19	19	1st	Sink		08:54	0.190	< 0.0020
RK-081021-20	20	1st	Sink		08:55	0.109	< 0.0020

Sample Type: **1st:** First Draw sample collected after water sat in pipe between 8 and 18 hours
FL: Water flushed through tap for at least 2 minutes
<: means Not Detected at or above the Reliability Detection Limit (RDL) of 0.0020 mg/L for Lead.

Water Sampling Log

Name of Building: West Brook Middle School Date Collected: 10-Aug-21
 Building Owner: Paramus Board of Education Sample Collected by: Chase M. Adams

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Location	Time	Results (mg/L)	
							Cu	Pb
RK-081021-200	1	1st	Bubbler		Across Art Room 52- Left	07:39	0.007	0.0056
RK-081021-201	2	1st	Bottle Filler	Elkay	Bottle Filler Outside Main Gym	08:04	0.017	< 0.0020
RK-081021-202	3	1st	Bubbler	Eijer	Boy's Locker Room	08:04	0.107	0.0031
RK-081021-203	4	1st	Bottle Filler	Elkay	Cafeteria	08:10	0.585	< 0.0020
RK-081021-204	5	1st	Bubbler		Girl's Locker Room	08:16	0.035	< 0.0020
RK-081021-205	6	1st	Bubbler		Hallway - across from Room 52, left	08:27	0.176	0.0063
RK-081021-206	7	1st	Bottle Filler	Elkay	Hallway - across from School Counselor	08:30	0.202	< 0.0020
RK-081021-207	8	1st	Bubbler		Hallway - next to Faculty Women's Room	08:35	0.022	0.0211
RK-081021-208	9	1st	Bubbler		Hallway - next to Room 12 #1	08:40	0.020	0.0024
RK-081021-209	10	1st	Bubbler		Hallway - next to Room 12 #2	08:41	0.061	0.0076
RK-081021-210	11	1st	Bubbler		Next to Women's Teacher Bathroom	08:45	0.017	0.0028
RK-081021-211	12	1st	Sink/faucet		Faculty Dining Room	08:58	0.063	< 0.0020
RK-081021-212	13	1st	Sink/faucet		Kitchen - prep sink	09:03	1.240	0.0900
RK-081021-213	14	1st	Sink		Kitchen Prep Sink	09:03	0.100	0.0237
RK-081021-214	15	1st	Sink/faucet		Main Office - Copy Room	09:10	0.176	< 0.0020
RK-081021-215	16	1st	Sink/faucet		Nurse Office	09:13	0.070	0.0044
RK-081021-216	17	1st	Sink/faucet		Storage next to Room 30	09:22	0.144	0.0455
RK-081021-217	18	1st	Sink		LEAP	09:28	0.477	< 0.0020

Sample Type: **1st:** First Draw sample collected after water sat in pipe between 8 and 18 hours
FL: Water flushed through tap for at least 2 minutes
 <: means Not Detected at or above the Reliability Detection Limit (RDL) of 0.0020 mg/L for Lead.

Water Sampling Log

Name of Building Ridge Ranch Elementary School
 Building Owner Paramus Board of Education

Date Collected 10-Aug-21
 Sample Collected by Chase M. Adams

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Time	Results (mg/L)	
						Cu	Pb
RK-081021-240	1	1st	Bubbler	Room 94	11:05	0.108	0.0063
RK-081021-241	2	1st	Bubbler	Room 95	11:07	0.187	0.0109
RK-081021-242	3	1st	Bubbler	Room 98	11:08	0.138	0.0031
RK-081021-243	4	1st	Bubbler	Room 99	11:10	0.192	< 0.0020
RK-081021-244	5	1st	Bubbler	Room 102	11:13	0.031	0.0095
RK-081021-245	6	1st	Bubbler	Hallway - across from Resource Room	11:16	0.234	0.0357
RK-081021-246	7	1st	Fountain	Outside Main Office	11:20	0.416	< 0.0020
RK-081021-247	8	1st	Bubbler	Outside Main Office	11:20	0.359	< 0.0020
RK-081021-248	9	1st	Bubbler	Nurse Office	11:22	2.180	0.0061
RK-081021-249	10	1st	Bubbler	Gym Room 70A	11:24	0.250	< 0.0020
RK-081021-250	11	1st	Bubbler	Hallway - across from Room 202, left	11:28	0.227	0.0070
RK-081021-251	12	1st	Bubbler	Room 401	11:30	0.147	< 0.0020
RK-081021-252	13	1st	Bubbler	Room 402	11:31	0.103	< 0.0020
RK-081021-253	14	1st	Bubbler	Across 404- Left	11:35	0.760	< 0.0020
RK-081021-254	15	1st	Chiller	Hallway - across from Room 404, right	11:36	0.632	< 0.0020
RK-081021-255	16	1st	Sink/faucet	Faculty	11:38	0.044	< 0.0020
RK-081021-256	17	1st	Bubbler	Room 406	11:39	0.069	< 0.0020
RK-081021-257	18	1st	Bubbler	Room 407	11:40	0.212	< 0.0020
RK-081021-258	19	1st	Bubbler	End of 300 hallway, right	11:43	0.565	0.0067

Sample Type: **1st:** First Draw sample collected after water sat in pipe between 8 and 18 hours
FL: Water flushed through tap for at least 2 minutes
<: means Not Detected at or above the Reliability Detection Limit (RDL) of 0.0020 mg/L for Lead.

