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May 4, 2017

regular and email: petty@blairstownelem.net

Ms. Molly Petty
 Board Secretary/Business Administrator
 Blairstown Board of Education
 1 Sunset Hill Road
 Blairstown, NJ 07825

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

Dear Ms. Petty,

We enclose our Project Report on the water sampling performed for compliance with the new NJ Department of Education Regulation related to Lead in Drinking Water in school buildings. The following items are attached:

Sampling Report Narrative	3 pages
Water Sampling Log and Results	2 pages
Laboratory Analytical Report	30 pages

Related project documents including the Sampling Plan Drawings and Quality Assurance Project Plan will be sent separately.

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

Sincerely,

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

PDM/

(file\Reports\Watertest\Blairstown-171)

Sampling Report - Lead in Drinking Water
Blairstown School District

1. Sampling Results Summary

Sample Collection Date	March 31, 2017
Number of Buildings Sampled	1
Total Number of Samples Collected	21
Number of Samples with No Detectible Lead	15
Number of Samples Exceeding 15 PPB (0.015 mg/L) Standard	0
Number of Samples Exceeding 5 PPB	1
Highest Measured Lead Content (mg/L)	0.012

2. 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, and valves 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 and Copper levels are usually lowered significantly after running the water even for a few moments.

Drinking water samples were collected early on a weekday or Saturday morning before staff and students arrived for classes to represent water that has sat idle in the building piping system overnight.

Laboratory analysis of the water samples was performed for both Lead and Copper since both could be sourced from the building plumbing and both are indicators of system corrosion.

All samples were collected in 250 ml contaminant-free containers. Laboratory analysis of the water samples was performed by Analytical Laboratory Services, Inc. of Middletown, PA (NJ DEP Certification No. PA010). The analytical method is per EPA 600/4-79-020, Method 200.8 via atomic absorption, platform furnace technique.

3. Sample Results and Discussion

Sampling results are discussed below. Water sampling logs and the complete laboratory analytical report 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. Results could also be expressed in equivalent terms of parts per billion (ppb) where the Action level translates to 15 ppb.

A total of 21 water samples were collected on March 31, 2017. None of the samples exceeded the 0.015 mg/L Action Level. In fact, 15 of the 21 water samples had no detectible levels of lead present and only 1 water sample had a Lead content greater than 5 PPB.

4. Recommendations and Future Work

All 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 6 years or before July 2023.

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 Lead corrosion potential in drinking water piping systems. These include the chemistry of the water supplied to the building, temperature and water velocity, 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

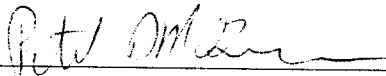
taps be investigated and reduced where appropriate while maintaining the minimum of 1 tap per 100 students.

- Consider implementing a program to shut-off and replace (if needed) any drinking water fixture of appliance that is more than 30 years old (was installed before the 1986 Lead Ban took effect).

Operational and Maintenance Responses:

- It is recommended that the water tap where the measured Lead content exceeded 5 parts per billion (PPB) or 0.005 mg/L be inspected and cleaned of line sediment to eliminate potential sources of Lead contamination.
- Use cold water only for drinking or cooking. As noted above, higher water temperature can increase its corrosion potential.
- As noted above, the accumulation of line sediment on aerators and screens at the water taps is frequently the cause of higher measured levels of both Lead and Copper. 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

Water Sampling Log

Name of Building: Blairstown School Date Collected: 31-Mar-17
 Building Owner: Blairstown Board of Education Sample Collected by: PD McGuinness

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Time	Results (mg/L)	
						Cu	Pb
033117-01	1	1st	Sink	Basement Room 35	06:27	0.33	0.0024
033117-02	2	1st	Sink	Maintenance Office	06:28	0.075	ND
033117-03	3	1st	Sink	Room 52 - Nurse's Office	06:33	0.15	0.0028
033117-04	4	1st	Sink	Kitchen Sink, left side only	06:34	0.031	ND
033117-05	5	1st	Bottle Filler	Main Hallway - outside Main Office	06:36	0.21	ND
033117-06	6	1st	Chiller	2nd Floor Hallway - outside Room 32	06:41	0.14	ND
033117-07	7	1st	Sink	Teachers' Lounge	06:37	0.29	ND
033117-08	8	1st	Chiller	Gym entrance Lobby	06:38	0.16	ND
033117-09	9	1st	Sink	Room 49, with coffee maker	06:40	0.34	0.0027
033117-10	10	1st	Chiller	Hallway - outside Room 27	06:42	0.37	ND
033117-11	11	1st	Sink	Library Office 63	06:43	0.053	0.012
033117-12	12	1st	Chiller	Hallway - outside Room 23	06:46	0.15	ND
033117-13	13	1st	Bottle Filler	1st floor Hallway - by lavatories, opposite Room 3	06:48	0.0084	ND
033117-14	14	1st	Chiller	Room 4	06:52	0.27	ND
033117-15	15	1st	Chiller	Hallway - outside Room 6, left side	06:54	0.61	0.0033
033117-16	16	1st	Chiller	Hallway - outside Room 6, right side	06:54	0.64	0.0048
033117-17	17	1st	Chiller	Room 5	06:56	0.28	ND
033117-18	18	1st	Chiller	Room 6	06:57	0.29	ND
033117-19	19	1st	Bottle Filler	2nd floor Hallway - by lavatories, opposite Room 12	06:59	0.0069	ND
033117-20	20	1st	Chiller	Hallway - outside Room 15, left side	07:02	0.18	ND

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

ND: means Not Detected at or above the Reliability Detection Limit (RDL) of 0.0020 mg/L for Lead.

