

Sampling Report - Lead in Drinking Water
Green Brook School District

1. Sampling Results Summary

Sample Collection Date	Jun 08, 2017
Number of Buildings Sampled	2
Total Number of Samples Collected	44
Number of Samples with No Detectible Lead	41
Number of Samples Exceeding 15 PPB (0.015 mg/L) Standard	0
Number of Samples Exceeding 5 PPB	3
Highest Measured Lead Content (mg/L)	0.010

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 44 water samples were collected on June 08, 2017 in both school buildings. None of the samples exceeded the 0.015 mg/L (15 PPB) Action Level. In fact, 41 of the 44 water samples had no detectible levels of Lead identified in the water. The other three water samples had a Lead content greater than 0.005 mg/L or 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, 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

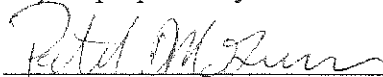
water taps be investigated and reduced where appropriate while maintaining the minimum of 1 tap per 100 students.

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

Operational and Maintenance Responses:

- It is recommended that the water taps 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:



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Vice President

Water Sampling Log

Name of Building Feldkirchner Elementary School
 Building Owner Green Brook Bd of Educ

Date Collected 8-Jun-17
 Sample Collected by PD McGuinness

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Sample Location	Time	Results (mg/L)	
							Cu	Pb
060817-01	1	1st	Sink		Kitchen - right sink, rear wall	06:25	0.37	ND
060817-02	2	1st	Sink		Kitchen - middle sink, food prep area	06:26	1.5	0.0073
060817-03	3	1st	Ice Machine		Kitchen - Ice Maker	06:28	0.020	ND
060817-04	4	1st	Chiller	Elkay	Hallway - outside Boiler Room	06:30	0.17	ND
060817-05	5	1st	Chiller	Elkay	Hallway - outside Boiler Room	06:30	0.18	ND
060817-06	6	1st	Chiller	Elkay	Hallway - across from MDF Room	06:32	0.22	ND
060817-07	7	1st	Chiller	Elkay	Hallway - across from MDF Room	06:32	0.25	ND
060817-08	8	1st	Bubbler		Room 115	06:35	0.58	ND
060817-09	9	1st	Bubbler		Room 114	06:37	0.74	ND
060817-10	10	1st	Bubbler		Room 113	06:38	0.52	ND
060817-11	11	1st	Bubbler		Room 112	06:40	0.59	ND
060817-12	12	1st	Bubbler		Room 111	06:41	0.59	ND
060817-13	13	1st	Bubbler		Room 110	06:43	0.40	ND
060817-14	14	1st	Chiller	Elkay	Hallway - outside Room 205	06:45	0.25	ND
060817-15	15	1st	Chiller	Elkay	Hallway - outside Room 205	06:45	0.27	ND
060817-16	16	1st	Chiller	Elkay	Hallway - between bathrooms near Room 121 / 201	06:47	0.28	ND
060817-17	17	1st	Chiller	Elkay	Hallway - between bathrooms near Room 121 / 201	06:47	0.71	ND
060817-18	18	1st	Chiller	Elkay	Hallway - outside Art Room 301	06:49	0.097	ND
060817-19	19	1st	Chiller	Elkay	Hallway - outside Art Room 301	06:49	0.14	ND
060817-22	20	1st	Bubbler		Art Room 301	06:51	0.39	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.

Water Sampling Log

Name of Building Feldkirchner Elementary School
 Building Owner Green Brook Bd of Educ

Date Collected 8-Jun-17
 Sample Collected by PD McGuinness

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Sample Location	Time	Results (mg/L)	
							Cu	Pb
060817-20	21	1st	Sink		Media Center Office	06:52	0.55	0.010
060817-21	22	1st	Sink		Faculty Work Room	06:54	0.33	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.

Water Sampling Log

Name of Building Green Brook Middle School
 Building Owner Green Brook Bd of Educ

Date Collected 8-Jun-17
 Sample Collected by PD McGuinness

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Sample Location	Time	Results (mg/L)	
							Cu	Pb
060817-41	1	1st	Sink		Kitchen - center sink, food prep area	07:10	0.052	ND
060817-42	2	1st	Pot Filler		Kitchen - food prep area	07:11	0.056	ND
060817-43	3	1st	Chiller	Elkay	Cafeteria	07:13	0.039	ND
060817-44	4	1st	Chiller	Elkay	Hallway - next to Room 220 (faculty Lunch Room)	07:14	0.045	ND
060817-45	5	1st	Chiller	Elkay	Hallway - outside Cafeteria, across from Room 213, left	07:16	0.042	ND
060817-46	6	1st	Chiller	Elkay	Hallway - outside Cafeteria, across from Room 213, right	07:16	0.043	ND
060817-47	7	1st	Ice Maker		Ice Machine, across from Kitchen	07:44	0.046	ND
060817-48	8	1st	Chiller	Elkay	Hallway - across from Room 112, left	07:18	0.16	ND
060817-49	9	1st	Chiller	Elkay	Hallway - across from Room 112, right	07:18	0.15	ND
060817-50	10	1st	Chiller	Elkay	Hallway - across from Media Center, left	07:12	0.083	ND
060817-51	11	1st	Chiller	Elkay	Hallway - across from Media Center, right	07:12	0.080	ND
060817-52	12	1st	Chiller	Elkay	Hallway - outside Room 101, left	07:15	0.16	ND
060817-53	13	1st	Chiller	Elkay	Hallway - outside Room 101, right	07:15	0.13	ND
060817-54	14	1st	Chiller	Elkay	Hallway - outside Art Room 301, left	07:18	0.040	ND
060817-55	15	1st	Chiller	Elkay	Hallway - outside Art Room 301, right	07:18	0.040	ND
060817-56	16	1st	Chiller	Elkay	Hallway - by Room 300, left	07:22	0.055	ND
060817-57	17	1st	Chiller	Elkay	Hallway - by Room 300, right	07:22	0.061	ND
060817-58	18	1st	Chiller	Elkay	Hallway - across from Room 321, left	07:25	0.035	ND
060817-59	19	1st	Chiller	Elkay	Hallway - across from Room 321, right	07:25	0.053	ND
060817-60	20	1st	Chiller	Elkay	Boys' Locker Room	07:28	0.071	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.

Water Sampling Log

Name of Building Green Brook Middle School Date Collected 8-Jun-17
 Building Owner Green Brook Bd of Educ Sample Collected by PD McGuinness

Sample No.	Tap No.	Sample Type	Type of Outlet	Manufacturer	Sample Location	Time	Results (mg/L)	
							Cu	.Pb
060817-61	21	1st	Spigot		Old Laundry Room	07:30	0.076	0.0051
060817-62	22	1st	Chiller	Elkay	Girls Locker Room	07:35	0.061	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.