October 28, 2019

Mr. Bernie Bowers
Operations Supervisor
Wyandotte Public Schools
639 Oak Street
Wyandotte, Michigan 48192
bbowers@wy.k12.mi.us

RE: **AEG Project # AE180812**
Lead Drinking Water Sampling
Garfield Elementary School

Dear Mr. Bowers:

Pursuant to the request of Wyandotte Public Schools, Arch Environmental Group, Inc. (AEG) collected five (5) representative first draw drinking water lead sample on October 22, 2019 at Garfield Elementary School.

General Information about Lead

There is no federal law requiring testing of drinking water in schools and childcare facilities, except for those that have and/or operate their own public water system and therefore are subject to comply with the Safe Drinking Water Act (SDWA). Drinking water programs are conducted on a voluntary basis.

Lead enters drinking water:

1. *Through Corrosion*
   Most lead gets into drinking water after the water leaves the local well or treatment plant and comes into contact with plumbing materials containing lead. These include lead pipe and lead solder (commonly used until 1986) as well as faucets, valves, and other components made of brass. The physical/chemical interaction that occurs between the water and plumbing is referred to as corrosion. The extent to which corrosion occurs contributes to the amount of lead that can be released into the drinking water.

2. *Faucet Aerators*
   Many taps that are used to provide water for human consumption have an aerator as part of the faucet assembly. Screens are not intended to remove contaminants in the water but may trap sediment or debris as water passes through the faucet. Lead bearing sediment may end up in drinking water from physical corrosion of leaded solder and can build up in the aerator over time.

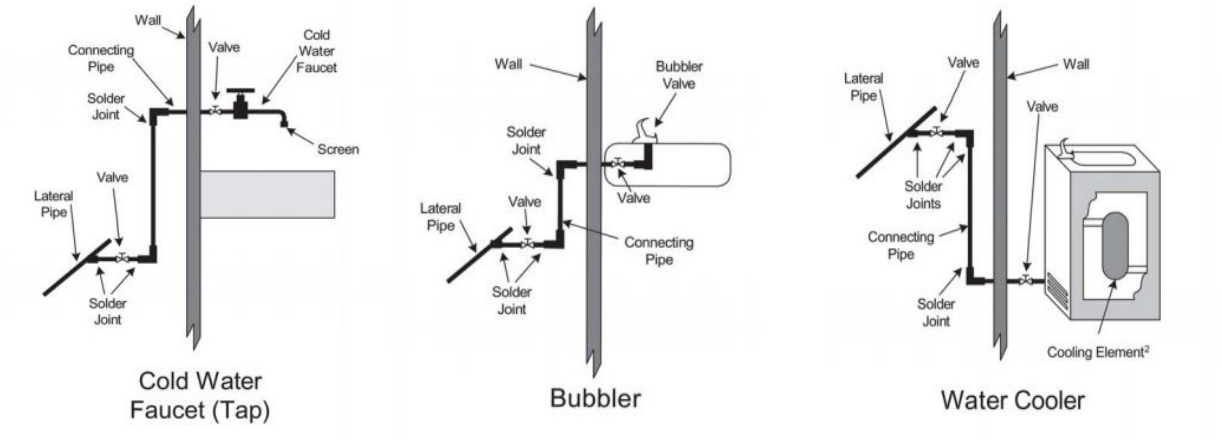
3. *Galvanized Piping*
   Additionally, galvanized pipes are old iron pipes that were installed in many homes built before the 1960s. Over many years, old corrosion scales build up inside the walls of galvanized pipes. These pipes can cause discolored water and pressure issues. Galvanized pipes can also release lead in water if you have or ever have had a lead service pipe.

4. *Brass Pipes, Faucets Fittings and Valves*
   Brass used prior to 2014 to deliver drinking water can contribute to lead levels at the tap. Lead has long been used in the foundry process to make brass castings pressure tight. Lead is sometimes added in concentrations of about 2%.

Action Levels

The Lead and Copper Rule (LCR) is a treatment technique rule. Instead of setting a maximum contaminant level (MCL) for lead or copper, the rule requires public water systems to take certain actions to minimize lead and copper in drinking water. The Action Level for lead is 15 ug/L (15 ppb). Beginning January 1, 2025, the action level for lead in the State of Michigan will be lowered to 12 ug/L (12 ppb). In August 2016, the MDEQ recommended school districts use the contaminate level goal of 5 ug/L (5 ppb). Finally, in May of 2019, The American Academy of Pediatrics called for new federal standards to ensure water lead concentrations do not exceed 1 ug/L (1 ppb). For this sampling event, the District shall utilize 12 ug/L (ppb) as the Action Level.

Common Drinking Water Outlets



Collection Procedures

All water samples were collected utilizing 250 milliliters (mL) sample bottles as recommended in the August 1, 2016, Version 3.0 "*MDEQ Guidance on Drinking Water Sampling for Lead and Copper at Schools and Daycares on Community Water Supplies*".

First Draw Sampling:

AEG collected first draw samples. A first draw is the water that is the first to come out of the tap after the period of 8-24 hours of inactivity.

All locations sampled identified lead below the 12 ug/L Action Level. No further action is recommended at this time.

If you have any questions regarding the report, please feel free to contact the cleanWATER team at (248) 426-0165 [office].

Sincerely,

Arch Environmental Group, Inc.
Environmental Services

Lindsey Eveleth
Consultant, D-5 Waterworks Operator

Attachments: Results Table
Analytical Results & Chain of Custody

Wyandotte Public Schools
Drinking Water Analysis
Project Number: AE180812

Garfield Elementary School							
Date of Sampling: 10/22/2019							
Sampler: Lindsey Eveleth							
Sample #	Location	Type[1]	Time Collected	District Internal Action Level (ug/L)[2]	Lead Results (ug/L)	Aerator Present Y/N	Notes
2019 Garfield-01	Hallway, Left of Room 106, Hydration Staton, Water Cooler	BT	7:08 AM	12	ND[3]	N	First Draw
2019 Garfield-02	Hallway, Right of Custodial Area and Boiler Room, Water Cooler	WC	7:12 AM	12	ND	N	First Draw
2019 Garfield-03	Hallway, Left of Room 220, Water Cooler	WC	7:17 AM	12	ND	Y	First Draw
2019 Garfield-04	Hallway, Across from Room 211, Water Cooler	WC	7:20 AM	12	ND	N	First Draw
2019 Garfield-05	Staff Lounge, Faucet	F	7:25 AM	12	ND	7	First Draw

1) Type: B = Bubbler, BT = Bottle Fill/Cooler, WC = Water Cooler, C = Combination Sink, F = Faucet, KF = Kitchen Faucet, I = Ice Machine, KK = Kitchen Kettle, PC = Plumed Coffee
2) https://www.epa.gov/your-drinking-water/table-regulated-drinking-water-contaminante
3) ND = Non Detected at Reported Detection Limit of 1 ug/L
4) NT = Not Tested

Brighton Analytical L.L.C. TM

2105 Pless Drive Brighton, Michigan 48114 Phone (810)229-7575 Fax (810)229-8650 E-mail bai-brighton@sbcglobal.net

October 24, 2019

Arch Environmental Group
37720 Interchange Dr.
Farmington Hills, MI 48335

Subject: Garfield Elementary School IFD
AE180812-WPS

Dear Ms. Eveleth :

Thank you for making Brighton Analytical, L.L.C. your laboratory of choice. Attached are the results for the samples submitted on 10/22/2019 for the above mentioned project. NELAP/TNI Accredited Analysis and EGLE Drinking Water Certified Analysis will be identified in their respective reporting formats. Hard copies can be supplied at your request for a fee of $20.00 per copy.

The invoice for this project will be emailed separately. If you have any questions concerning the data or invoice, please don't hesitate to contact our office. We welcome your comments and suggestions to improve our quality systems. Please reference Brighton Analytical, L.L.C. Project ID 61815 when calling or emailing. We thank you for this opportunity to partner with you on this project and hope to work with you again in the future.

Sincerely,
Brighton Analytical, L.L.C.

Brighton Analytical LLC
2105 Pless Drive
Brighton, Michigan 48114
Phone: (810)229-7575 (810)229-8650
e-mail:bai-brighton@sbcglobal.net
EGLE Certified #9404
NELAC Accredited #176507

Sample Date/Time:	10/22/2019	07:08
Submit Date/Time:	10/22/2019	12:55
Report Date:	10/24/2019	

Arch Environmental Group
37720 Interchange Dr.
Farmington Hills, MI 48335

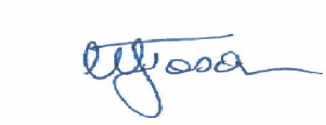
BA Project # **61815**
BA Sample ID **CL02954**

Project Name: **Garfield Elementary School IFD**
Project Number: **AE180812-WPS**
Sample ID: **2019 Garfield-01 L Rm 106 HS WC**

Analyte Name	Result	Units	RL	MCL	Method Reference	Analysis Time	Analysis Date
Drinking Water Metal Analysis							
Total Lead (Drinking Water)	Not detected	ug/L	1	15	EPA 200.8 rev5.4	15:46	10/23/2019

RL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

MCL = Maximum contaminant Levels.
Analysis not specifically identified as drinking water are for non-regulatory compliance purposes.

Released by 

Date 10/24/2019

Brighton Analytical LLC
2105 Pless Drive
Brighton, Michigan 48114
Phone: (810)229-7575 (810)229-8650
e-mail:bai-brighton@sbcglobal.net
EGLE Certified #9404
NELAC Accredited #176507

Sample Date/Time: 10/22/2019 07:12
Submit Date/Time: 10/22/2019 12:55
Report Date: 10/24/2019

Arch Environmental Group
37720 Interchange Dr.
Farmington Hills, MI 48335

BA Project # **61815**
BA Sample ID **CL02955**

Project Name: **Garfield Elementary School IFD**
Project Number: **AE180812-WPS**
Sample ID: **2019 Garfield-02 R Boiler Rm WC**

Analyte Name	Result	Units	RL	MCL	Method Reference	Analysis Time	Analysis Date
Drinking Water Metal Analysis							
Total Lead (Drinking Water)	Not detected	ug/L	1	15	EPA 200.8 rev5.4	15:50	10/23/2019

RL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

MCL = Maximum contaminant Levels.
Analysis not specifically identified as drinking water are for non-regulatory compliance purposes.

Released by

Date 10/24/2019

Brighton Analytical LLC
2105 Pless Drive
Brighton, Michigan 48114
Phone: (810)229-7575 (810)229-8650
e-mail:bai-brighton@sbcglobal.net
EGLE Certified #9404
NELAC Accredited #176507

Sample Date/Time:	10/22/2019	07:17
Submit Date/Time:	10/22/2019	12:55
Report Date:	10/24/2019	

Arch Environmental Group
37720 Interchange Dr.
Farmington Hills, MI 48335

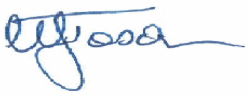
BA Project # **61815**
BA Sample ID **CL02956**

Project Name: **Garfield Elementary School IFD**
Project Number: **AE180812-WPS**
Sample ID: **2019 Garfield-03 L 220 WC**

Analyte Name	Result	Units	RL	MCL	Method Reference	Analysis Time	Analysis Date
Drinking Water Metal Analysis							
Total Lead (Drinking Water)	Not detected	ug/L	1	15	EPA 200.8 rev5.4	15:55	10/23/2019

RL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

MCL = Maximum contaminant Levels.
Analysis not specifically identified as drinking water are for non-regulatory compliance purposes.

Released by 

Date 10/24/2019

Brighton Analytical LLC
2105 Pless Drive
Brighton, Michigan 48114
Phone: (810)229-7575 (810)229-8650
e-mail:bai-brighton@sbcglobal.net
EGLE Certified #9404
NELAC Accredited #176507

Sample Date/Time:	10/22/2019	07:20
Submit Date/Time:	10/22/2019	12:55
Report Date:	10/24/2019	

Arch Environmental Group
37720 Interchange Dr.
Farmington Hills, MI 48335

BA Project # **61815**
BA Sample ID **CL02957**

Project Name: **Garfield Elementary School IFD**
Project Number: **AE180812-WPS**
Sample ID: **2019 Garfield-04 Acs Rm 211 WC**

Analyte Name	Result	Units	RL	MCL	Method Reference	Analysis Time	Analysis Date
Drinking Water Metal Analysis							
Total Lead (Drinking Water)	Not detected	ug/L	1	15	EPA 200.8 rev5.4	16:00	10/23/2019

RL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

MCL = Maximum contaminant Levels.
Analysis not specifically identified as drinking water are for non-regulatory compliance purposes.

Released by

Date 10/24/2019

Brighton Analytical LLC
2105 Pless Drive
Brighton, Michigan 48114
Phone: (810)229-7575 (810)229-8650
e-mail:bai-brighton@sbcglobal.net
EGLE Certified #9404
NELAC Accredited #176507

Sample Date/Time:	10/22/2019	07:25
Submit Date/Time:	10/22/2019	12:55
Report Date:	10/24/2019	

Arch Environmental Group
37720 Interchange Dr.
Farmington Hills, MI 48335

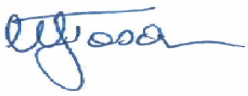
BA Project # **61815**
BA Sample ID **CL02958**

Project Name: **Garfield Elementary School IFD**
Project Number: **AE180812-WPS**
Sample ID: **2019 Garfield-05 Staff Lounge**

Analyte Name	Result	Units	RL	MCL	Method Reference	Analysis Time	Analysis Date
Drinking Water Metal Analysis							
Total Lead (Drinking Water)	Not detected	ug/L	1	15	EPA 200.8 rev5.4	16:04	10/23/2019

RL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

MCL = Maximum contaminant Levels.
Analysis not specifically identified as drinking water are for non-regulatory compliance purposes.

Released by 

Date 10/24/2019

Brighton Analytical, L.L.C™

2105 Pless Drive
Brighton, MI 48114
Phone: 810-229-7575 Fax: 810-229-8650

BA PROJECT #: 61815

PAGE: 1 OF 1

PROJECT NAME: (48 SPACES MAXIMUM)	Garfield Elementary School 17D
PROJECT NUMBER: (25 SPACES MAXIMUM)	AE180812
P.O. NUMBER:	Wyandotte Public Schools
Sample collected by:	Lindsey Eveleth
If RUSH approved by:	

REQUESTED TURNAROUND: (X BOX WITH TAT NEEDED)
Default TAT Standard: 5 - 10 Business days
RUSH: 1 Business day (verify with lab) RUSH: 1 ☐ √
2 Business days 2 ☐
RUSH: 3 Business days 3 ☐
RUSH SURCHARGE
1 DAY=3X COST 2 DAY = 2X COST 3 DAY = 1.5X COST

ABBREVIATIONS FOR SAMPLE MATRIX
S = Solid
L = Liquid
DW = Drinking H,0
WW = Wastewater
O = Oil
P = Wipe
A = Air (Tedlar Bag)
F = Filter
T = Tube
M = Misc
GW=Groundwater
SW = Surface Water

Analysis Requested/Method

Container Type & Quantity

Brighton ID #	Sample Description (35 Characters Limit)	Time	Date	VOA'S (PRES)	VOA'S (UNPRES)	HDPE UNPRESERVED	HDPE HNO_3 FILTERED	HDPE HNO_3 UNFILTERED	HDPE $H2SO_4$	HDPE NAOH	AMBER GLASS	AMBER GLASS (PRESERVE)(NOT PRESERVE)	STERILIZED BACTERIA	MEOH Preserved: (F)ield or (L)ab Preserved	Sample Matrix	LEAD
1) 20 2954	2019 Garfield-01 left of Rm 106, HS, WC	708	10/22					X							PW	X
2) 55	2019 Garfield-02 right of boiler Rm, WC	712														
3) 56	2019 Garfield-03 left of 220, WC	717														
4) 57	2019 Garfield-04 across from Rm 211, WC	720														
5) 58	2019 Garfield-05 staff lounge	725														
6)																
7)																
8)																
9)																
10)																

Special Instructions:

REPORT RESULTS TO:	
Arch Environmental Group	
Attn:	Lindsey Eveleth
PHONE:	
FAX:	
EMAIL:	labs@archenvgroup.com

Sample received within holding time? yes ☐ no ☐ Temperature of samples °C: 4.3
pH verified in login? yes ☐ no ☐
Headspace/bubbles in VOA'S? yes ☐ no ☐ n/a ☐
Sample containers and COC match? yes ☐ no ☐

BILLING ADDRESS (IF REQUIRED)

Drinking Water:
Fax to LCHD? yes ☐ no ☐
Chlorinated Water Supply? yes ☐ no ☐

MCL Failure yes ☐ no ☐
Client Notified (date/time/initials):

Please fill out the Chain of Custody completely and review. Incorrect or incomplete information will result in a "hold" on all analyses.

Trans. #	RELINQUISHED BY:	RECEIVED BY:	DATE:	TIME:	Trans. #	RELINQUISHED BY:	RECEIVED BY:	DATE:	TIME:
1			10/22/19	11:10	3				
2			10/22/19	12:55	4				

Brighton Analytical L.L.C.

BRIGHTON ANALYTICAL, LLC

QUALITY ASSURANCE/QUALITY CONTROL

ICP-MS
METHOD 200.8

REPRESENTATIVE BATCH PRECISION AND ACCURACY QUALITY CONTROL SUMMARY

Analysis Date: 10/23/2019 Standard ID: 102119 H2O Batch: 10/23/2019 W1

Matrix Spike Lab ID: CL02880 Matrix: Total Analyst: LT

Metals	Matrix Spike - Precision *			Matrix Spike - Accuracy**				Miscellaneous***		
	Matrix Spike (ug/L)	Matrix Spike Dup (ug/L)	RPD (%)	Spk Conc (ug/L)	MS Recovery (%)	MSD Recovery (%)	Sample Conc (ug/L)	Method Blk (ug/L)	LCS-Method STD (%)	Ind. Stc SPEX 1&3 (%)
Sodium	18882	18377	2.7	10000	90.1	85.1	9872	<1000	98.5	93.4
Chromium	1044	1038	0.6	1000	104.4	103.8	0	<5	105.6	100.7
Iron	10711	10660	0.5	10000	106.4	105.9	70	<20	106.8	103.5
Nickel	1047	1036	1.1	1000	104.4	103.3	3	<5	106.9	102.0
Copper	1105	1099	0.5	1000	104.5	103.9	60	<4	107.9	104.5
Zinc	1126	1122	0.4	1000	104.6	104.2	80	<10	106.1	101.0
Arsenic	1036	1016	1.9	1000	103.6	101.6	0	<1	99.9	99.4
Selenium	1020	1010	1.0	1000	102.0	101.0	0	<5	102.1	99.3
Silver	10.12	10.08	0.4	10	101.2	100.8	0	<0.2	103.2	101.5
Cadmium	1003	990	1.3	1000	100.3	99.0	0	<0.2	101.4	99.6
Barium	1043	1046	0.3	1000	102.9	103.2	14	<5	101.9	102.1
Lead	1008	990	1.8	1000	100.8	99.0	0	<1	100.4	99.3

* Matrix spike precision range +/- 20% RPD
** Matrix spike accuracy range +/- 20% recovery
*** LCS accuracy range +/- 15% recovery / Ind std accuracy range +/- 10% recovery

Comments: _____