Testing Engineers & Consultants, Inc.
1343 Rochester Road • PO Box 249 • Troy, Michigan 48099-0249
(248) 588-6200 or (313) T-E-S-T-I-N-G • Fax (248) 588-6232
www.testingengineers.com

TEC Report Number: 59768-01
Date Issued: June 4, 2019

Mr. Richard VanGorder
Manager of Buildings and Grounds
Grosse Pointe Public Schools
389 St. Clair
Grosse Pointe, MI 48230

Re: District-Wide Drinking Water Screening Sampling and Analysis for Lead and Copper. Sampling Dates: April 27, 2019 and May 4, 2019.

Dear Mr. VanGorder:

Testing Engineers & Consultants, Inc. (TEC) recently conducted district-wide drinking water screening sampling from various point of use outlets in each school. Both first-draw and two-minute flushed water samples were collected from representative drinking fountains and kitchen sinks at each location. All potential sampling locations had been flushed for at least two minutes the previous evening by Grosse Pointe Public Schools (GPPS) facilities staff. After sampling was completed, the samples were forwarded to an MDEQ-certified drinking water laboratory (Pace Analytical Laboratories, Grand Rapids, MI) and analyzed for lead and copper using EPA Analytical Method 200.8.

Appendix A provides a district-wide summary of the laboratory results by building. Appendices B through P each contain a summary table of findings for each individual school, a layout depicting sampling locations as well as the laboratory report and Chain of Custody document.

Use of Lead in Plumbing Systems

For many centuries, lead was the favored material for water pipes, because its malleability made it practical to work into the desired shape. Lead water pipes were still widely used into the first three decades of the 20th century in the United States. They were eventually replaced by service lines made of galvanized steel and other metals. Lead has been and continues to be used as an alloying element in cast bronze and brass plumbing fixtures, although the allowable levels have continued to drop due to regulatory requirements. Its presence in an alloy improves a part's machinability, reduces porosity and increases its overall corrosion resistance.

Continued….

Regulatory Review of Lead in Plumbing Systems

The Safe Drinking Water Act (SDWA) is the key federal law for protecting public water supplies from harmful contaminants. The SDWA was first enacted in 1974, with significant amendments in 1986 and 1996.

The 1986 revisions to the SDWA limited the amount of lead in plumbing fixtures to less than 8% and banned the use of lead pipe and lead solder for all plumbing systems providing water for human consumption. The definition of "lead free" for solder and flux was also updated to mean containing no more than 0.2% lead.

In 1991, EPA published the Lead and Copper Rule to control amounts of these contaminants in drinking water supplied by water utilities. Under this rule, the Maximum Contaminant Level Goal (MCLG) for lead is zero and for copper is 1.3 milligrams per liter (1.3 mg/L) for samples collected at the point of use. MCLGs are target concentrations for contaminants in drinking water below which there is no known or expected health risk. Additional treatment techniques such as corrosion control are required of the water system provider if concentrations exceed the Action Level (AL) of 0.015 mg/L for lead or 1.3 mg/L for copper.

In 1996 Congress further amended the Safe Drinking Water Act, requiring plumbing fittings and fixtures (endpoint devices) to be in compliance with voluntary lead leaching standards. The amendments also prohibited the introduction into commerce of any pipe, pipe or plumbing fitting or fixture that is not lead free.

In 2011 Congress passed the Reduction of Lead in Drinking Water Act (RLDWA) revising the definition of "lead free" by lowering the maximum lead content of the wetted surfaces of plumbing products (such as pipes, pipe fittings, plumbing fittings and fixtures) from 8% to a weighted average of 0.25% and also established a statutory method for the calculation of lead content.

Findings and Recommendations

A total of 118 water samples were collected for this screening sampling project. The district-wide findings are summarized in the two tables on the following pages. Table One provides an overview of the sample results which exceeded the EPA defined Action Levels under the Lead & Copper Rule. Table Two provides a summary of values which exceeded the current State of Michigan guidance for lead and copper in drinking water.

Table One
Number of Sample Results that Exceeded EPA Lead (Pb) or Copper (Cu) Action Levels*

School		School	
Barnes Early Childhood Center:	1 (Pb)	North High School:	1(Cu)
Brownell Middle School:	0	Parcells Middle School:	1 (Pb)
Defer Elementary School:	0	Pierce Elementary School:	0
Ferry Elementary School:	0	Poupard Elementary School:	0
Kerby Elementary School:	0	Richard Elementary School:	0
Maire Elementary School:	0	South High School:	0
Mason Elementary School:	0	Trombly Elementary School:	0
Monteith Elementary School:	0		

* The Action Levels established by EPA are the concentrations of lead and copper above which a water system provider is required to implement additional corrosion control techniques under the Lead & Copper Rule. The copper Action Level is 1.3 mg/L, which is also the Maximum Contaminant Level. The lead Action Level under the Lead & Copper Rule is 0.015 mg/L, however the Maximum Contaminant Level Goal is 0 mg/L.

Current MEGLE Guidance. Current guidance from the Michigan Department of Environmental Great Lakes & Energy (formerly Michigan Department of Environmental Quality)[1] is to recommend that schools take action to lower contaminant concentrations in drinking water whenever the test results for lead exceed 0.005 mg/L (or 5 ppb) or the test results for copper exceed 1.3 mg/L (or 1300 ppb). For this project, sample results that exceeded the MEGLE guidance for either lead or copper are listed in Table Two by school.

Table Two
Number of Sample Results that Exceeded MEGLE Guidance for Lead & Copper in Drinking Water *

School		School	
Barnes Early Childhood Center:	1 (Pb)	North High School:	1 (Pb & Cu)
Brownell Middle School:	1(Pb)	Parcells Middle School:	1 (Pb)
Defer Elementary School:	2 (Pb)	Pierce Elementary School:	0
Ferry Elementary School:	0	Poupard Elementary School:	0
Kerby Elementary School:	0	Richard Elementary School:	0
Maire Elementary School:	0	South High School:	0
Mason Elementary School:	1 (Pb)	Trombly Elementary School:	0
Monteith Elementary School:	0		

*"MDEQ Guidance on Drinking Water Sampling for Lead and Copper at Schools and Daycares on Community Water Supplies". Version 3.0- August 1, 2016. Current State of Michigan guidance for copper is 1.3 mg/L and for lead is 0.005 mg/L.

In circumstances where the first draw sample exceeds a reference value and the flushed sample does not, replacement of the fixture and its connection plumbing with lead free materials will significantly reduce the lead concentration at the location. If replacement is not currently feasible, sample results indicate that flushing for at least two minutes following periods of stagnation (particularly over weekends and holiday periods) is likely to reduce lead and copper concentrations. The actual duration that is needed may need to be determined by testing the water after various flushing times.

At locations where a flushed water sample exceeded the AL, additional assessment of the plumbing system is indicated to identify the likely source for the elevated lead or copper levels. Any fixtures which exceeded the Action Level should be labelled as "Do Not Use" or have the water supply shut off until assessment and corrective actions are completed.

We are pleased to provide this service. Should you have any questions or require additional information, please contact this office at your earliest convenience.

Respectfully Yours,
TESTING ENGINEERS & CONSULTANTS, INC.

Scott M. Chandler, CIH, LEED AP
Manager, Industrial Hygiene Services
SMC/sc

Testing Engineers & Consultants, Inc.
Grosse Pointe Public Schools
Mr. Richard VanGorder
June 4, 2019

TEC Report Number: 59768-01

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APPENDIX A

Grosse Pointe Public Schools
Summary of
Drinking Water Screening Sampling Results
April 27, 2019 and May 4, 2019

School	Location #	Sample ID	Description	Type	Lead, mg/L	Copper, mg/L
Barnes	1	1P	1st Floor; Conference Room 111; Sink	1st	**0.0541**	0.3400
		1F		F	<0.0010	0.0614
	2	2P	1st Floor; Drinking Fountian Outside Room 101	1st	<0.0010	0.1290
		2F		F	<0.0010	0.0513
	3	3P	1st Floor; Room 104/ Infant Room; Sink	1st	0.0015	0.3080
		3F		F	<0.0010	0.1920
	4	4P	2nd Floor; Faculty Lounge Room 207; Kitchen Sink	1st	0.0043	0.1790
		4F		F	<0.0010	0.0286
Brownell	1	1P	1st Floor; Kitchen Area; Right Sink	1st	0.0058	0.0384
		1F		F	<0.0010	0.0063
	2	2P	1st Floor; Drinking Fountain Near B28	1st	<0.0010	0.0466
		2F		F	<0.0010	0.0136
	3	3P	1st Floor; Room C7A/ Homemaking; Middle South Sink	1st	0.0035	0.0157
		3F		F	<0.0010	0.0110
	4	4P	1st Floor; Employee Lounge; East Sink	1st	0.0026	0.0324
		4F		F	<0.0010	0.0048
Defer	1	1P	1st Floor; Drinking Fountain Outside Room 107	1st	<0.0010	0.2760
		1F		F	<0.0010	0.0792
	2	2P	2nd Floor; Kitchen Area; Left Food Prep Sink	1st	0.0020	0.7920
		2F		F	<0.0010	0.0360
	3	3P	3rd Floor; Drinking Fountian Outside Room 307	1st	0.0065	0.1510
		3F		F	0.0055	0.0591

Grosse Pointe Public Schools
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School	Location #	Sample ID	Description	Type	Lead, mg/L	Copper, mg/L
Ferry	1	1P	1st Floor; Drinking Fountain Outside Main Office	1st	0.0017	0.7990
		1F		F	0.0027	1.100
	2	2P	1st Floor; Drinking Fountain Near Room 102	1st	<0.0010	0.0650
		2F		F	<0.0010	0.0275
	3	3P	2nd Floor; Drinking Fountain Near Room 201	1st	0.0010	0.0965
		3F		F	<0.0010	0.0737
Kerby	1	1P	1st Floor; Kitchen Area; Kitchen Sink	1st	<0.0010	0.0131
		1F		F	<0.0010	0.0112
	2	2P	1st Floor; Drinking Fountain Near Receiving Area	1st	<0.0010	0.0192
		2F		F	<0.0010	0.0093
	3	3P	1st Floor; Faculty Lounge; Sink	1st	0.0015	0.0227
		3F		F	<0.0010	0.0193
Maire	1	1P	1st Floor; Kitchen Area; Right Kitchen Sink	1st	0.0010	0.1010
		1F		F	<0.0010	0.0076
	2	2P	1st Floor; Drinking Fountian Near Gym	1st	<0.0010	0.2620
		2F		F	<0.0010	0.0434
	3	3P	2nd Floor; Drinking Fountain Near Room 200	1st	<0.0010	0.1480
		3F		F	<0.0010	0.0505
Mason	1	1P	1st Floor; Left Drinking Fountain Near Library	1st	<0.0010	0.3240
		1F		F	<0.0010	0.1130
	2	2P	1st Floor; Right Drinking Fountain Near Library	1st	<0.0010	0.1490
		2F		F	<0.0010	0.1120
	3	3P	2nd Floor; Right Drinking Fountain Near 203	1st	0.0107	0.2700
		3F		F	<0.0010	0.2200

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School	Location #	Sample ID	Description	Type	Lead, mg/L	Copper, mg/L
Monteith	1	1P	1st Floor; Kitchen Area; Kitchen Sink	1st	0.0014	0.0943
		1F		F	<0.0010	0.0157
	2	2P	2nd Floor; Drinking Fountain Near 210	1st	<0.0010	0.0469
		2F		F	<0.0010	0.0089
	3	3P	2nd Floor; Faculty Lounge; Sink	1st	<0.0010	0.2140
		3F		F	0.0012	0.1050
North HS	1	1P	1st Floor;Drinking Fountain near Southwest End of Auditorium	1st	0.0014	0.8970
		1F		F	0.0058	**1.4400**
	2	2P	1st Floor; Drinking Fountain Outside B102	1st	<0.0010	0.0972
		2F		F	0.0014	0.0317
	3	3P	1st Floor; Faculty Lounge Room 120; Sink	1st	0.0049	0.2670
		3F		F	0.0018	0.1760
	4	4P	1st Floor; Green Room; Sink	1st	<0.0010	0.0639
		4F		F	<0.0010	0.0211
	5	5P	2nd Floor; Drinking Fountain Near B205	1st	<0.0010	0.3180
		5F		F	0.0015	0.0527
	6	6P	2nd Floor; Drinking Fountain Near B216	1st	<0.0010	0.0878
		6F		F	<0.0010	0.0463
	7	7P	3rd Floor; Drinking Fountain Near B315	1st	<0.0010	0.2920
		7F		F	0.0017	0.1540
	8	8P	3rd Floor; Drinking Fountain Near B323	1st	<0.0010	0.5800
		8F		F	0.0022	0.4210

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School	Location #	Sample ID	Description	Type	Lead, mg/L	Copper, mg/L
Parcells	1	1P	1st Floor; Copy/Coffee Room; Sink	1st	0.0024	0.0103
		1F		F	<0.0010	0.0035
	2	2P	1st Floor; Drinking Fountain Near 104	1st	<0.0010	0.2850
		2F		F	<0.0010	0.0485
	3	3P	2nd Floor; Drinking Fountain Near 204	1st	<0.0010	0.2120
		3F		F	<0.0010	0.0657
	4	4P	2nd Floor; Drinking Fountain near 220	1st	0.0075	0.2160
		4F		F	**0.0183**	0.0192
Pierce	1	1P	1st Floor; Right Drinking Fountain Outside Room 110	1st	<0.0010	0.1020
		1F		F	<0.0010	0.0463
	2	2P	1st Floor; Gymnasium; West Drinking Fountain	1st	0.0015	0.2950
		2F		F	0.0017	0.0988
	3	3P	2nd Floor; Drinking Fountain Outside Room 201	1st	<0.0010	0.1960
		3F		F	<0.0010	0.0514
	4	4P	2nd Floor; Left Drinking Fountain Near Room 227	1st	<0.0010	0.0176
		4F		F	<0.0010	0.0081
Poupard	1	1P	1st Floor; Kitchen Area; Kitchen Sink	1st	0.0017	0.1570
		1F		F	<0.0010	0.0122
	2	2P	1st Floor; Left Drinking Fountain Near 107	1st	<0.0010	0.0190
		2F		F	<0.0010	0.0192
	3	3P	2nd Floor; Left Drinking Fountain Near 224	1st	<0.0010	0.0504
		3F		F	<0.0010	0.0383

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School	Location #	Sample ID	Description	Type	Lead, mg/L	Copper, mg/L
Richard	1	1P	1st Floor; Left Drinking Fountain Near Office	1st	<0.0010	0.0396
		1F		F	<0.0010	0.0240
	2	2P	1st Floor; Kitchen Area; Kitchen Sink	1st	<0.0010	0.1300
		2F		F	<0.0010	0.0535
	3	3P	2nd Floor; Right Drinking Fountain Near 206	1st	<0.0010	0.0424
		3F		F	<0.0010	0.0238
South HS	1	1P	1st Floor; Drinking Fountain East of Student Commons	1st	0.0019	0.1900
		1F		F	0.0023	0.2120
	2	2P	1st Floor; Dinking Fountain in Main Gymnasium	1st	0.0012	0.2240
		2F		F	<0.0010	0.2230
	3	3P	2nd Floor; "S" Building Faculty Lounge; Sink	1st	0.0018	0.4020
		3F		F	<0.0010	0.0463
	4	4P	2nd Floor; Cafeteria Area; West Food Prep Sink	1st	0.0013	0.0832
		4F		F	<0.0010	0.0606
	5	5P	1st Floor; Fine Arts Building; Drinking Fountain Outside Room 119	1st	<0.0010	0.1020
		5F		F	<0.0010	0.0488
	6	6P	2nd Floor; Faculty Lounge; Sink	1st	<0.0010	0.1930
		6F		F	<0.0010	0.1390
	7	7P	2nd Floor; Fine Arts Builiding; Drinking Fountian Outside Pool	1st	<0.0010	0.2690
		7F		F	<0.0010	0.2390
	8	8P	2nd Floor; Fine Arts Building; Concessions Area; Left Sink	1st	0.0016	0.0865
		8F		F	<0.0010	0.0023

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School	Location #	Sample ID	Description	Type	Lead, mg/L	Copper, mg/L
Trombly	1	1P	1st Floor; Kitchen Area; Right Kitchen Sink	1st	<0.0010	0.0074
		1F		F	<0.0010	0.0027
	2	2P	1st Floor; Kitchen Area; Left Kitchen Sink	1st	<0.0010	0.0388
		2F		F	<0.0010	0.1330
	3	3P	1st Floor; Faculty Lounge; Sink	1st	<0.0010	0.4360
		3F		F	<0.0010	0.0782