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March 27, 2016

Mr. Thor Uranis
Facilities Director
Taylor School District
23033 Northline Road
Taylor, Michigan 48180
Thor.Uranis@taylorschools.net

RE: **AEG Project # AE160192**
Drinking Water Sampling
Fifteen (15) District Buildings

Dear Mr. Uranis:

Pursuant to the request of Taylor School District, Arch Environmental Group, Inc. collected representative first draw drinking water lead samples and representative service connection lead samples on February 27, 2016 and March 5, 2016, at Blair Moody Elementary School, Eureka Heights Elementary School, Eurekadale Preschool, Holland Elementary School, Hoover Middle School, Johnson Preschool, Kennedy High School, Kinyon Elementary School, McDowell Elementary School, Myers Elementary School, Randall Elementary School, The Sixth Grade Academy, Taylor Parks Elementary School, Truman High School, and West Middle School. Additionally, follow-up samples were collected at McDowell Elementary School on March 12, 2016. The results of the sampling are detailed in the attached report.

If you have any questions regarding the report, please feel free to contact Christine Caddick at (248) 426-0165 [office] or (248) 792-1775 [mobile].

Sincerely,

Arch Environmental Group, Inc.
Environmental Services

Lauren Koloski
Project Consultant

Attach.

File: AE160192
Drinking Water Sampling

DRINKING WATER SAMPLING REPORT

Prepared For:
Taylor School District
23033 Northline Road
Taylor, Michigan 48180

Prepared By:
Arch Environmental Group, Inc.
37720 Interchange Drive
Farmington Hills, Michigan 48335

Project #: AE160192
Project Date(s): February 27, 2016 – March 12, 2016
Report Date: March 27, 2016

1.0 / Introduction

Pursuant to the request of Taylor School District, Arch Environmental Group, Inc. (AEG) collected fifty-nine (59) representative first draw drinking water samples and representative service connection samples at fifteen (15) District buildings. Samples were collected throughout Eureka Heights Elementary School, Eurekadale Preschool, Johnson Preschool, Kennedy High School, Randall Elementary School, Taylor Parks Elementary School, and West Middle School on February 27, 2016. Additionally, AEG collected first draw drinking water samples and representative service connection samples throughout Blair Moody Elementary School, Holland Elementary School, Hoover Middle School, Kinyon Elementary School, Mcdowell Elementary School, Myers Elementary School, The Sixth Grade Academy, and Truman High School on March 5, 2016. Furthermore, AEG collected one (1) follow-up drinking water sample on March 12, 2016, at McDowell Elementary School. All drinking water samples collected by AEG as part of a lead in drinking water testing program are collected and interpreted with the Environmental Protection Agencies (EPA] guidance manual *"3Ts for Reducing Lead in Drinking Water in Schools Revised Technical Guidance, October 2006"*; not to be confused with the protocol employed by public water suppliers. All samples were delivered to Certified Laboratory, Brighton Analytical, L.L.C., for analysis.

1.1 / Qualifications

AEG is a full spectrum environmental services firm specializing in environmental health and safety consulting. Mr. Steven Brewer, Ms. Erica Volansky, and Ms. Lauren Koloski collected the first draw and flush drinking water samples under the direct supervision of Ms. Christine Caddick, who is accredited by the Michigan Department of Environmental Quality as a Certified Waterworks System Operator, Classification D-5, Operator Number 18412.

2.0 / Contaminant Information

The sources of drinking water (both tap water and bottled water] include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

<u>Lead</u>

Lead enters into drinking water in two ways:

1. *At the Source*
   Most sources of drinking water have no lead or very low levels of lead (i.e., under 5 ug/L). However, lead is a naturally occurring metal and in some instances can get into well water. Lead can enter surface waters (waters from rivers, lakes, or streams] through direct or indirect discharges from industrial or municipal wastewater treatment plants or when lead in air settles into water or onto city streets and eventually, via rain water, flows into storm sewers, or waterways, which may enter the water supply. Lead from these sources can be easily removed by existing treatment plant technologies.

2. *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.

Even though your public water supplier may deliver water that meets all federal and state public health standards for lead, you may end up with too much lead in your drinking water because of the plumbing in your facility. The potential for lead to leach into water can increase the longer the water remains in contact with lead in plumbing. As a result, areas with intermittent water use patterns, may have elevated lead concentrations. Additionally, some lead may get into the water from the distribution system – the network of pipes that carry the water to homes, businesses, and schools in the community. Some communities have lead components in their distribution systems, such as lead joints in cast iron mains, service connections, pigtails, and goosenecks.

Public Water Supply Testing vs. Testing at Schools (15 ug/L vs. 20 ug/L)

Lead is regulated in public drinking water supplies under a federal law known as the Safe Drinking Water Act (SDWA). The requirements developed by EPA apply to public water systems. Schools that are served by a public water system (i.e., a drinking water system that they do not own or operate] are not subject to the SDWA monitoring and treatment requirements, because those schools do not meet the definition of a public water system.[1] Schools served by a PWS can implement a voluntary lead reduction program.[2] It is important to note that the lead testing protocol utilized by public water systems is aimed at identifying system-wide problems rather than problems at outlets in individual buildings. Moreover, the protocols for sample size and sampling procedures are different. Under the Lead Copper Rule (LCR) for public water systems, a lead action level of 15 ug/L is established for 1 liter samples taken by public water systems at high-risk residences. If more than 10 percent of the samples at residences exceed 15 ug/L, system-wide corrosion control treatment may be necessary. The 15 ug/L action level for public water systems is therefore a trigger for treatment rather than an exposure level. The EPA's action level of 15 ug/L for lead is for Public Water Systems.[3] The EPA recommends that all water outlets in all schools that receive water from a public water systems for drinking or cooking meet a standard of 20 ug/L lead or less.[4]

3.0 / Sampling

All sampling was conducted referencing EPA's guidance manual *"3Ts for Reducing Lead in Drinking Water in Schools Revised Technical Guidance, October 2006"*; not to be confused with the protocol employed by public water suppliers.

AEG collected representative first draw drinking water samples and representative service connection samples throughout Eureka Heights Elementary School, Eurekadale Preschool, Johnson Preschool, Kennedy High School, Randall Elementary School, Taylor Parks Elementary School, and West Middle School on February 27, 2016. Additionally, AEG collected first draw drinking water samples and representative service connection samples throughout Blair Moody Elementary School, Holland Elementary School, Hoover Middle School, Kinyon Elementary School, Myers Elementary School, The Sixth Grade Academy, and Truman High School on March 5, 2016. All representative first draw drinking water samples and representative service connection samples from the above locations identified lead levels below the EPA's 3T's drinking water level of 20 ug/L. Specific sample information is located in Appendix A.

However, one (1] of the three (3) samples collected on March 5, 2016, from McDowell Elementary School identified lead above the EPA's 3T's drinking water level of 20 ug/L. The sample collected from the Kitchen's 3-compartment right sink reported a lead level of 110 ug/L.

Following the identification of the elevated lead at McDowell Elementary School on March 5, 2016, at the Kitchen 3-compartment right sink, After discussions with the Facilities Director, it was noted that the Kitchen Staff at McDowell Elementary Schools uses the 3-compartment sink for storage and not consumption purposes, and it was determined that the sample collected was not an accurate representative sample for drinking water. AEG returned to McDowell Elementary School on March 12, 2016, and collected one (1) first draw drinking water sample from a more accurate location in the Kitchen that represented consumable water. This sample was collected from the 1-compartment sink on the northwest wall of the Kitchen. This sample identified a lead level of 17 ug/L, which is below the EPA's 3T's drinking water level of 20 ug/L.

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[1] *United States Environmental Protection Agency's manual "3T's for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance, October 2006"*, pg. 12.

[2] https://www.epa.gov/dwreginfo/testing-schools-and-child-care-centers-lead-drinking-water#sampleresults.

[3] https://www.epa.gov/dwreginfo/testing-schools-and-child-care-centers-lead-drinking-water#sampleresults.

[4] *United States Environmental Protection Agency's manual "3T's for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance, October 2006"*, pg. 28.

Taylor School District immediately shut down the water to the McDowell Elementary School 3-compartment sink and placed a "No Drinking" sign at the faucet. The School District is discussing plans to remove this sink in the summer of 2016-2017.

4.0 / Conclusion

AEG collected fifty-nine (59) representative first draw drinking water samples and representative service connection samples for Taylor School District. Samples were collected throughout Eureka Heights Elementary School, Eurekadale Preschool, Johnson Preschool, Kennedy High School, Randall Elementary School, Taylor Parks Elementary School, and West Middle School on February 27, 2016. Additionally, AEG collected first draw drinking water samples and representative service connection samples throughout Blair Moody Elementary School, Holland Elementary School, Hoover Middle School, Kinyon Elementary School, Mcdowell Elementary School, Myers Elementary School, The Sixth Grade Academy, and Truman High School on March 5, 2016.

The representative first draw drinking water samples and representative service connection samples collected throughout Eureka Heights Elementary School, Eurekadale Preschool, Johnson Preschool, Kennedy High School, Randall Elementary School, Taylor Parks Elementary School, and West Middle School on February 27, 2016 identified lead levels below the EPA's 3T's drinking water level of 20 ug/L. Additionally, the first draw drinking water samples and representative service connection samples throughout Blair Moody Elementary School, Holland Elementary School, Hoover Middle School, Kinyon Elementary School, Myers Elementary School, The Sixth Grade Academy, and Truman High School on March 5, 2016, identified lead levels below the EPA's 3T's drinking water level of 20 ug/L.

It is the opinion of Arch Environmental Group, Inc. that the results indicate that no additional actions are necessary at the locations identified above.

However, the sample collected from the Kitchen 3-compartment right sink at McDowell Elementary School on March 5, 2016, reported lead at 110 ug/L, above the EPA's 3T's drinking water level of 20 ug/L. Following the initial sample results it was determined that the Kitchen Staff at McDowell Elementary Schools uses the 3-compartment sink for storage and not consumption purposes. AEG returned on March 12, 2016, to collect a first draw sample from a more representative drinking water location in the Kitchen. The 1-compartment sink on the northwest wall of the Kitchen identified a lead level of 17 ug/L, which is below the EPA's 3T's drinking water level of 20 ug/L.

It is the opinion of AEG that Taylor School District conduct the following:

<u>Interim Measures:</u>

1. Shut the water off to the 3-compartment sink in the Kitchen at McDowell Elementary School
    - Place a "No Drinking" sign at the sink to ensure the water is not used for consumption.

<u>Permanent:</u>

2. Replace the faucets on the 3-compartment sink in the Kitchen at McDowell Elementary School.

Of the fifty-nine (59) water samples that were tested throughout the district, only one (1) showed lead levels above the 20 ug/L mark. In other words, 98% of the water outlets tested did not have any lead problems.

Below are routine activities identified by the EPA that may be conducted to prevent elevated lead levels:

1. Create aerator (screen) cleaning maintenance schedule and clean debris from all accessible aerators frequently.

2. Use only cold water for food and beverage preparation. Hot water will dissolve lead more quickly than cold water and is likely to contain increased lead levels.

3. Instruct the users (students and staff) to run the water before drinking or staff could run the water before students arrive, so they are drinking water that has not been in contact with the faucet interior since faucets are often a major source of lead in drinking water.

4. Shut off outlets not is use.

5. Drinking fountains with reduced or low flow should be removed from service until repaired.

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Taylor School District
Drinking Water Lead Analysis
Project Number: AE160192

Blair Moody Elementary School
Date of Sampling: March 5, 2016
Sampler: Erica Volansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Bmood-01	Slop sink in custodial #1	SS	9:31 AM	20	ND	Service connection
Bmood-02	Kitchen sink, 2-compartment	S	9:28 AM	20	4	First Draw
Bmood-03	Fountain between Rooms 23 & 25	C	9:23 AM	20	ND	First Draw

Eureka Heights Elementary School
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Ehts-01	Sink in Room K-1A	*S	8:01 AM	20	2	First Draw
Ehts-02	Fountain in Gym	C	8:06 AM	20	1	First Draw
Ehts-03	Slop sink in Boiler Room	SS	8:09 AM	20	ND	Service connection

Eurekadale Preschool
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Edale-01	Fountain across from Room 101	D	7:37 AM	20	2	First Draw
Edale-02	Kitchen center island prep sink	S	7:41 AM	20	ND	First Draw
Edale-03	Custodian closet slop sink across from Room 3	SS	7:44 AM	20	ND	Service Connection

Holland Elementary School
Date of Sampling: March 5, 2016
Sampler: Erica Volansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Holl-01	Slop sink in Boiler Room	SS	8:26 AM	20	ND	Service connection
Holl-02	Kitchen, comp. sink, middle faucet	S	8:15 AM	20	4	First Draw
Holl-03	Fountain in hall outside Gym	C	8:22 AM	20	ND	First Draw

1) Type: S = Sink, *S = Sink Used for Drinking, C = Cooler, D = Drinking Fountain, SD = Sink/ Drinking Fountain combo, SS = Slop Sink. 2) *EPA manual "3T's for Reducing Lead in Drinking Water in Schools"*, pg. 28.

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Taylor School District
Drinking Water Lead Analysis
Project Number: AE160192

Hoover Middle School
Date of Sampling: March 5, 2016
Sampler: Erica Voiansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Hoovr-01	Spigot on water main, copper pipe	WM	9:00 AM	20	1	Service connection
Hoovr-02	Fountain outside Gym, right, Room 128	C	8:44 AM	20	ND	First Draw
Hoovr-03	Fountain across from Room 102, right	C	8:48 AM	20	ND	First Draw
Hoovr-04	Fountain across from Room 125, right	D	8:53 AM	20	1	First Draw
Hoovr-05	Kitchen, 3-compartment sink, middle faucet	S	8:56 AM	20	4	First Draw

Johnson Preschool
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
John-01	Fountain in Room 11	D	9:27 AM	20	15	First Draw
John-02	Fountain in Room 17	D	9:31 AM	20	6	First Draw
John-03	Slop sink in Custodial Closet next to Boiler Room	SS	9:33 AM	20	ND	Service connection

Kennedy High School
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Kenn-01	Fountain outside Gym entrance	C	6:58 AM	20	2	First Draw
Kenn-02	Fountain across from Room 102	C	7:01 AM	20	ND	First Draw
Kenn-03	Office sink	S	7:04 AM	20	ND	First Draw
Kenn-04	Fountain across from Room 209	C	7:08 AM	20	ND	First Draw
Kenn-05	Fountain across from Main Office	C	7:11 AM	20	ND	First Draw
Kenn-06	Kitchen 2-compartment sink E. wall	S	7:14 AM	20	3	First Draw
Kenn-07	Boiler Room slop sink	SS	7:17 AM	20	ND	Service Connection

Kinyon Elementary School
Date of Sampling: March 5, 2016
Sampler: Erica Voiansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Knyn-01	Sink in Maintenance Office	SS	10:03 AM	20	ND	Service connection
Knyn-02	Kitchen compartment sink	S	10:00 AM	20	8	First Draw
Knyn-03	Fountain outside Room 22, right	D	9:53 AM	20	5	First Draw

1) Type: S = Sink, *S = Sink Used for Drinking, C = Cooler, D = Drinking Fountain, SD = Sink/ Drinking Fountain combo, SS = Slop Sink. 2) *EPA manual "3T's for Reducing Lead in Drinking Water in Schools"*, pg. 28.

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Taylor School District
Drinking Water Lead Analysis
Project Number: AE160192

McDowell Elementary School
Date of Sampling: March 5, 2016
Sampler: Erica Volansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Mcdll-01	Sink in Janitor's Closet, Room 157	SS	10:27 AM	20	ND	Service connection
Mcdll-02	Kitchen, 3-compartment sink, right faucet	S	10:24 AM	20	110	First Draw
Mcdll-03	Fountain across from Room 111	C	10:19 AM	20	ND	First Draw

McDowell Elementary School
Date of Sampling: March 12, 2016
Sampler: Lauren Koloski

Sample #	Location	Type	Time Collected	EPA Level ug/L	Results (ug/L)	Notes
MCDLL-04	1-Compartment sink northwest wall	*S	8:03 AM	20	17	Flush Follow-Up Sample

Myers Elementary School
Date of Sampling: March 5, 2016
Sampler: Erica Volansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Myer-01	Slop sink in Custodial Supply Closet	SS	11:43 AM	20	ND	Service connection
Myer-02	Drinking fountain across from Room 101	S	11:41 AM	20	1	First Draw
Myer-03	Kitchen, single sink by DW	C	11:31 AM	20	ND	First Draw

Randall Elementary School
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Crand-01	Fountain across from Room 29	C	9:04 AM	20	1S	First Draw
Crand-02	Fountain between Rooms 1 & 2	C	9:10 AM	20	6	First Draw
Crand-03	Slop sink in Custodial Closet next to Boiler Room	SS	9:12 AM	20	ND	Service Connection

1) Type: S = Sink, *S = Sink Used for Drinking, C = Cooler, D = Drinking Fountain, SD = Sink/ Drinking Fountain combo, SS = Slop Sink. 2) *EPA manual "3T's for Reducing Lead in Drinking Water in Schools"*, pg. 28.

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Taylor School District
Drinking Water Lead Analysis
Project Number: AE160192

The Sixth Grade Academy
Date of Sampling: March 5, 2016
Sampler: Erica Volansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Sixay-01	Slop sink in Boiler Room	SS	10:52 AM	20	ND	First Draw
Sixay-02	Kitchen, 2-compartment sink	S	11:03 AM	20	4	First Draw
Sixay-03	Fountain outside Gym	C	10:59 AM	20	ND	First Draw
Sixay-04	Fountain in hall by Newspaper Room	C	10:47 AM	20	ND	First Draw
Sixay-05	Fountain in hall by Main Office	C	10:43 AM	20	3	Service connection

Taylor Parks Elementary School
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Tpar-01	Fountain between Rooms 6 & 7	D	9:47 AM	20	ND	First Draw
Tpar-02	Fountain outside of Gym	D	9:50 AM	20	2	First Draw
Tpar-03	Slop sink in Boiler Room	SS	9:52 AM	20	ND	Service connection

Truman High School
Date of Sampling: March 5, 2016
Sampler: Erica Volansky

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Trumn-01	Water main spigot on south wall	WM	7:56 AM	20	2	Service Connection
Trumn-02	Drinking fountain by Gym	D	7:21 AM	20	ND	First Draw
Trumn-03	Concession Stand by Gym	*S	7:25 AM	20	15	First Draw
Trumn-04	Drinking fountain with cooling by café	C	7:30 AM	20	ND	First Draw
Trumn-05	Tall drinking fountain by bathroom	D	7:35 AM	20	ND	First Draw
Trumn-06	Rinse sink by Room 208	S	7:39 AM	20	7	First Draw
Trumn-07	Drinking fountain by Room 302	D	7:41 AM	20	1	First Draw

West Middle School
Date of Sampling: February 27, 2016
Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
Wems-01	Fountain next to Asst Principal Office	C	8:31 AM	20	1	First Draw
Wems-02	Fountain across from Room 119	C	8:34 AM	20	ND	First Draw
Wems-03	Fountain in Gym Locker Room	C	8:38 AM	20	1	First Draw
Wems-04	Kitchen 2-compartment sink south wall	S	8:42 AM	20	2	First Draw
Wems-05	Slop sink in Boiler Room	SS	8:45 AM	20	1	Service connection

1) Type: S = Sink, *S = Sink Used for Drinking, C = Cooler, D = Drinking Fountain, SD = Sink/ Drinking Fountain combo, SS = Slop Sink. 2) *EPA manual "3T's for Reducing Lead in Drinking Water in Schools"*, pg. 28.

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April 22, 2016

Mr. Thor Uranis
Facilities Director
Taylor School District
23033 Northline Road
Taylor, Michigan 48180
Thor.Uranis@taylorschools.net

RE: **AEG Project # AE160192C**
Drinking Water Sampling
Two (2) District Buildings

Dear Mr. Uranis:

Pursuant to the request of Taylor School District, Arch Environmental Group, Inc. collected representative first draw drinking water lead samples at the Board Annex Building and the Career Technical Center on April 9, 2016. The results of the sampling are detailed in the attached report.

If you have any questions regarding the report, please feel free to contact Jenna Sendra at (248) 426-0165 (office) or (734) 239-1424 (mobile).

Sincerely,

Arch Environmental Group, Inc.
Environmental Services

Lauren Koloski
Project Consultant

Attach.

File: AE160192C
Drinking Water Sampling

DRINKING WATER SAMPLING REPORT

Prepared For:
Taylor School District
23033 Northline Road
Taylor, Michigan 48180

Prepared By:
Arch Environmental Group, Inc.
37720 Interchange Drive
Farmington Hills, Michigan 48335

Project #:	AE160192C
Project Date(s):	April 9, 2016
Report Date:	April 22, 2016

1.0 / Introduction

Pursuant to the request of Taylor School District, Arch Environmental Group, Inc. (AEG), a licensed environmental consulting firm collected six (6) first draw drinking water samples throughout the Board Annex Building and the Career Technical Center on April 9, 2016. Samples were collected from high priority water outlets, these outlets may include food prep sinks and student drinking fountains. All drinking water samples collected by AEG as part of a lead in drinking water testing program are collected and interpreted with the Environmental Protection Agencies (EPA) guidance manual *"3Ts for Reducing Lead in Drinking Water in Schools Revised Technical Guidance, October 2006"*; not to be confused with the protocol employed by public water suppliers. All samples were delivered to Certified Laboratory, Brighton Analytical, L.L.C., for analysis.

1.1 / Qualifications

AEG is a full spectrum environmental services firm specializing in environmental health and safety consulting. Mr. Steven Brewer collected first draw drinking water samples under the direct supervision of Ms. Christine Caddick who is accredited by the Michigan Department of Environmental Quality as a Certified Waterworks System Operator, Classification D-5, Operator Number 18412.

2.0 / Contaminant Information

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

<u>Lead</u>

Lead enters into drinking water in two ways:

1. *At the Source*
   Most sources of drinking water have no lead or very low levels of lead (i.e., under 5 ug/L). However, lead is a naturally occurring metal and in some instances can get into well water. Lead can enter surface waters (waters from rivers, lakes, or streams) through direct or indirect discharges from industrial or municipal wastewater treatment plants or when lead in air settles into water or onto city streets and eventually, via rain water, flows into storm sewers, or waterways, which may enter the water supply. Lead from these sources can be easily removed by existing treatment plant technologies.

2. *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.

3. 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 had, a lead service pipe.

Even though your public water supplier may deliver water that meets all federal and state public health standards for lead, you may end up with too much lead in your drinking water because of the plumbing in your facility. The potential for lead to leach into water can increase the longer the water remains in contact with lead in plumbing. As a result, areas with intermittent water use patterns, may have elevated lead concentrations. Additionally, some lead may get into the water from the distribution system – the network of pipes that carry the water to homes, businesses, and schools in the community. Some communities have lead components in their distribution systems, such as lead joints in cast iron mains, service connections, pigtails, and goosenecks.

Public Water Supply Testing vs. Testing at Schools (15 ug/L vs. 20 ug/L)

Lead is regulated in public drinking water supplies under a federal law known as the Safe Drinking Water Act (SDWA). The requirements developed by EPA apply to public water systems. Schools that are served by a public water system (i.e., a drinking water system that they do not own or operate) are not subject to the SDWA monitoring and treatment requirements, because those schools do not meet the definition of a public water system.[1] Schools served by a Public Water System can implement a voluntary lead reduction program.[2] It is important to note that the lead testing protocol utilized by public water systems is aimed at identifying system-wide problems rather than problems at outlets in individual buildings. Moreover, the protocols for sample size and sampling procedures are different. The EPA's action level of 15 ug/L for lead is for Public Water Systems.[3] The EPA recommends that all water outlets in all schools that receive water from a public water systems meet a standard of 20 ug/L lead or less.[4] An action level exceedance is not a violation but triggers other actions to minimize exposure to lead.[5]

3.0 / Sampling

All sampling was conducted referencing EPA's guidance manual *"3Ts for Reducing Lead in Drinking Water in Schools Revised Technical Guidance, October 2006"*; not to be confused with the protocol employed by public water suppliers.

The representative first draw drinking water samples collected in the Board Annex Building and the Career Technical Center on April 9, 2016, identified lead levels below the EPA's 3T's drinking water level of 20 ug/L. Specific sample information is located in Appendix B.

4.0 / Conclusion

AEG collected six (6) representative first draw drinking water samples throughout the Board Annex Building and the Career Technical Center on April 9, 2016.

The representative first draw drinking water samples collected in the Board Annex Building and the Career Technical Center on April 9, 2016, identified lead levels below the EPA's 3T's drinking water level of 20 ug/L.

It is the opinion of Arch Environmental Group, Inc. that the results indicate that no additional actions are necessary at the locations sampled.

[1] United States Environmental Protection Agency's manual *"3T's for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance, October 2006"*, pg. 12.
[2] https://www.epa.gov/dwreginfo/testing-schools-and-child-care-centers-lead-drinking-water#sampleresults.
[3] https://www.epa.gov/dwreginfo/testing-schools-and-child-care-centers-lead-drinking-water#sampleresults.
[4] United States Environmental Protection Agency's manual *"3T's for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance, October 2006"*, pg. 28.
[5] https://www.michigan.gov/deq/0,4561,7-135-3313_3675_3691-9677--,00.html.

environmental group

Taylor School District
Drinking Water Lead Analysis
Project Number: AE160192C

Board Annex Building

Date of Sampling: April 9, 2016

Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
CTECH - 01	Across from Room 109	WC	7:56 AM	20	2	First Draw
CTECH - 02	Kitchen 2-Compartment Sink, north wall	KS	8:03 AM	20	ND[3]	First Draw
CTECH - 03	Across from Room 104	WC	8:08 AM	20	3	First Draw

Career Technical Center

Date of Sampling: April 9, 2016

Sampler: Steven Brewer

Sample #	Location	Type[1]	Time Collected	EPA Level ug/L[2]	Results (ug/L)	Notes
CTECH - 04	Right Drinking Fountain across from the Health Science EMT Room	WC	8:18 AM	20	1	First Draw
CTECH - 05	Nurse sink in Health Science EMT Room	NS	8:22 AM	20	3	First Draw
CTECH - 06	Main Office, Lounge Sink	KS	8:26 AM	20	2	First Draw

1) Type: B = Bubbler; WC = Water Cooler; CF = Classroom Faucet; KS = Kitchen Sink; BF = Bathroom Faucet; NS = Nurse Sink "3T's for Reducing Lead in Drinking Water in Schools", pg. 28.

2) EPA manual "3T's for Reducing Lead in Drinking Water in Schools", pg. 28.

3) ND = Not Detected at Reported Detection Limit of 1 ug/L